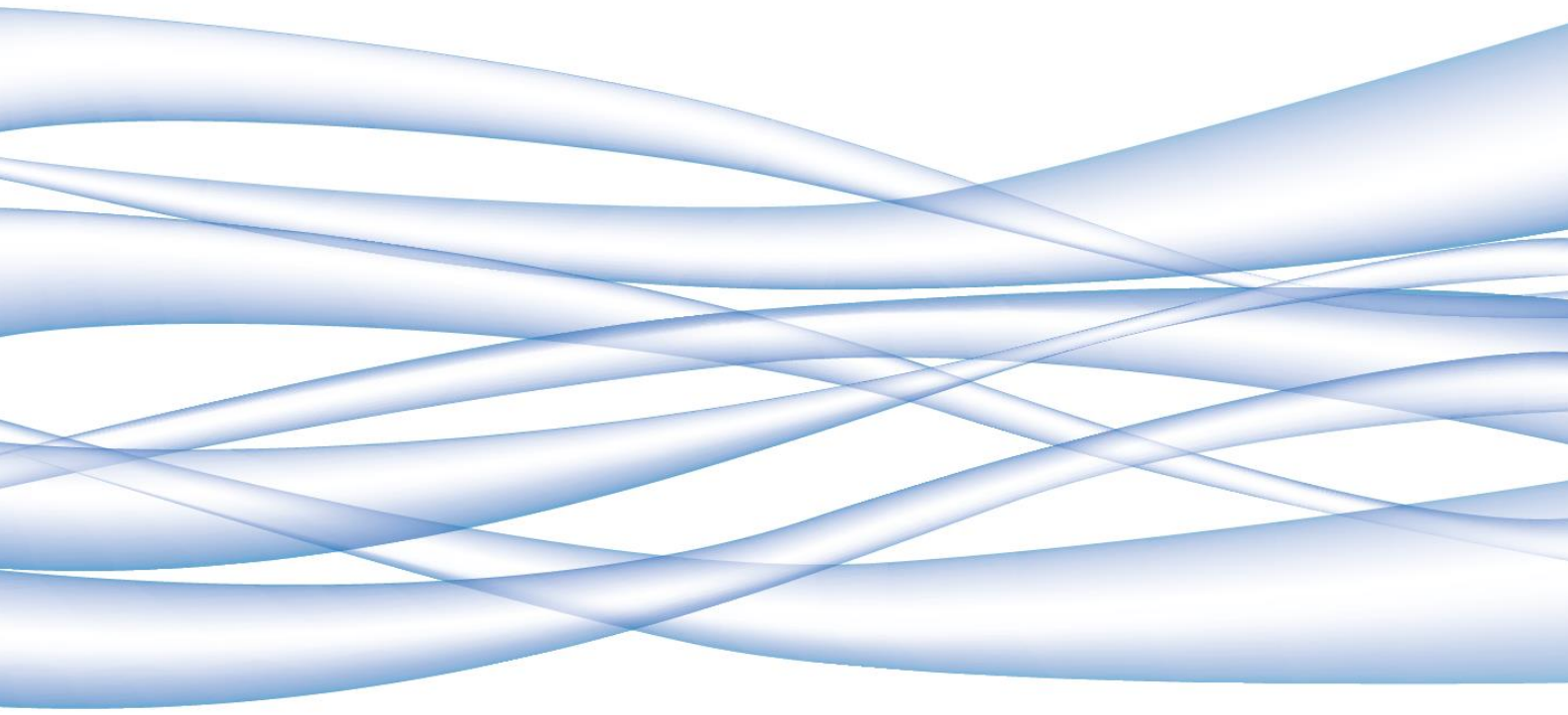
ULTRA

ENERGY MANAGEMENT EQUIPMENT

PERFORMANCE BOOK



ULTRA
KESECO

The Ultra Performance

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C.E.O Message

Welcome Customers!

The goal of KESECO's product is to significantly reduce electricity consumption globally by improving efficiency of AC electrical current flow.

We are passionate about the innovative technology "ULTRA", which can help in reducing electricity consumption. And we are working diligently to find new applications of ULTRA for our customers.

Besides, we have very keen eyes to world environment, economy, and advanced technology.
Nowadays, as electric consumption and energy costs have been increased globally, ULTRA gives customers more customized and better solution to reduce their energy consumption in the safest way.

I strongly recommend you ULTRA which is made by trained professionals of KESECO in South Korea. We believe that It will provide you with an outstanding electricity saving performance.

So, we would like to invite you to an energy saving experience of Ultra for your house, business areas, and industrial facilities.

C.E.O of KESECO Co., Ltd. James, Kim 

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01 Installation Cases

FACTORIES

Page No.	Installation Date	Client	Saving Rate	Installation Model
15	2011-06-25	Aggregate	7.3%	UC-100
16	2011-10-17	AmBev	11.8%	UR-30, UC-100, UC-200
17	2010-11-22	AMPAS	5.62%	UC-100
18	2014-08-06	ANP	7.5%	UC-200
19	2011-08-08	ANTON	10.1%	UC-100
20	2008-10-24	Catering Factory	13.6%	UR-30
22	2012-10-01	DENSO	8.0%	UC-100, UC-200, U-500
23	2013-03-20	DENTDOCTOR	8.3%	UC-50, UC-100
24	2010-04-29	EPRO Co.	5.8%	UC-50, UC-100 (2ea), UC-200 (2ea), U-300
25	2014-09-22	FINE Tech	14.1%	UC-200
26	2010-12-03	I.P. Manufacturing	9.24%	UC-50
27	2012-04-01	Kaunas Grain ltd.	7.44%	U-1000
32	2014-03-12	Nam-yang Industry	6.42%	UC-200
33	2014-03-19	NH Food	6.92%	UC-100
34	2011-11-15	Oriel	8.32%	UC-50, UC-100 (3ea)
38	2009-03-06	Spanopoulos	14.1%	UR-20, UR-30, UC-50 (4ea), U-300
40	2013-06-21	Sung-Ho Polytech	8.1%	UC-200
41	2012-05-01	TNS	8.09%	U-700

FACTORIES

Page No.	Installation Date	Client	Saving Rate	Installation Model
42	2012-05-28	TNS	11.12%	UC-100 (4ea), U-300
43	2012-08-01	UNISON	6.3%	UC-50 (4ea), UC-100 (5ea), U-500
44	2013-11-26	Woo Jung Jung Mil	14.4%	U-500
45	2011-04-08	ZAGORI Water	12.75%	UC-200

GAS STATIONS

Page No.	Installation Date	Client	Saving Rate	Installation Model
49	2012-04-19	CALTEX	12.0%	UC-50
51	2010-10-01	CALTEX	11.94%	UC-100
53	2011-11-01	EKO	10.4%	UR-10 (2ea), UC-50
54	2010-12-27	Shell	8.4%	UC-100
55	2014-04-16	Won-il Energy Gas Station	9.2%	UC-100

COLD STORAGES

Page No.	Installation Date	Client	Saving Rate	Installation Model
56	2011-10-17	COLDSTAR	7.82%	U-300, U-500
59	2013-11-22	Ottogi Distribution Center	11.98%	U-500
60	2014-05-19	PULMUONE	8.94%	UR-20
61	2012-05-04	Seo-Jin L&C	15.5%	UC-200

KESECO

PUMP STATIONS

Page No.	Installation Date	Client	Saving Rate	Installation Model
62	2008-12-22	Danmok Pump Station	7.67%	UC-100
65	2010-03-08	Masan Pump Station	11.0%	U-500

RESTAURANTS

Page No.	Installation Date	Client	Saving Rate	Installation Model
66	2009-05-21	Baskin Robbins 31	13.95%	UR-30
67	2011-05-16	Gastro Brno, Branch 1	8.54%	UC-50
68	2011-05-16	Gastro Brno, Branch 2	9.2%	UC-50
69	2011-05-16	Gastro Ostrava	7.98%	UR-30
70	2013-10-17	Jipteo Byeotjip pork belly	13.78%	UR-30
71	2003-08-20	LOTTERIA	8.9%	UC-100
72	2013-10-17	PARIS BAGUETTE	14.4%	UR-30

HOTELS

Page No.	Installation Date	Client	Saving Rate	Installation Model
73	2011-11-01	Formula 1 Brisbane Airport Hotel	16.2%	UC-100
75	2011-05-16	Gastro Ostrava Hotel	6.86%	UC-100
76	2009-12-02	HOTEL GRAN REY	14.85%	UC-100
77	2010-11-11	THE DENISON HOTEL	10.2%	UC-200

MARTS

Page No.	Installation Date	Client	Saving Rate	Installation Model
80	2009-06-18	Al-Hawi	5.5%	UC-100
81	2008-07-28	Carrefour	7.6%	U-1000 (2ea)
83	2010-02-19	FORA	9.67%	UC-50
86	2010-09-01	IKEA	13.7%	U-500 (2ea), U-1000
90	2010-08-17	Wol-got Fishery Market	8.0%	U-500

GOVERNMENT OFFICES

Page No.	Installation Date	Client	Saving Rate	Installation Model
91	2011-07-25	DEDE	13.35%	UR-30
93	2010-04-22	Livestock Sanitation Treatment Center	16.0%	U-500 (2ea)
94	2010-05-06	Public Community Center	6.3%	UC-200 (2ea), U-300
95	2010-04-30	Town Hall	10.2%	UC-50, UC-100

GENERAL FACILITIES

Page No.	Installation Date	Client	Saving Rate	Installation Model
96	2011-11-03	Carstens MC	12.07%	UR-30
97	2010-05-13	Colegio Brains	12.5%	U-300
105	2011-10-25	Deloitte	5.8%	UC-50
106	2010-12-27	Grupo Casablanca	8.5%	UC-50

GENERAL FACILITIES

Page No.	Installation Date	Client	Saving Rate	Installation Model
107	2008-02-22	JB Bank	14.89%	UC-50
108	2011-07-16	MAPFRE	8.6%	U-500
109	2010-06-10	Nong-hyup	7.7%	UC-100
110	2009-12-12	Seven Spots	12.3%	UC-50
111	2011-11-01	Vatana Phaisal Engineering	8.77%	UC-100, UC-200

OTHERS

Page No.	Installation Date	Client	Saving Rate	Installation Model
112	2014-04-18	Base Station	10.32%	UR-20
113	2011-11-18	Central Square	6.71%	UR-20
119	2013-07-24	Cleantopia	9.2%	UR-30
120	2014-11-22	FST	4.71%	U-300
121	2011-05-16	House	7.27%	UR-10
122	2010-03-17	House	10.8%	UR-5
123	2010-03-08	House	8.4%	UR-5
124	2009-06-17	MITERA	11.16%	U-500
126	2009-07-01	Solar House	8.47%	UR-5
128	2007-10-06	Vending Machine	11.7%	UM-1

GENERAL TESTS

Page No.	Installation Date	Client	Saving Rate	Installation Model
132	2014-04-18	Air Conditioner Test	5.73%	UR-10 (2ea)
133	2009-08-05	Air Conditioner Test	6.13%	UR-10 (4ea), UC-100
138	2010-04-01	Compressor Test	6.06%	UR-30
142	2011-03-13	Compressor Test	6.52%	UR-5
143	2012-07-27	Freezing Machine Test	5.34%	UC-100
147	2009-08-24	Induction Range Test	5.09%	UM-2
153	2009-07-29	Refrigerator Test	10.04%	UM-0.5
159	2009-07-05	Refrigerator Test	8.35%	UM-0.5
162	2010-05-07	Refrigerator Test	10.75%	UM-1
163	2015-05-19	Thermo-hygrostat Test	9.31%	UR-30
164	2011-05-01	University Motor Test	4.93%	UR-5
165	2011-05-01	University Compressor Test	6.36%	UR-10

02 Certification

Page No.	Installation Date	Client	Saving Rate	Installation Model
177	2009-09-21	DOE(Philippines) Test Report	3.67%	UM-1
178	2010-04-19	KILT(Korea) Test Report	6.47%	UM-1
183	2011-09-02	SGS(Korea) Test Report	6.75%	UC-50
189	2010-06-16	TGM(Austria) Test Report	7.47% 5.68%	UM-1, UR-5
198	2011-06-16	TUV(Austria) Test Report	5.00%	UR-7, UC-50

03 Letters

Page No.	Installation Date	Client	Saving Rate	Installation Model
209	2010-11-01	Big 4 Adventure Whitsunday Resort	11.00%	UC-200
210	2010-11-01	Big 4 Airlie Cove Resort	12.10%	UC-50
211	2010-02-01	Caltex Bucasia Service Station	10.00%	UC-100
212	2012-04-19	Caltex Waitara Service Station	11.9%	UC-50
213	2008-07-28	Carrefour	7.6%	U-1000 (2ea)
214	2010-10-01	Cooley's Hotel	10.00%	UC-50
215	2011-07-25	DEDE Government Office	13.35%	UR-30
216	2010-09-01	IKEA	13.7%	U-500 (2ea), U-1000
218	2008-04-01	Merck S.A	10.2%	U-500
219	2011-09-30	Sydney Park Hotel	8.00%	UR-30
220	2010-11-11	THE DENISON HOTEL	10.2%	UC-200
221	2011-04-08	ZAGORI Water	12.75%	UC-200

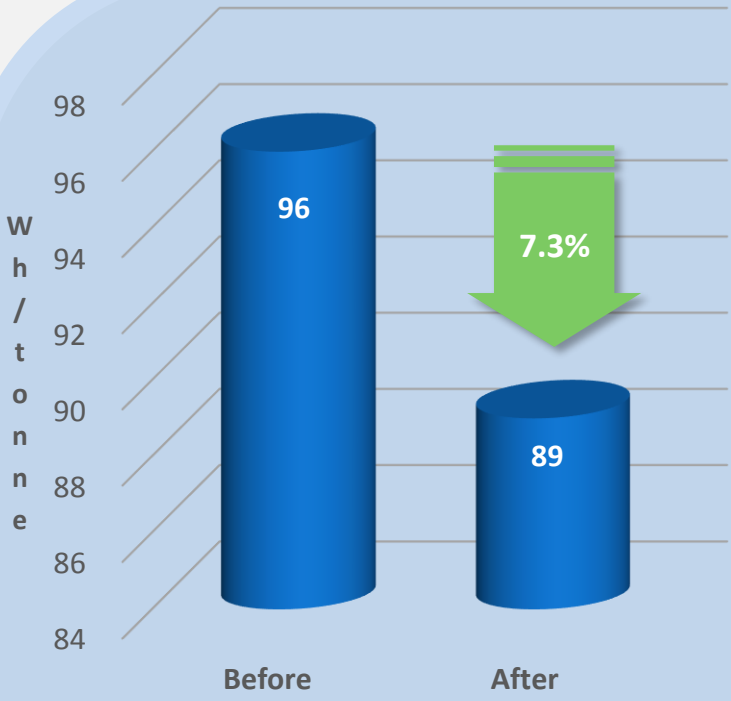
01 Installation Cases

Aggregate

Test Overview

Load	Inductive Load
Saving	7.3%
Installation Site	Factory
Country	U.K.
Installation Date	2011.06.25
Model	UC-100





Aggregate Industries manufactures and supplies a wide range of heavy building materials.

UC-100 was installed into the conveyor, and the average power consumption had been reduced from 96Wh/tonne to 89Wh/tonne.

As a result, it showed **7.3%** of saving rate.

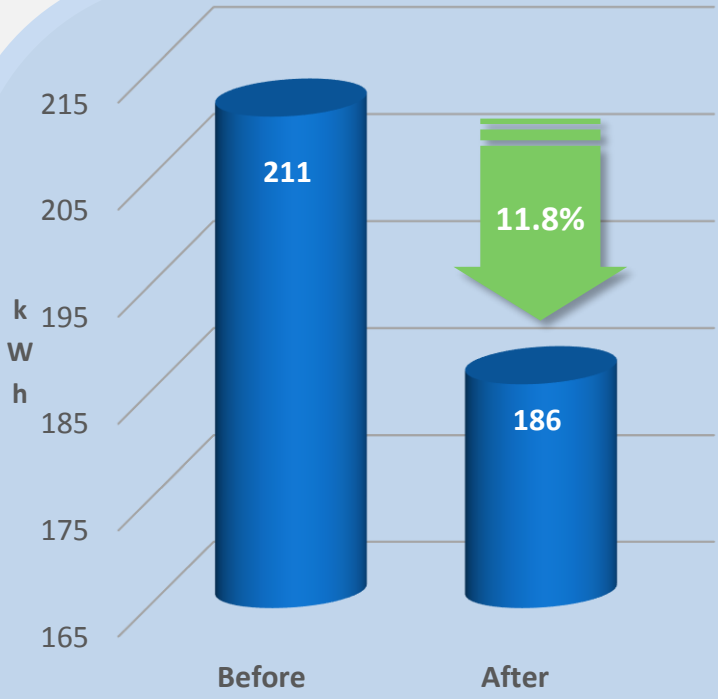


AmBev

Test Overview

Load	Complex Load
Saving	11.8%
Installation Site	Brewery
Country	Brazil
Installation Date	2011.10.17
Model	UR-30, UC-100, UC-200





AmBev is the biggest brewery in Latin America and the fifth in the world.

3 units of ULTRA were installed into the place, and the power consumption had been reduced from 211kWh to 186kWh.

As a result, it showed **11.8%** of saving rate.

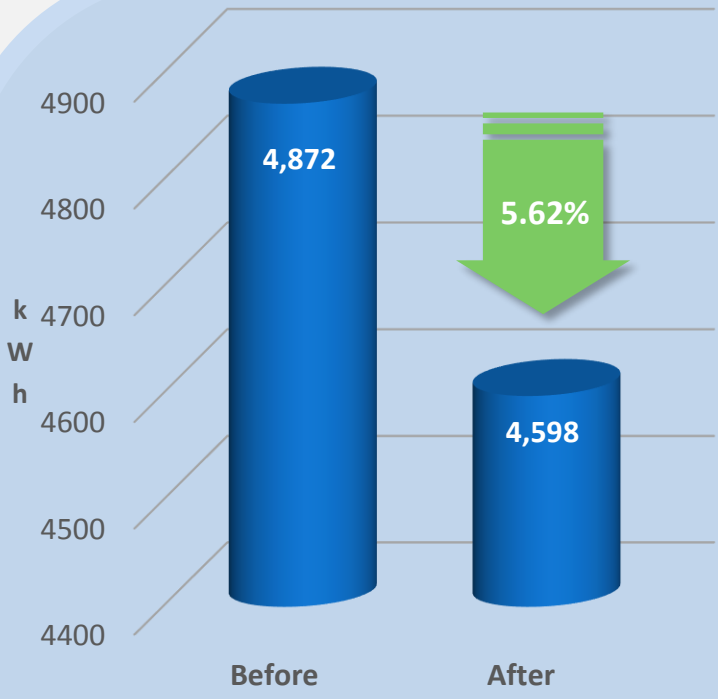


AMPAS

Test Overview

Load	Inductive Load
Saving	5.62%
Installation Site	Factory
Country	Thailand
Installation Date	2010.11.22
Model	UC-100





AMPAS is located in Thailand and Ultra was installed into a TOSHIBA Machine.

After installing at the load, the average power consumption had been reduced from 4,871.94kWh to 4,598.19kWh.

As a result, it showed **5.62%** of saving rate.

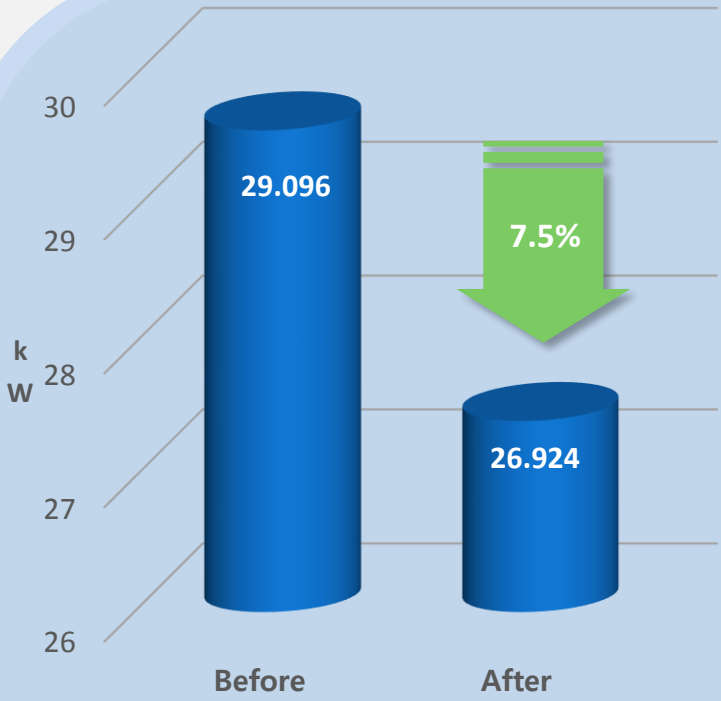


ANP

Test Overview

Load	Inductive Load
Saving	7.5%
Installation Site	Factory
Country	Korea
Installation Date	2014.08.06
Model	UC-200





ANP is PCB manufacturer which possesses compressors, Oxide PE-CVD, and motor.

UC-200 was installed at the Oxide PE-CVD and the instantaneous power had been reduced from 29.096kW to 26.924kW.

As a result,
It showed **7.5%** of saving rate.

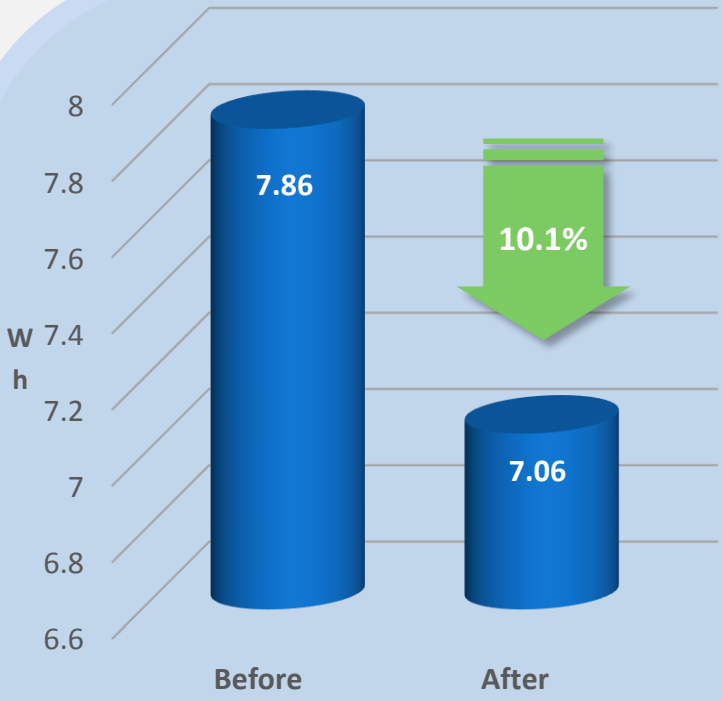


ANTON

Test Overview

Load	Inductive Load
Saving	10.1%
Installation Site	Factory
Country	U.K.
Installation Date	2011.08.08
Model	UC-100





ANTON Group is a leading UK print manufacturer.

UC-100 was installed into the Offset Press, and the average power consumption per impression had been reduced from 7.86Wh to 7.06Wh.

As a result,
it showed **10.1%** of saving rate.



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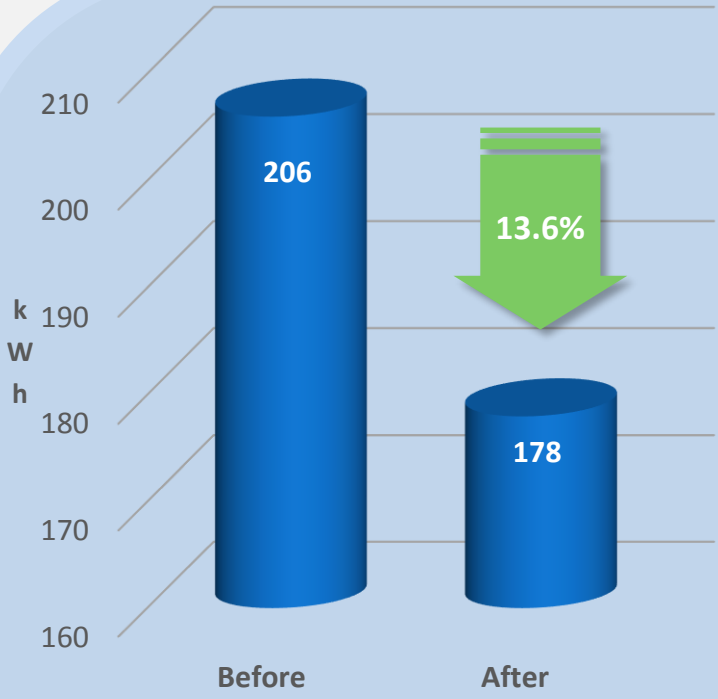
ULTRA KESECO

Catering Factory

Test Overview

Load	Complex Load
Saving	13.6%
Installation Site	Factory
Country	Greece
Installation Date	2008.10.24
Model	UR-30





The catering factory is located in Athens international airport, "EL. VENIZELOS."

UR-30 was installed at the place, and the monthly average power consumption had been reduced from 206kWh to 178kWh.

As a result, it showed **13.6%** of saving rate.



Test Report

Ⅰ. Information of Customer

1) Place info.	:	City-Athens, Country-Greece
2) Type of Customer	:	Athens International Airport "EL. VENIZELOS"
3) Name of Customer	:	NEWEST CATERING
4) Capacity of load	:	30 kva

Ⅱ. Installation Info.

1) Date of Installation	:	2008.10.24(13:30)
2) Installed ULTRA	:	UR-30(30Kva, 3P 4W) * 1

Ⅲ. Test Result

1) Before installation

a. Duration of collecting information	:	2008.09.27 ~ 2008.10.24	
b. Power consumption	:	5566	kWh
c. Average dialy power consumption	:	206.1	kWh/day

2) After installation

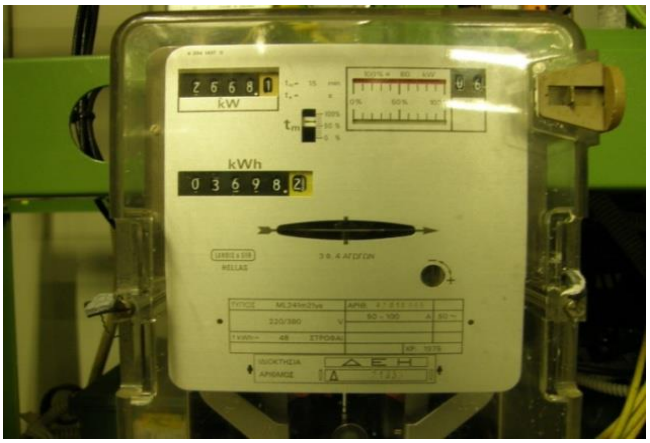
a. Duration of collecting information	:	2008.10.24 ~ 2008.12.12	
b. Power consumption	:	8725	kWh
c. Average dialy power consumption	:	178.061	kWh/day

V. Result

1) Power Saving Rate	:	**-13.62%**





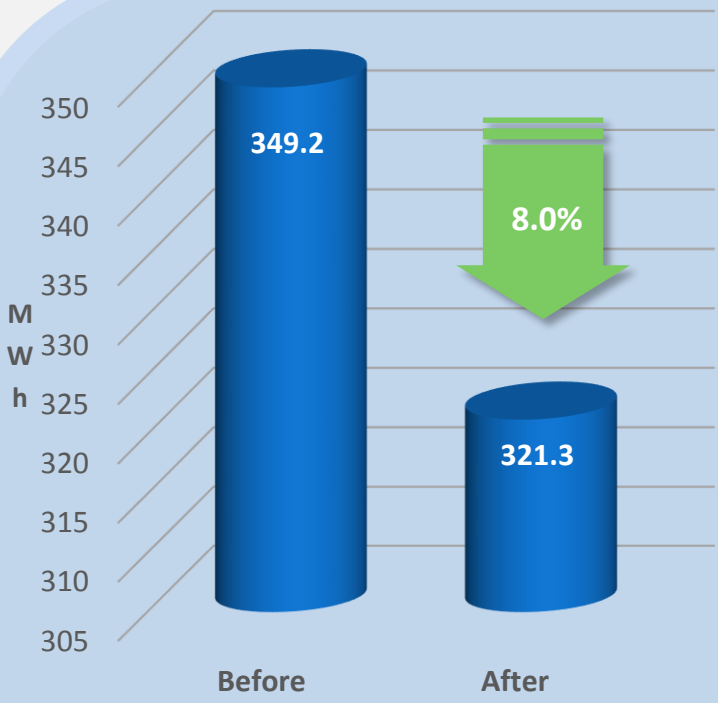


DENSO

Test Overview

Load	Inductive Load
Saving	8.0%
Installation Site	Factory
Country	Thailand
Installation Date	2012.10.01
Model	UC-100, UC-200, U-500





DENSO is a leading supplier of advanced automotive technology and components in Thailand.

ULTRA were installed at the manufacturing line, and the power consumption had been reduced from 349.2MWh to 321.3MWh.

As a result, it showed **8.0%** of saving rate.



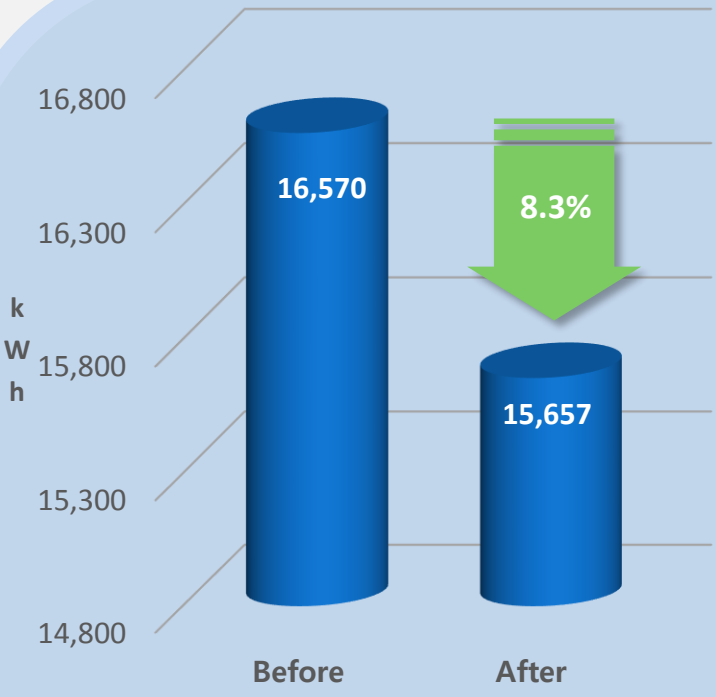
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DENTDOCTOR

Test Overview

Load	Complex Load
Saving	8.3%
Installation Site	Factory
Country	Korea
Installation Date	2013.03.20
Model	UC-50, UC-100





DENTDOCTOR is a representative auto repair shop which specializes in the vehicle restoration.

UC-100 and UC-50 were installed at the place, then monthly power consumption had been reduced from 16,570kWh to 15,657kWh.

As a result,
It showed **8.3%** of saving rate.



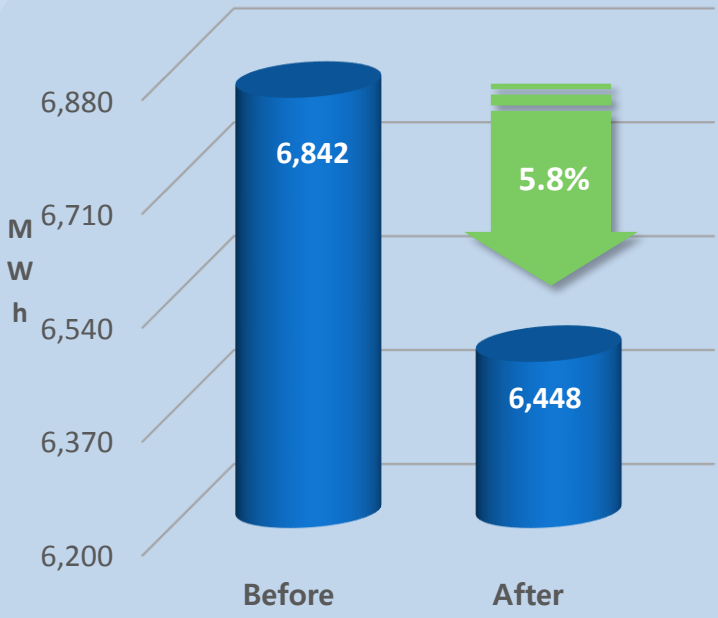
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EPRO Co.

Test Overview

Load	Complex Load
Saving	5.8%
Installation Site	Factory
Country	Korea
Installation Date	2010.04.29
Model	UC-50, UC-100 (2), UC-200 (2), U-300





EPRO is Semiconductor Manufacturing Company which has motor, compressor, and air conditioner.

ULTRA was installed at the place, and the power consumption had been reduced from 6,842MWh to 6,448MWh.

As a result,
It showed **5.8%** of saving rate.



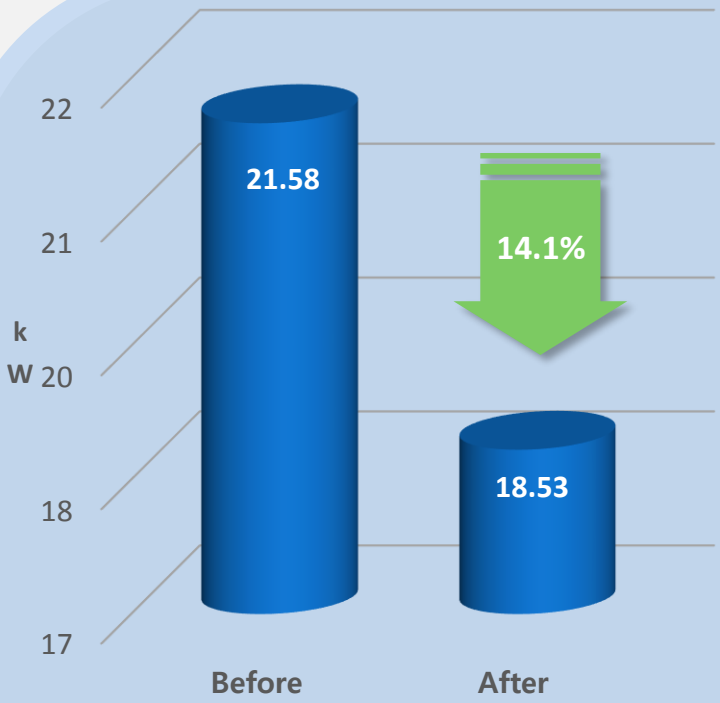
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FINE Tech

Test Overview

Load	Inductive Load
Saving	14.1%
Installation Site	Factory
Country	Korea
Installation Date	2014.09.22
Model	UC-200





FINE Tech is PCB manufacturer which has compressors, Oxide PE-CVD, and motor.

UC-200 was installed at the compressor, and instantaneous power had been reduced from 21.58kW to 18.53kW.

As a result, it showed **14.1%** of saving rate.

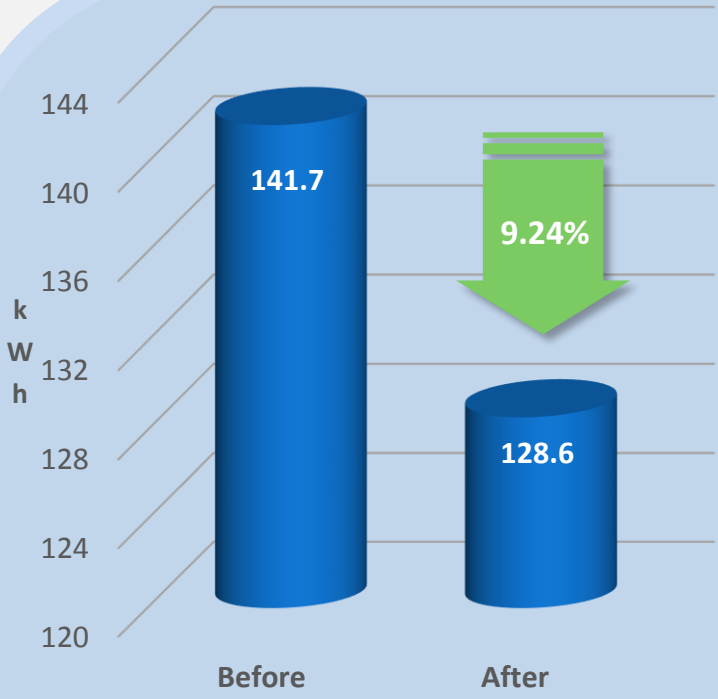


I.P. Manufacturing

Test Overview

Load	Inductive Load
Saving	9.24%
Installation Site	Factory
Country	Thailand
Installation Date	2010.12.03
Model	UC-50





This is a result of installing Ultra in the I.P. Manufacturing company in Thailand.

ULTRA was installed at the place, and the average power consumption had been reduced from 141.7kWh to 128.6kWh.

As a result, it showed **9.24%** of saving rate.

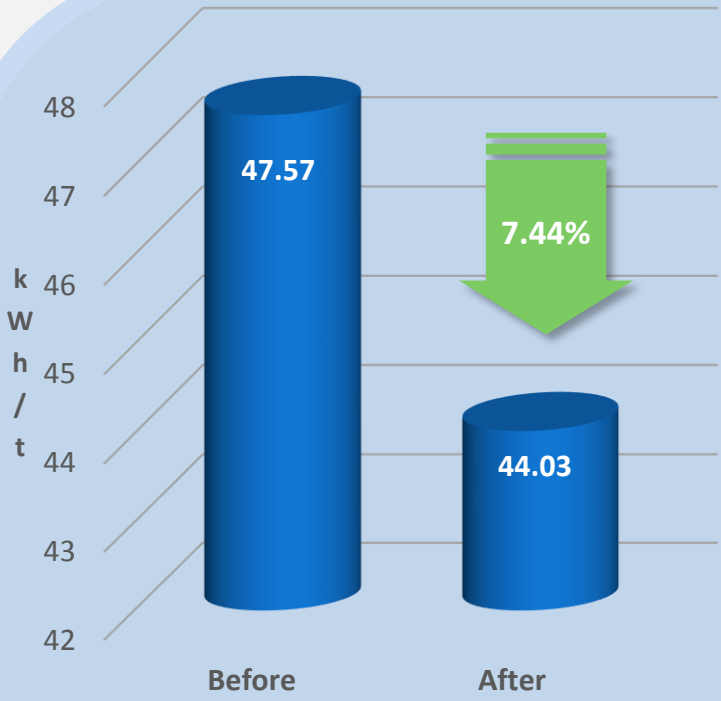


Kaunas Grain ltd.

Test Overview

Load	Complex Load
Saving	7.44%
Installation Site	Factory
Country	Lithuania
Installation Date	2012.04.01
Model	U-1000





This case is a result of installing Ultra product in the factory of Kaunas Grain ltd.

U-1000 was installed at the place, and the power consumption per ton had been reduced from 47.57kWh/t to 44.03kWh/t.

As a result, it showed **7.44%** of saving rate.



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A/s LT27 7044 0600 0681 7160, SEB www.energita.lt energita@energita.lt info@energita.lt

Energy-saving technology Ultra test report in AB Kaunas Grain ltd. factory

Report Date: 9/08/2012

Analysis of the situation:

"Kaunas Grain" Company name is associated with quality, tradition, a century of experience, economic power and modernity



Today, Kaunas Grain ltd., together with the Vilnius Poultry and AB Kaisiadorys Poultry is the most modern and economically strongest economic association Lithuania - the group of companies "KG Group".

KG Group structure:



Independently operated businesses are supplying products and services for different user groups. whose needs better understanding orientate the activities of the different customer segments. Company of Kaunas Grain have balanced scorecard, quality, and customer management systems. Kaunas City firm of Kaunas Grain has manufacturing units in Lithuania and abroad. Lithuanian and the company's name is proclaimed in international exhibitions in collaboration with multi-national companies, selling products to the farthest edges. Socially responsible company takes care of the welfare of employees and invests s latest technologies in order to reduce environmental pollution, reducing power consumption.

Being innovative company, KG Group is continuing to invest in new technologies to further reduce power consumption.

KG Group decided to install the latest technology to reduce electricity consumption by investing in energy saving technology ULTRA and testing it in one of his companies in Kaunas: Kaunas Grain Mill.

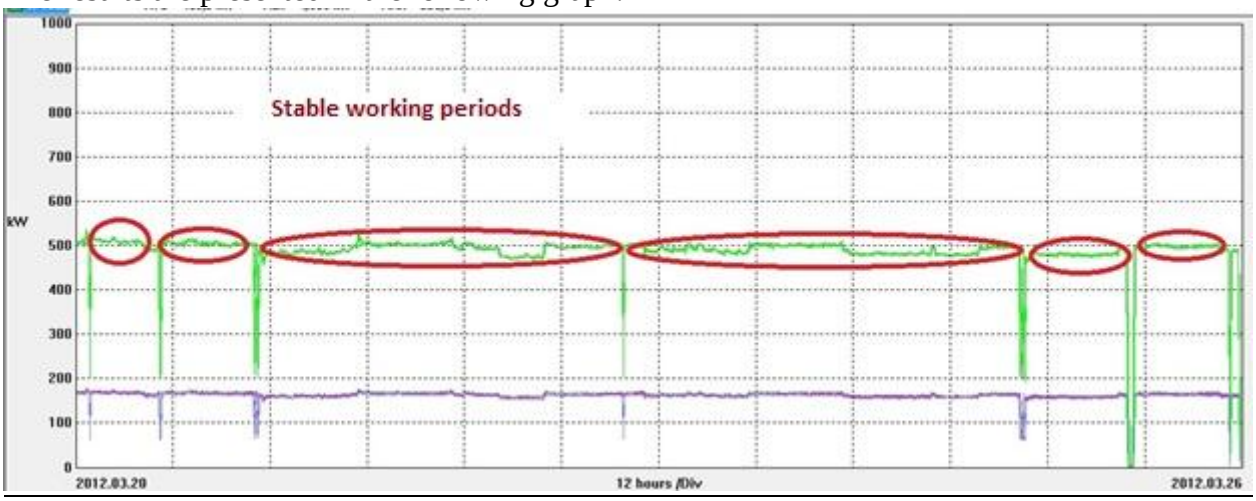


<u>Aim of the experiment:</u>
Rate Ultra device efficiency by measuring change of energy consumption.
Experimental procedure:
1.To measure change of kw (active power), which is directly related to the amount of electricity consumption.
2.To calculate the change of consumption of energy for production of one tone grain flour : kwh/t.

Experiment procedure

At Kaunas Grain ltd. Mill Ultra equipment was installed at the main transformer, model U-1000 for transformer of 1000 kva.
U-1000 was connected directly to the busbar from which energy is supplide to KG manufacturing workshops.

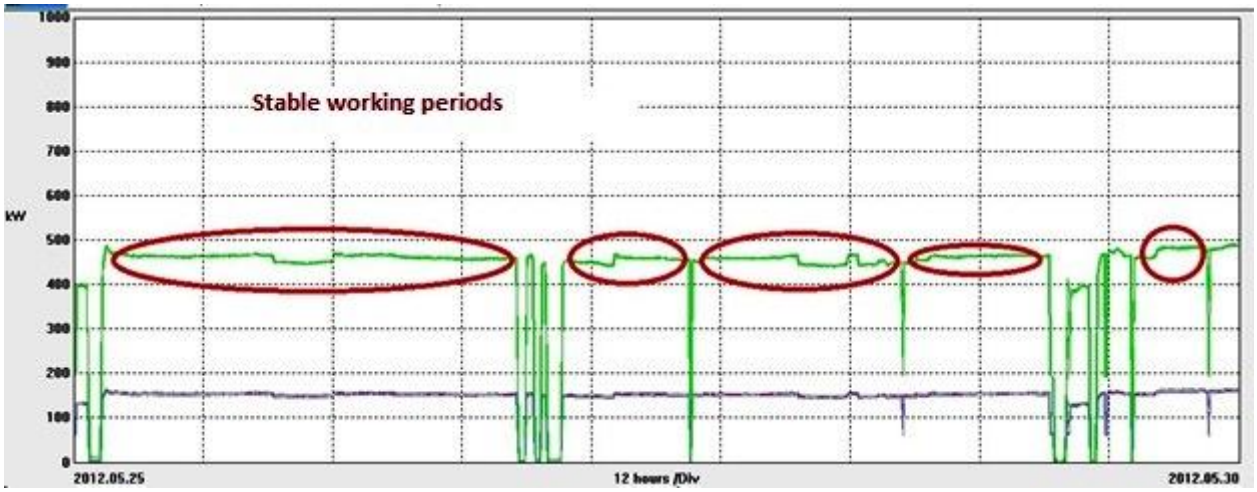
Achieved results:
1.Active power was recorded with power analycer Chauvin Arnoix before instalation of Ultra device.
The results are presented in the following graph:



The graph shows that under steady-state, the mill active power is around 500 kW

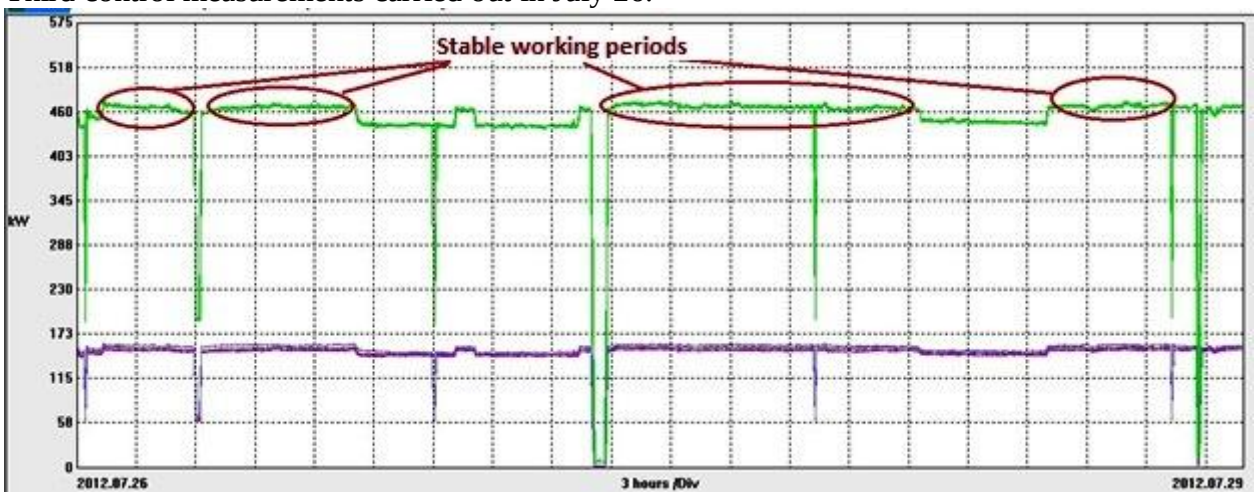
Ultra device installed in April. According technology requirements Ultra 1000 kVA device requires activation-adaptation period which is 4-8 weeks.
Further measurements were performed 2 times with a certain interval.

The first measurements after Ultra instalation were performed on May 25.



The graph shows that under steady-state, active power kw of the mill is reduced . It falls below 500 kW. The value of active power is given below in the table on the next page.

Third control measurements carried out in July 26.



The graph shows that under steady-state, can active power kw of the mill is reduced and fluctuates at 450 kW.

Measured parameter Summary:

Before Ultra Ultra	With Ultra May	With Ultra July
494 kw.	468 kw	448 kw

Table 1.Active power change.

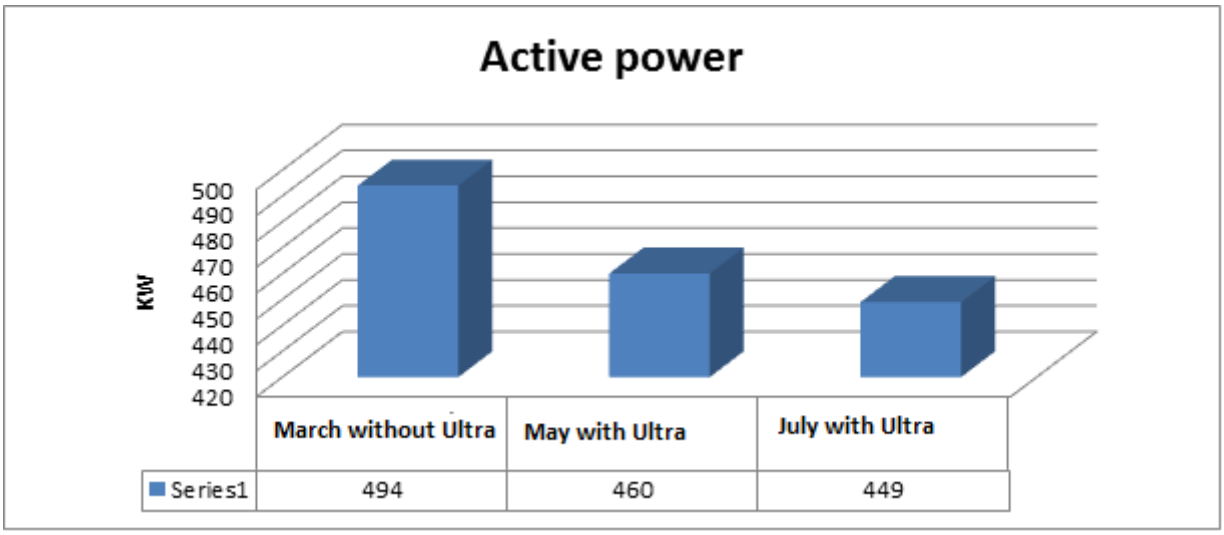


Diagram 1.Aktyvinės power changes graphical comparison

Conclusion: The measurement showed following results: final reduction in energy consumption using Ultra is **9.1%.**

2.Energy consumption for production of one tone of product analysis.

	Produced amout of grain flour t	Energy consumed inkwh	Amount of energy consumed kWh/t	Reduction of consumption %
March	1348,48	64145,00	47,57	
May	933,48	41644,00	44,61	6,6
July	1082,40	47656,00	44,03	8,0

Table 2. Electricity production cost of 1 ton of grain flour

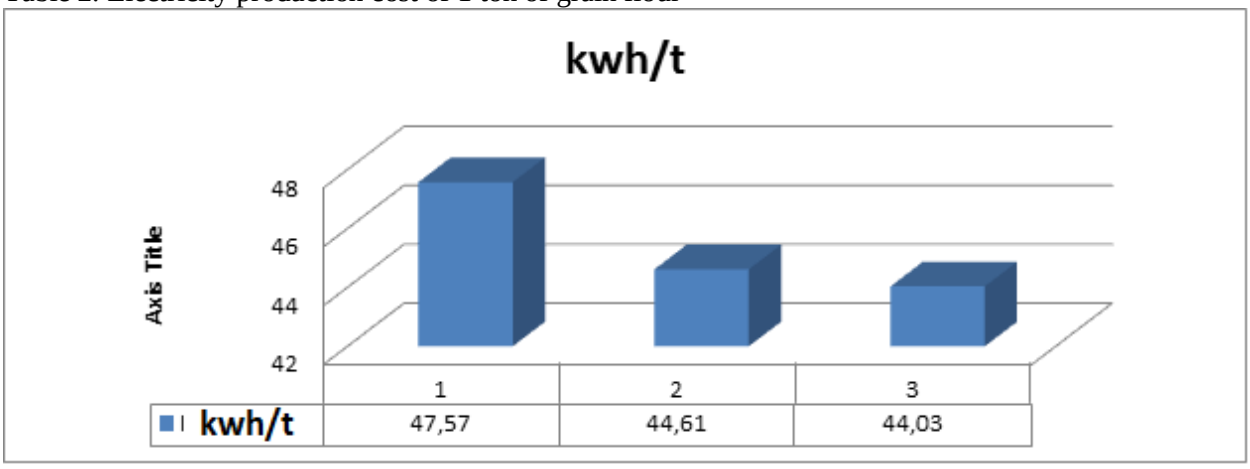


Diagram 2. Graphic electricity consumption for production of 1 ton of grain flour.

Conclusion:

Derivative figure calculations showed that in the final decrease using device Ultra is **8%.**

Project Manager Vaidotas Balčiūnas

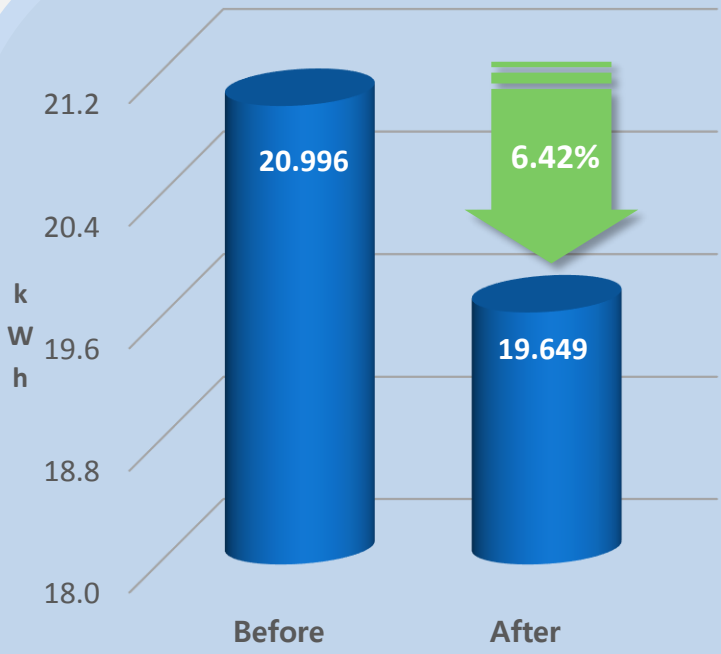


Nam-yang Industry

Test Overview

Load	Inductive Load
Saving	6.42%
Installation Site	Factory
Country	Korea
Installation Date	2014.03.12
Model	UC-200





This case is a result of installing ULTRA in Nam-yang Industry which has inductive loads.

UC-200 was installed at the inductive load and the power consumption had been reduced from 20.996kWh to 19.649kWh.

As a result,
It showed **6.42%** of saving rate.

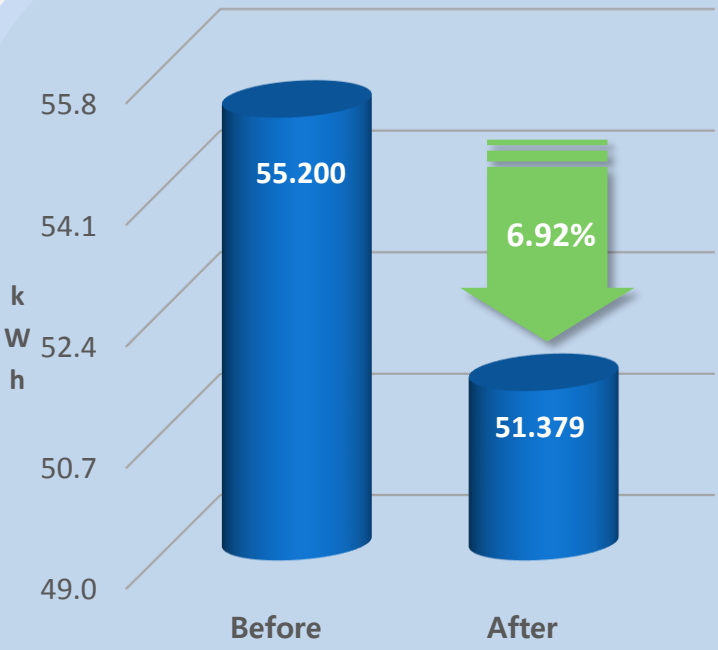


NH Food

Test Overview

Load	Inductive Load
Saving	6.92%
Installation Site	Factory
Country	Korea
Installation Date	2014.03.19
Model	UC-100





This place is NH Food which has the cooling / heating system.

UC-100 was installed at the conditioning equipment, and the average power consumption per an hour had been reduced from 55.200kWh to 51.379kWh.

As a result, it showed **6.92%** of saving rate.



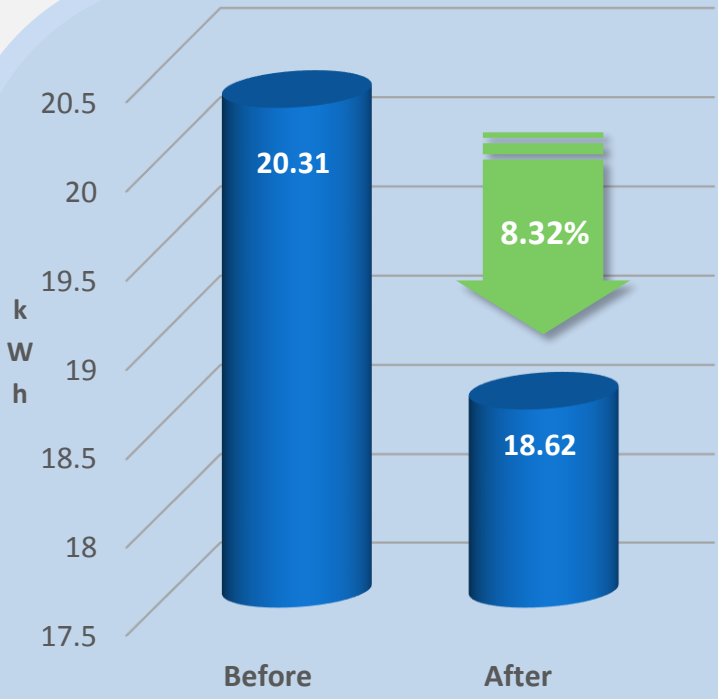
http://www.keseco.com | Office: +82-2-3409-1105 | Fax: +82-2-3409-2106
Namyoung Digital Tower 8F, Seongsuil-ro 84, Seongdong-gu, Seoul, South Korea

Oriel

Test Overview

Load	Inductive Load
Saving	8.32%
Installation Site	Factory
Country	U.K.
Installation Date	2011.11.15
Model	UC-50, UC-100 (3)





This case is the result of installing Ultra in the Oriel in U.K.

ULTRA were installed at the offset presses, and the average power consumption had been reduced from 20.31kWh/Operating Hour to 18.62kWh/Operating Hour.

As a result, it showed **8.32%** of saving rate.



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FOR IMMEDIATE RELEASE

16th August 2011

Oriel Printers confirm an energy saving of 8% using Keseco UK's Ultra technology

Oriel Printing Company Limited, the Hull based UV litho trade printers, has confirmed the company has maintained an 8% saving in their electrical consumption using Keseco UK's Ultra energy saving technology. The Ultra solution has reduced the electricity used during the company's printing processes, cutting production costs and energy bills. The Company expects to save over £8,000 in the first year and anticipate the system will pay for itself in less than 2 years.

The savings follow the installation in December 2011 of three Ultra UC100 models and one Ultra UC50 model at the company's printing plant on two 7 colour Heidelberg Speedmaster CD102 offset presses. An initial case study showed a saving of 8%, which has now been maintained for over eight months. The savings will contribute to a significant reduction in the company's carbon footprint, ensuring Oriel improves the company's environmental profile.

Keseco UK's Managing Director Paul Gibbon said:

"We've been working with Oriel for more than 9 months, with a focus on proving the level of achievable savings that Ultra can deliver.

"We're delighted that Oriel has been able to verify savings of more than 8 per cent; this is a clear demonstration of the commercial benefits delivered by the technology.

"I am pleased that Keseco UK has been able to demonstrate the levels of savings our technology can deliver; this is the first of many successes we are expecting to see in the Printing Industry over the coming months."

Oriel's Managing Director Richard Simms said:

"We have been impressed with the evidence-based approach adopted by Keseco UK and the savings generated by the Ultra technology. By working closely with us, Keseco UK has provided us with the opportunity to fully assess the technology's capabilities for ourselves.

"We are very happy with the level of savings that we have achieved. Carbon reduction and energy savings are of increasing importance for printing companies, and we hope that industry will benefit from the wider use of Ultra."

Case Study Notes

On 15th November 2011, 3 x Ultra model UC100s and 1 x Ultra model UC50 were installed at the company's printing plant on two Heidelberg Speedmaster CD102 offset presses. For the purposes of accurate comparison and measurement the pilot compared the average operating kWh consumption over a five month period pre-installation, with the same five month period post-installation. During the 5 month period prior to installation the average consumption was 20.31kWh/Operating Hour; during the 5 month period post-installation the average consumption was reduced to 18.62kWh/Operating Hour. Ultra delivered an average 8.33% reduction in kWh consumption per operating hour. Based on the operation of the two presses the savings produce a potential annual saving of £8,025 an anticipated Return on Investment of 21 months and an annual carbon reduction of 43,722 kilogrammes. Following the successful pilot the company are considering rolling-out the Ultra solution to other areas of the company's production facility.

For further information please contact Ed Cowdery on 07900 241854 or email ed@keseco.co.uk

Keseco UK Limited

Keseco UK is a specialist company supplying energy saving technology to the UK and Irish Markets. The Company has developed a unique approach to reducing energy consumption and driving down energy costs. Keseco UK combines their Ultra energy saving technology with state of the art energy management techniques and services. The ULTRA solution can be used by any size or type of business to reduce energy costs by as much as 10-15 per cent. There are over 7,000 installations of the ULTRA solution worldwide that have saved businesses in excess of £25 million. The ULTRA solution can be installed alongside any existing energy saving technology to substantially increase the current level of savings.

Oriel Printing Company Limited

Established in 1978, Oriel Printing Company Limited, are fine quality sheet fed litho and digital printers, based in Hull. The Company have a sheet fed litho UV print division and a full service general commercial print division. Niche UV litho printing is Oriel's strength and typical materials printed include polypropylene, PET, PVC, Clings, self adhesive vinyl, HIP, foil paper & boards, synthetic paper, boxboard, fluted board and more. The installation of a new Heidelberg CX102 7 colour press is due 4th September 2012 and will extend Oriel's trade printing capabilities.

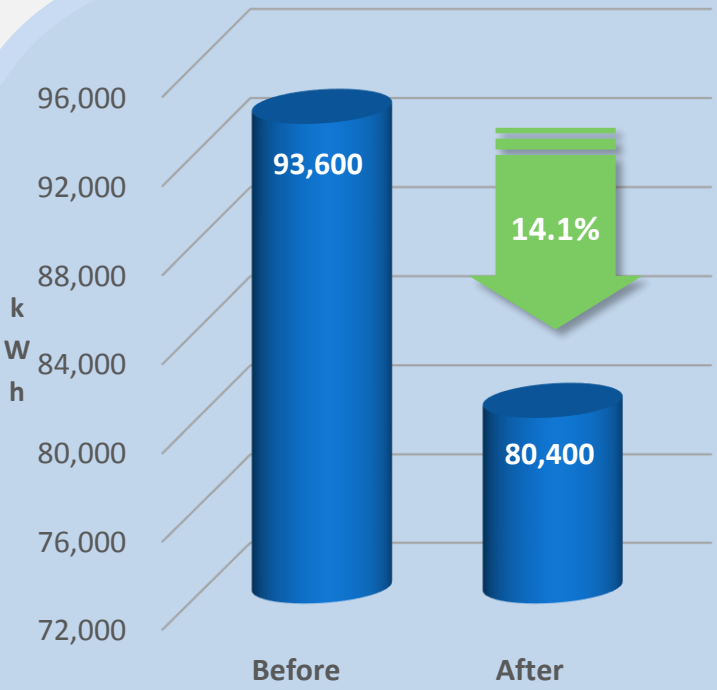
Resources: www.orielprinting.co.uk

Spanopoulos

Test Overview

Load	Complex Load
Saving	14.1%
Installation Site	Shipyard
Country	Greece
Installation Date	2009.03.06
Model	UR-20, UR-30, UC-50 (4), U-300





Spanopoulos Group has provided an excellent service to people who use the shipyard.

ULTRA was installed at the place, and a daily average power consumption had been reduced from 93,600kWh to 80,400kWh.

As a result, it showed **14.1%** of saving rate.



TEST REPORT

I. Information of Customer

1) Place info.	: City - Salamina, Country - Greece
2) Type of Customer	: New Greek Shipyard
3) Name of Customer	: Spanopoulos Bros Company - http://www.spanopoulos-group.com/

II. Installation Info.

1) Date of Installation	: 2009, Mar 6th
2) Total installation of ULTRA	: 550 kva
	- U-300 * 1, UC-50 * 4, UR-30 * 1, UR-20 * 1

III. Test Result

	month	period	days	KWH	KWH / day	Change
Active power	Mar-09	02/03 – 02/04	30	93600	3120	
	Apr-09	02/04 – 02 /05	30	80400	2680	440
						14,10%

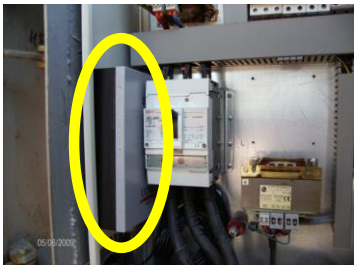
	month	period	days	KWH	KWH / day	Change
Reactive power	Mar-09	02/03 – 02/04	30	32400	1080	
	Apr-09	02/04 – 02 /05	30	25200	840	240
						22,22%

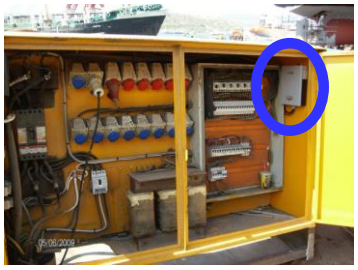
V. Power Saving Rate

1) Active Power	-14.10%
2) Reactive Power	-22.22%







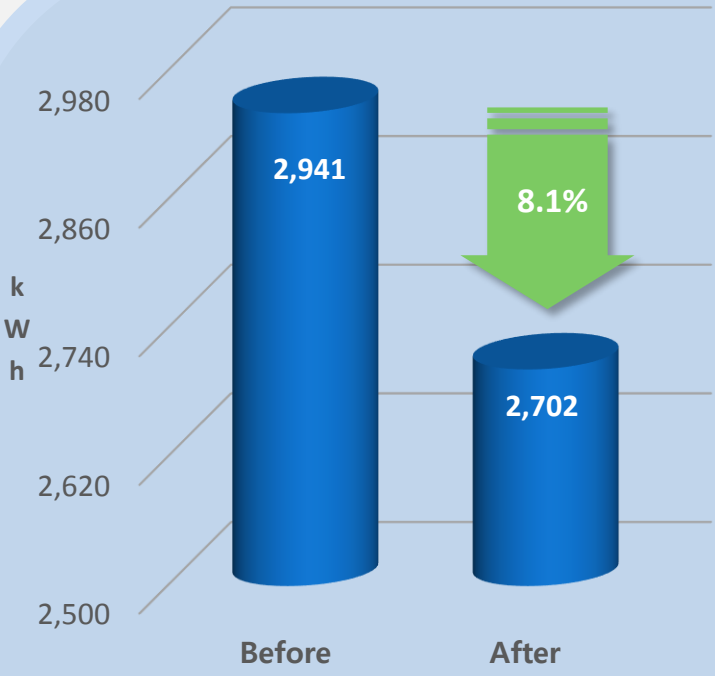



Sung-Ho Polytech

Test Overview

Load	Inductive Load
Saving	8.1%
Installation Site	Factory
Country	Korea
Installation Date	2013.06.21
Model	UC-200





Sung-Ho Polytech is a compound & plastic manufacturer which possesses motors.

UC-200 was installed at the place, then monthly power consumption had been reduced from 2,941kWh to 2,702kWh.

As a result,
It showed **8.1%** of saving rate.



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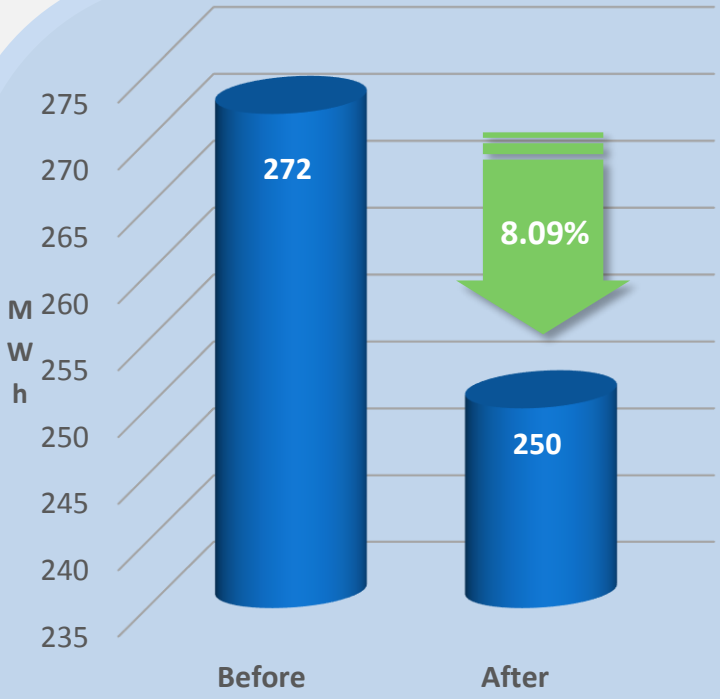
ULTRA KESECO

TNS

Test Overview

Load	Complex Load
Saving	8.09%
Installation Site	Factory
Country	Thailand
Installation Date	2012.05.01
Model	U-700





TNS was established in 1987 by Nippon Steel Corporation.

U-700 was installed at the main building and engineering shop, and the average power consumption had been reduced from 272MWh to 250MWh.

As a result,
it showed **8.09%** of saving rate.



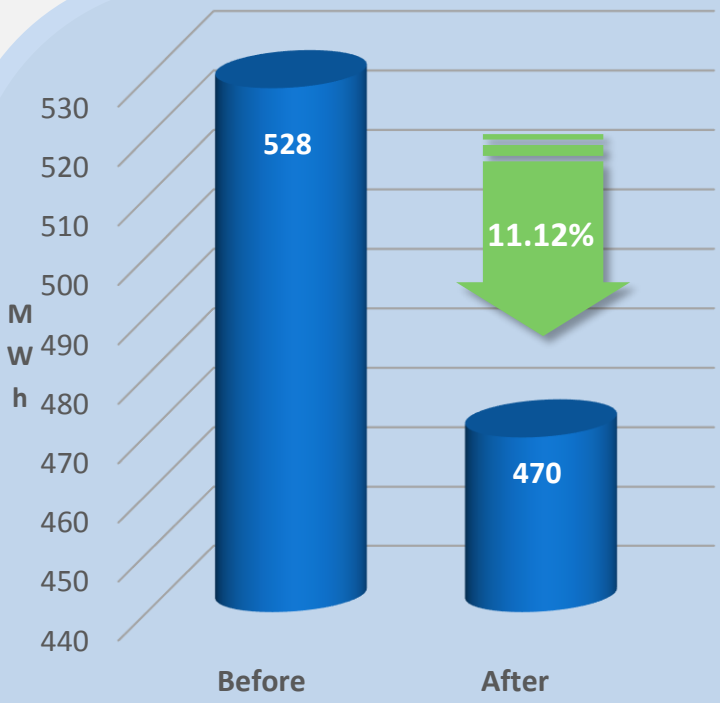
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TNS

Test Overview

Load	Complex Load
Saving	11.12%
Installation Site	Factory
Country	Thailand
Installation Date	2012.05.28
Model	UC-100 (4), U-300





TNS is a famous company for steel industry in Thailand.

ULTRA were installed in Amara Yard, and the average power consumption had been reduced from 528.254MWh to 469.534 MWh.

As a result,
it showed **11.12%** of saving rate.

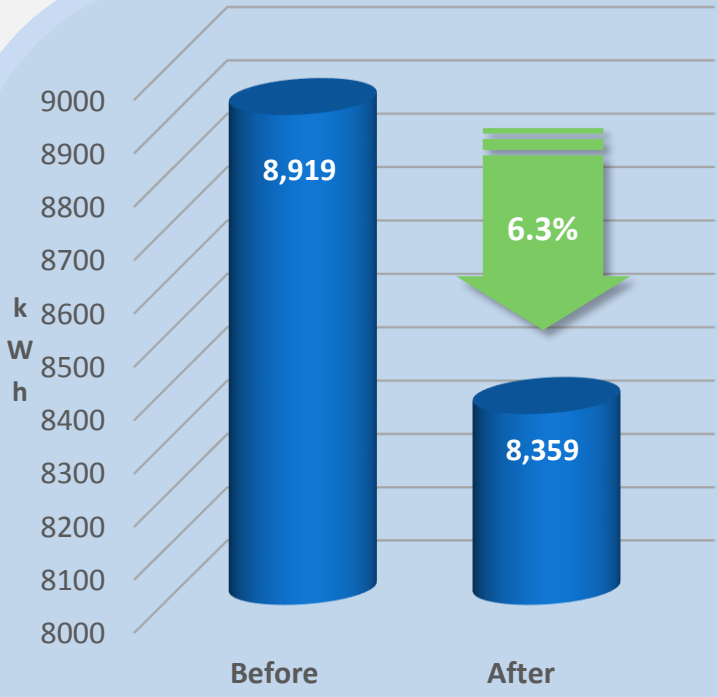


UNISON

Test Overview

Load	Inductive Load
Saving	6.3%
Installation Site	Factory
Country	Thailand
Installation Date	2012.08.01
Model	UC-50 (4), UC-100 (5), U-500





UNISON Laboratories Co., Ltd. is a manufacturer of pharmaceutical products.

ULTRA were installed at the chiller system, and the average power consumption had been reduced from 8,919kWh to 8,359kWh.

As a result, it showed **6.3%** of saving rate.



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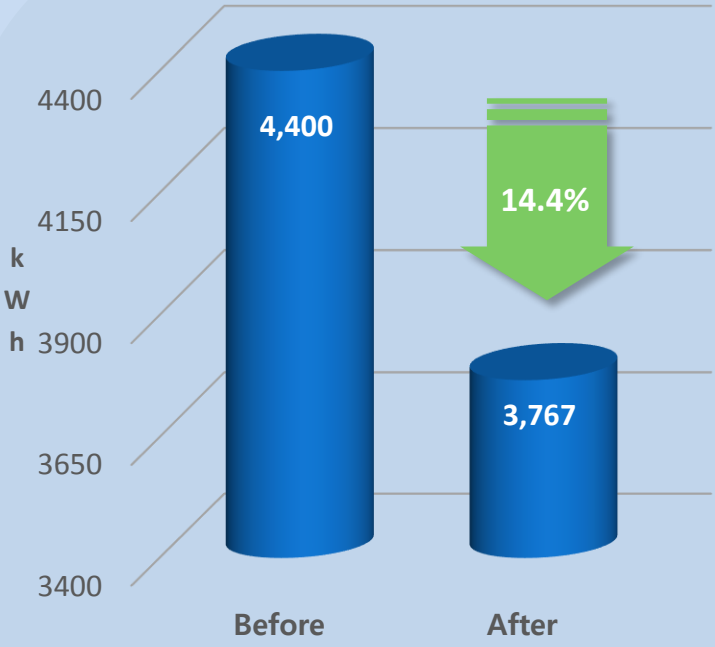
ULTRA KESECO

Woo Jung Jung Mil

Test Overview

Load	Complex Load
Saving	14.4%
Installation Site	Factory
Country	Korea
Installation Date	2013.11.26
Model	U-500





This place is a manufacturer that makes a specialty of machining and pressing.

U-500 was installed at the place, and a monthly average power consumption had been reduced from 4,400kWh to 3,767kWh.

As a result,
It showed **14.4%** of saving rate.

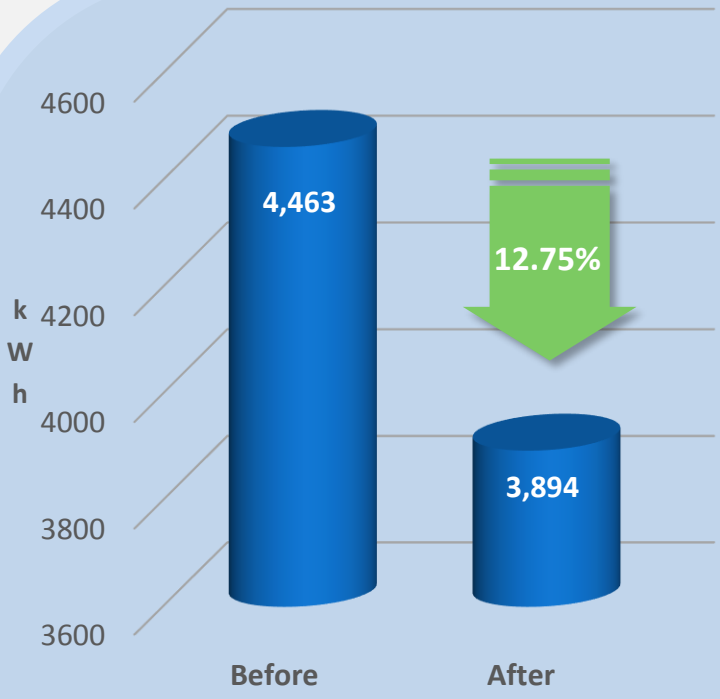


ZAGORI Water

Test Overview

Load	Inductive Load
Saving	12.75%
Installation Site	Factory
Country	Greece
Installation Date	2011.04.08
Model	UC-200





ZAGORI water is officially recognized from the European Union as Natural Mineral Water.

UC-200 was installed at the air compressor, and the power consumption had been reduced from 4,463kWh to 3,894kWh.

As a result,
it showed **12.75%** of saving rate.



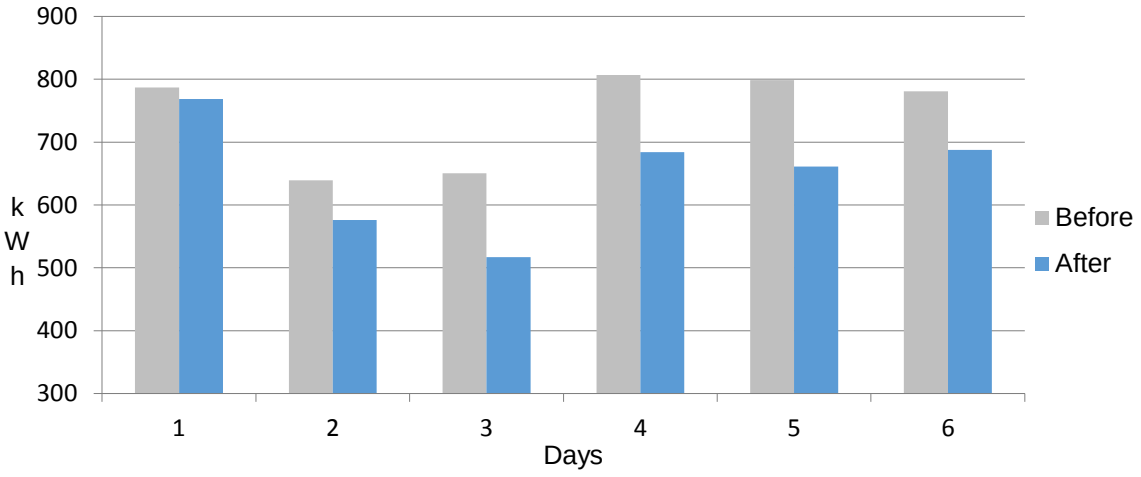
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< ZAGORI Water >

During the test period of 6 days, the department of air compressor in Zagori operated 8.3 hours per a day without any interruption. ULTRA took a few weeks for adaptation period, and a great reduction came out in the 1st week. UC-200 was installed in the air compressor of water bottling factory ZAGORI. Metrel Power Q4 was used for measurement.

Days	Hours	Before INSTALLATION OF ULTRA				
		kW	kWh	V	A	PF
1	8.3	94.45	787.05	397.85	508.32	0.79
2	8.3	76.7	639.14	398.33	448.96	0.69
3	8.3	78.07	650.56	398.01	451.94	0.7
4	8.3	96.8	806.63	395.45	515.88	0.81
5	8.3	95.86	798.8	398.37	512.07	0.8
6	8.3	93.7	780.8	398.25	503.96	0.79
average		89.26	**4462.99**	397.71	490.19	0.76
Days	Hours	After INSTALLATION OF ULTRA				
		kW	kWh	V	A	PF
1	8.3	92.21	768.39	399.59	500.51	0.78
2	8.3	69.15	576.23	399.96	427.16	0.66
3	8.3	62.01	516.73	401.61	399.52	0.61
4	8.3	82.06	683.81	400.64	467.8	0.72
5	8.3	79.36	661.31	397.72	457.24	0.71
6	8.3	82.5	687.47	400.06	468.43	0.72
average		77.88	**3893.93**	399.93	453.44	0.7

Average Energy Saving Rate = (4462.99 - 3893.93) / 4462.99 * 100 = **12.75 %**



11 Ιουνίου 2011

ΖΑΓΟΡΙ
φυσικό μεταλλικό νερό

ΧΗΤΟΣ Α.Β.Ε.Ε.
12° ΧΙΛ. ΙΩΑΝΝΙΝΩΝ ΚΟΝΙΤΣΑΣ
ΙΩΑΝΝΙΝΑ
Τηλ.: 26510 62781

ΒΕΒΑΙΩΣΗ

Με την παρούσα βεβαιώνουμε ότι η εταιρία **Hellas Energy (Δ. ΜΥΤΙΛΗΝΕΛΗΣ ΗΛΕΚΤΡΟΝΙΚΑ ΕΠΕ)**, εγκατέστησε την συσκευή εξοικονόμησης ηλεκτρικής ενέργειας **ULTRA**, τύπος **UC 200 3P 200 KVA**, σε υποπίνακα στο *Εργοστάσιο Εμφιάλωσης Νερού της Εταιρίας μας, στην* ***Κρανούλα Ιωαννίνων*** και πραγματοποίησε καταγραφή των φορτίων της εγκατάστασης και της κατανάλωσης σε kwh, για την περίοδο **8/4/2011 έως 5/5/2011**, από την οποία καταγραφή προκύπτει μείωση της κατανάλωσης ηλεκτρικής ενέργειας σε ποσοστό **12,75 %**.

Για την ΧΗΤΟΣ ΑΒΕΕ

ΜΑΝΤΖΟΥΚΑΣ ΠΑΥΛΟΣ
ΗΛΕΚΤΡΟΛΟΓΟΣ Τ. ΜΗΧΑΝΙΚΟΣ
ΤΕΧΝΙΚΟΣ ΠΡΟΪΣΤΑΜΕΝΟΣ
ΧΗΤΟΣ Α.Β.Ε.Ε.

Μαντζούκας Παύλος

Τεχνικός Διευθυντής

11th June 2011,

ZAGORI
CHITOS S.A.
12km IOANNINON –KONITSAS
IOANNINA
Tel. 26510 62781

Letter

With this letter, we would like to inform that HELLAS ENERGY (MYTILINELIS ELECTRONICS LTD) installed energy saving device ULTRA, UC 200, 3P 200 KVA, in sub-electric board in our water bottling factory in Kranoula Ioanninon, and measured our loads and consumption KWH for period 8/4/2011 until 5/5/2011. From these measurements resulting electricity energy saving rate 12,75 %.

Mantzoukas Paulos

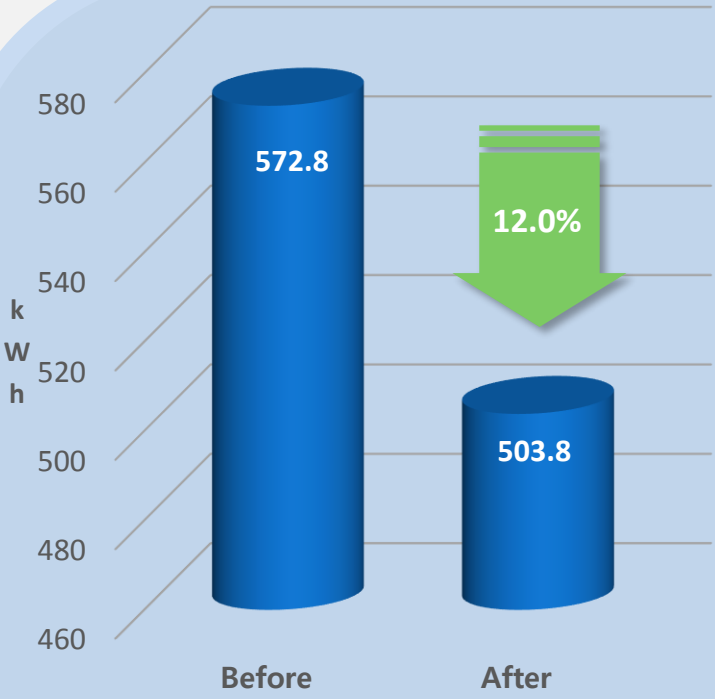
Technical Director

CALTEX

Test Overview

Load	Complex Load
Saving	12.0%
Installation Site	Gas Station
Country	Australia
Installation Date	2012.04.19
Model	UC-50





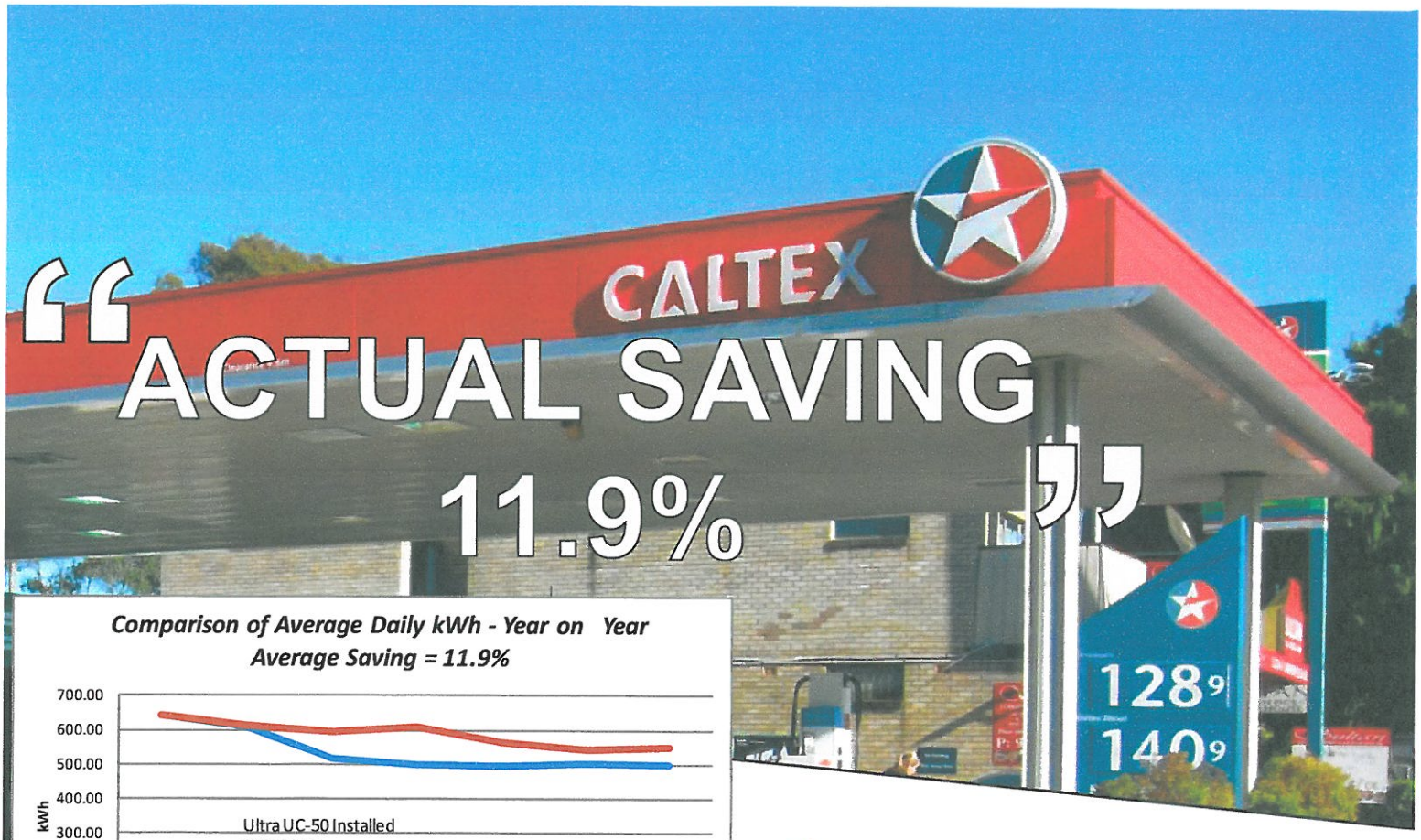
CALTEX located in Australia is a gas station that provides oil and gas to the customers.

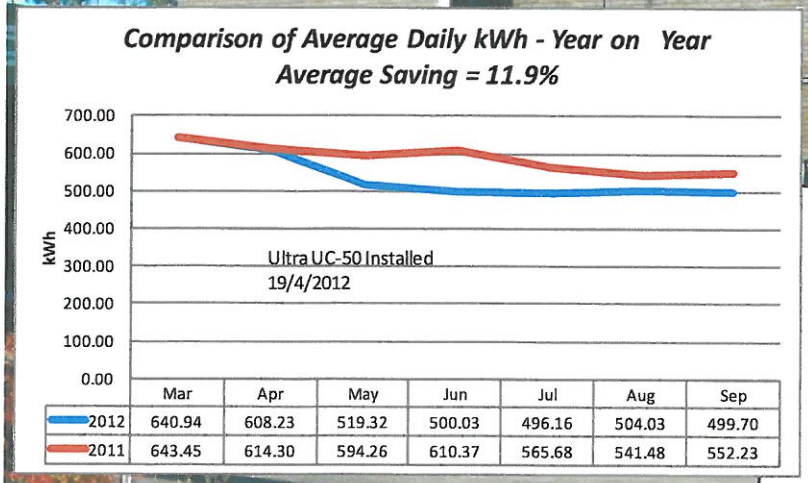
UC-50 was installed at the place, and the power consumption for five months had been reduced from 572.8kWh to 503.8kWh.

As a result, it showed **12.0%** of saving rate.



"ACTUAL SAVING 11.9%"





	Mar	Apr	May	Jun	Jul	Aug	Sep
2012	640.94	608.23	519.32	500.03	496.16	504.03	499.70
2011	643.45	614.30	594.26	610.37	565.68	541.48	552.23

March to September kWh comparison Year on Year

Month	2011	Ave Daily	2012	Ave Daily	% Change
Mar	19947	643.45	19869	640.94	0%
Apr	18429	614.30	18247	608.23	-1%
May	18422	594.26	16099	519.32	-13%
Jun	18311	610.37	15001	500.03	-18%
Jul	17536	565.68	15381	496.16	-12%
Aug	16786	541.48	15625	504.03	-7%
Sep	16567	552.23	14991	499.70	-10%
Average % change May - September					**-11.9%**

nadergroup

21 November 2012

To Whom It May Concern:

In early April 2012 I purchased an Ultra Energy device for Caltex WOW Waitara, which was installed on 19/4/2012.

The decision to purchase and invest in this technology was a commercial decision based on a guarantee provided by UEA that in the even that if I could not evaluate a result I would receive a refund.

The results are clearly demonstrated that the site has used 11.9% less KWh since the introduction of the Ultra over a 5 month period.

Whilst my energy bills have not actually decreased in $ terms this is because the price of energy has increased; so, had the Ultra not been installed my electricity bills would have been higher.

The Ultra has saved in excess of 11% energy consumption since install.

If you require any further information, please do not hesitate to contact me on 0418 859 329

Yours faithfully

Emile Nader (AAIQS. BBE. JP)
Director

THE STATS

kWh Saved (May-Sept)	10,525.00
Projected Annual kWh saving	25,929.75
Projected Annual $ saving	$ 4,408.06
Projected ROI (Months)	7
Projected CO2 Saved (Tonnes)	27.7

ULTRA ENERGY

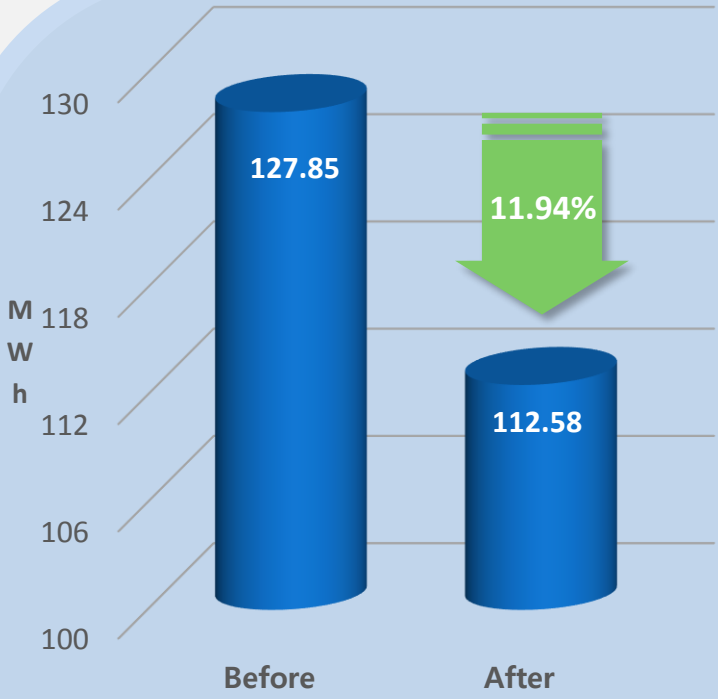
...Reshaping Power

CALTEX

Test Overview

Load	Complex Load
Saving	11.94%
Installation Site	Gas Station
Country	Australia
Installation Date	2010.10.01
Model	UC-100





CALTEX located in Australia is a gas station that provides oil and gas to customers.

UC-100 was installed at the place, and the power consumption had been reduced from 127.85MWh to 112.58MWh.

As a result,
it showed **11.94%** of saving rate.



ULTRA ENERGY

CASE STUDY

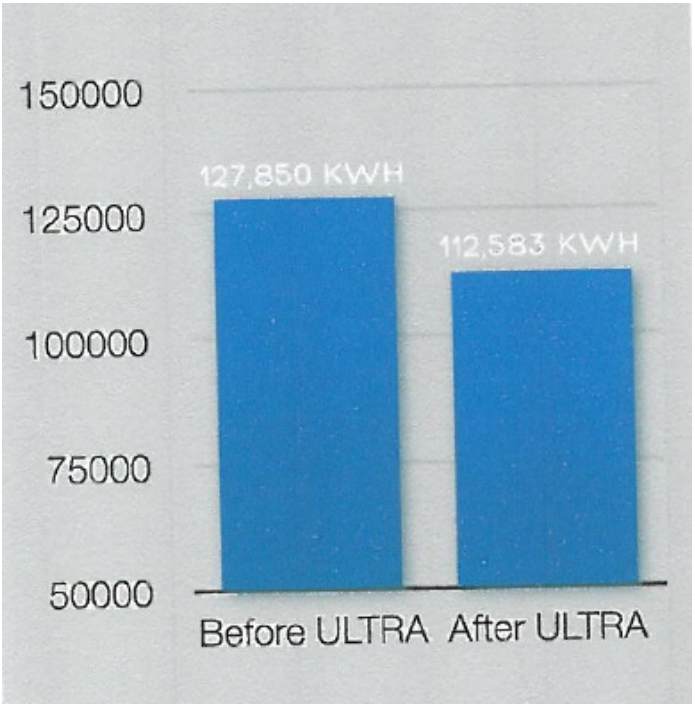
CALTEX CHELSEA HEIGHTS



REDUCTION IN POWER USED
11.94%

REAL POWER SAVING OVER 6 MONTHS
$1,403.84

PROJECTED POWER SAVING OVER 12 MONTHS
$2,807.68



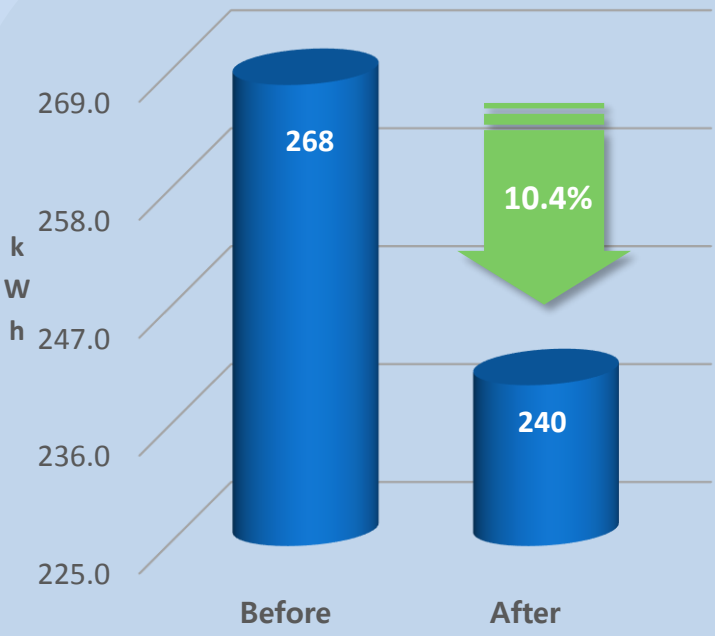
In October 2010 Mel and Sandra Owen installed an ULTRA current optimiser in their Caltex in Chelsea Heights, VIC. Their ULTRA unit gave them an 11.94% drop in power consumption over the next 6 months compared to the same period the previous year. This saved them $1,403.84 over the six months measured, or a projected $2,807.68 over 12 months.

EKO

Test Overview

Load	Complex Load
Saving	10.4%
Installation Site	Gas Station
Country	Cyprus
Installation Date	2011.11.01
Model	UR-10 (2), UC-50





EKO is active in the supply, transportation and marketing of liquid fuel, LPG to industrial customers.

ULTRA were installed at the place, and the average power consumption had been reduced from 268kWh to 240kWh.

As a result,
it showed **10.4%** of saving rate.

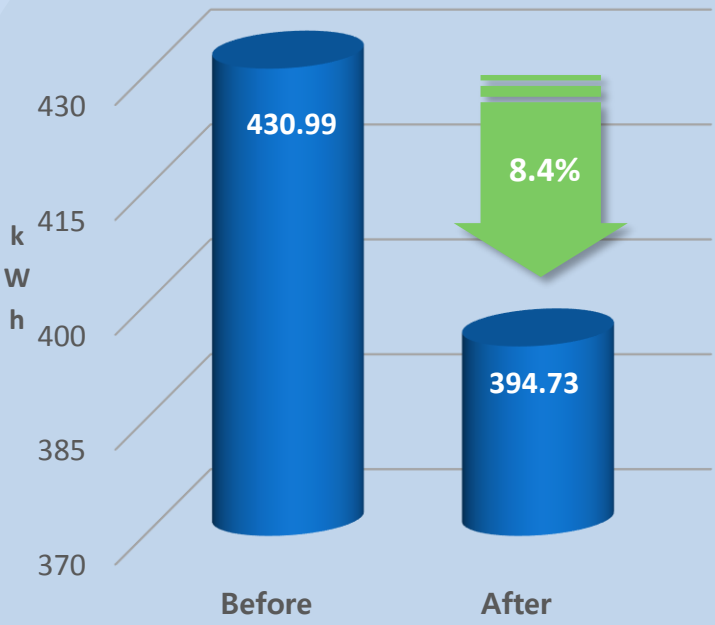


Shell

Test Overview

Load	Complex Load
Saving	8.4%
Installation Site	Gas Station
Country	Spain
Installation Date	2010.12.27
Model	UC-100





Shell located in Madrid, Spain is a leading global company in oil and gas industry.

UC-100 was installed at the place, and the average power consumption had been reduced from 430.99kWh to 394.73kWh.

As a result, it showed **8.4%** of saving rate.

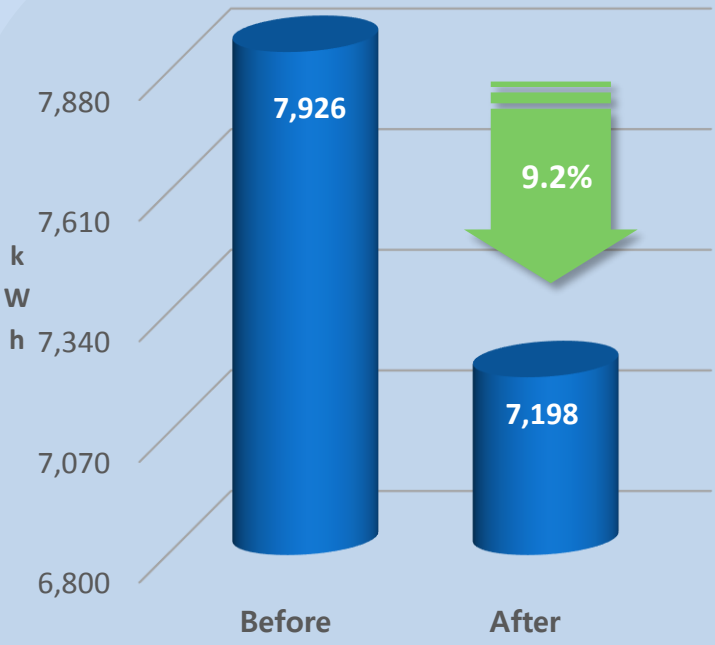


Won-il Energy Gas Station

Test Overview

Load	Complex Load
Saving	9.2%
Installation Site	Gas Station
Country	Korea
Installation Date	2014.04.16
Model	UC-100





This case is a result of installing ULTRA at the gas station named Won-il Energy.

UC-100 was installed at the gas station, and the average power consumption had been reduced from 7,926kWh to 7,198kWh.

As a result, it showed **9.2%** of saving rate.



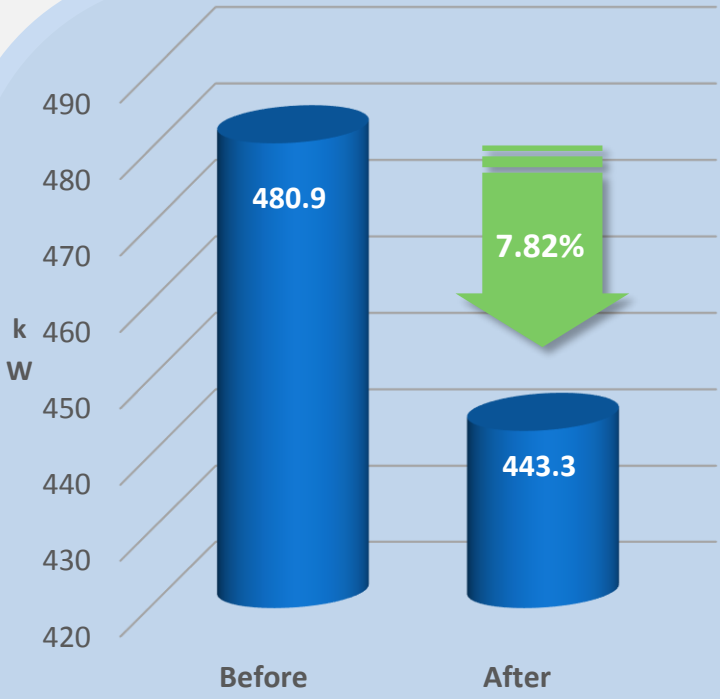
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COLDSTAR

Test Overview

Load	Inductive Load
Saving	7.82%
Installation Site	Cold Storage
Country	Denmark
Installation Date	2011.10.17
Model	U-300, U-500





COLDSTAR is a company for cold storage, which is located in Vejle, Denmark.

Ultra were installed at the cold storage, and the average instantaneous power had been reduced from 480.9kW to 443.3kW.

As a result, it showed **7.82%** of saving rate.



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www.enervision.dk

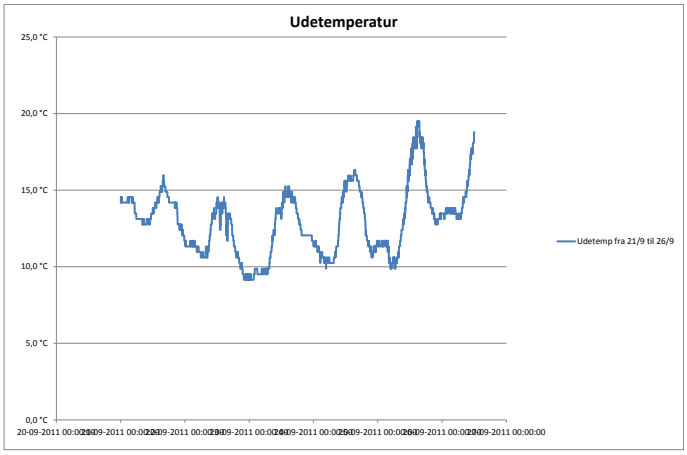
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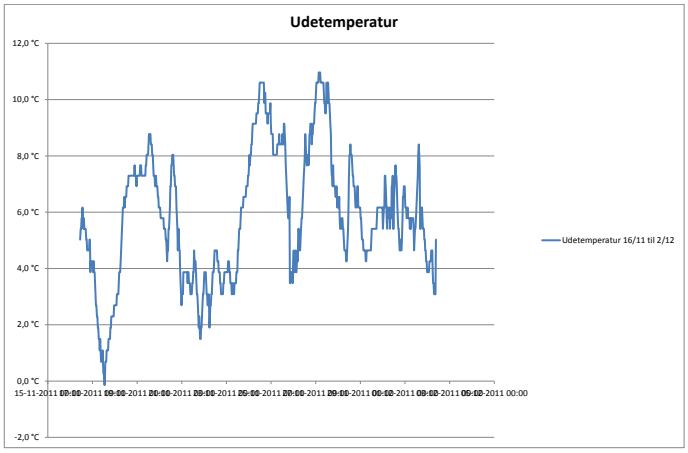
Ecometric
Pakhustorvet 8
6000 Kolding

Att.: Bo Kristensen

Test and measuring results of "ULTRA" at Colstar, Vejle

Outdoor temperature for the period





Introduction:

The measuring period is representative for the energy consumption at Cold Star.
The decrease of the outdoor temperature and the heat energy that is coming from the surroundings to the cold store has been deducted in the savings.
Flow of goods in and out of cold store has been indexed and seems as an average not to have any big influence.
If you study the measurements you are not able to find any significant tendency between flow of goods, opening of doors and outdoor temperature as deviations even out over the period.
There is a tendency of a bigger reduction in the reactive effect (Q kVar) in % than in the effect (P kW).
The test shows saving in energy consumption that can only be due to ULTRA.
The following months will show if the savings of energy consumption are constant compared to previous years.

The results have not been corrected for outdoor temperature, open doors, incoming goods, etc. They are factual measurements for the period

Week		Beginning Pallets	Supply Pallets	Departure Pallets	End Pallets	Index	Pre/ Adaptation/ Post	Average Energy Consumption	Average Outdoor Temp.	Decrease in Energy Consumption	Decrease in Energy/°C	
Uge		Primo	Tilgang	Afgang	Ultimo	Indeks		Middel energi-forbrug	Middel ude temp	Fald i Energifor brug	Fald i energi-forbrug/ ºC	
		Paller	Paller	Paller	Paller			kW	°C	%	kW/ ºC	
38,00		13.103,00	2.713,00	2.181,00	13.635,00	100,00	Før	480,91	12,90			
39,00		13.635,00	3.817,00	2.811,00	14.441,00	105,91	Før	496,95	9,70	-3,33		
40,00		14.641,00	2.260,00	2.412,00	14.489,00	106,26	Indkøring	478,43	9,70	0,52	0,16	
41,00		14.489,00	2.185,00	2.997,00	13.677,00	100,31	Indkøring	454,68	9,70	5,46	1,70	
42,00		13.677,00	2.479,00	1.757,00	14.399,00	105,60	Indkøring	455,61	9,70	5,26	1,64	
43,00		14.399,00	2.148,00	2.566,00	13.981,00	102,54	1. test	445,75	9,20	7,31	1,98	
44,00		13.981,00	2.139,00	2.909,00	13.219,00	96,95	1. test	458,87	9,20	4,58	1,24	
45,00		13.219,00	2.140,00	2.325,00	13.034,00	95,59	2. test	442,71	5,10	7,94	1,02	
46,00		13.034,00	2.331,00	2.111,00	13.124,00	96,25	3. test	436,10	4,60	9,32	1,12	
47,00		13.154,00	2.225,00	2.595,00	12.784,00	93,76	4. test	441,43	6,10	8,21	1,21	
48,00		12.784,00	2.394,00	2.361,00	12.817,00	94,00	4. test	438,00	5,70	8,92	1,24	
49,00												
50,00												
51,00												

The measuring result shows a reduced consumption from:

Conclusion on energy consumption after Transformer 4:

At the beginning of (INST P(kW) 480,9139 kW - Adaptation 480,91 kW

1. test week 43 - 445,75 kW – a decrease of 7,31%
1. test week 44 - 458,87 kW – a decrease of 5,94%
2. test week 45 – 442,71 kW – a decrease of 7,94%
3. test week 46 – 436,10 kW – a decrease of 9,32%
4. test week 47 – 441,43 kW – a decrease of 8,21%
5. test week 48 – 438,59 kW – a decrease of 8,80%

Biggest savings of energy (P kW)= (480,91 – 436,1) = 44,81kW. Correction for decrease of heat transmission through walls 7,2 kW at 5 °C

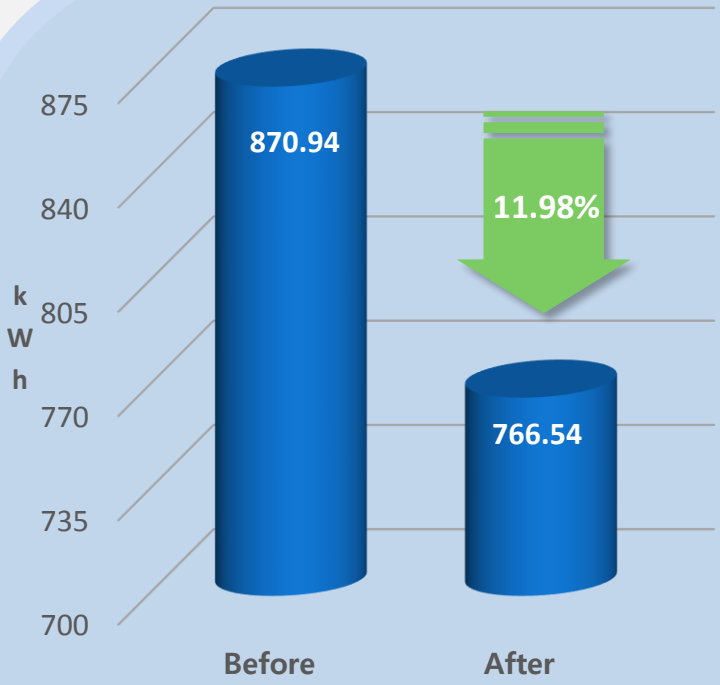
Total savings 37,61 kW, which corresponds to 7,82%

Ottogi Distribution Center

Test Overview

Load	Inductive Load
Saving	11.98%
Installation Site	Cold Storage
Country	Korea
Installation Date	2013.11.22
Model	U-500





This case is a result of installing ULTRA at the cold storage in Ottogi distribution center.

U-500 was installed at the place, and the average power consumption had been reduced from 870.94kWh to 766.54kWh.

As a result,
it showed **11.98%** of saving rate.



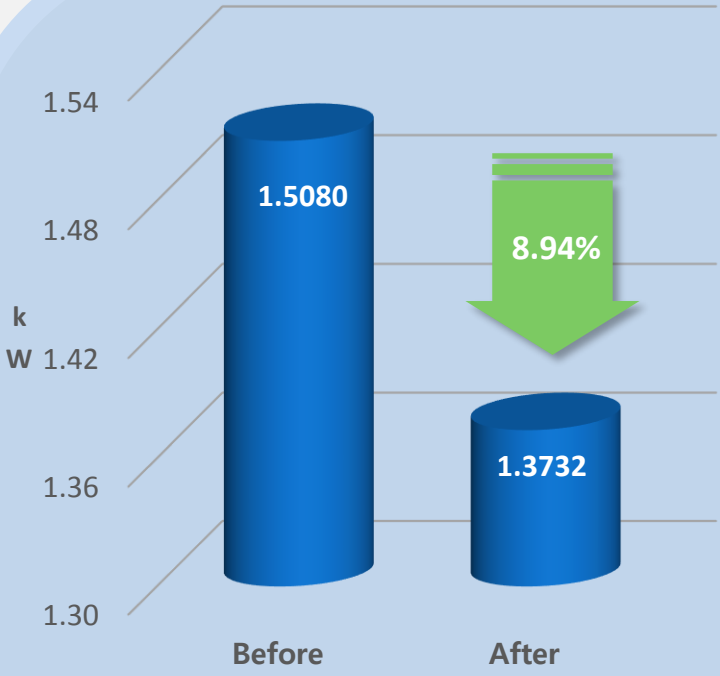
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PULMUONE

Test Overview

Load	Inductive Load
Saving	8.94%
Installation Site	Cold Storage
Country	Korea
Installation Date	2014.05.19
Model	UR-20





This case is a result of installing ULTRA at the cold storage of PULMUONE.

UR-20 was installed at the load, and the average instantaneous power had been reduced from 1.5080kW to 1.3732kW.

As a result,
it showed **8.94%** of saving rate.

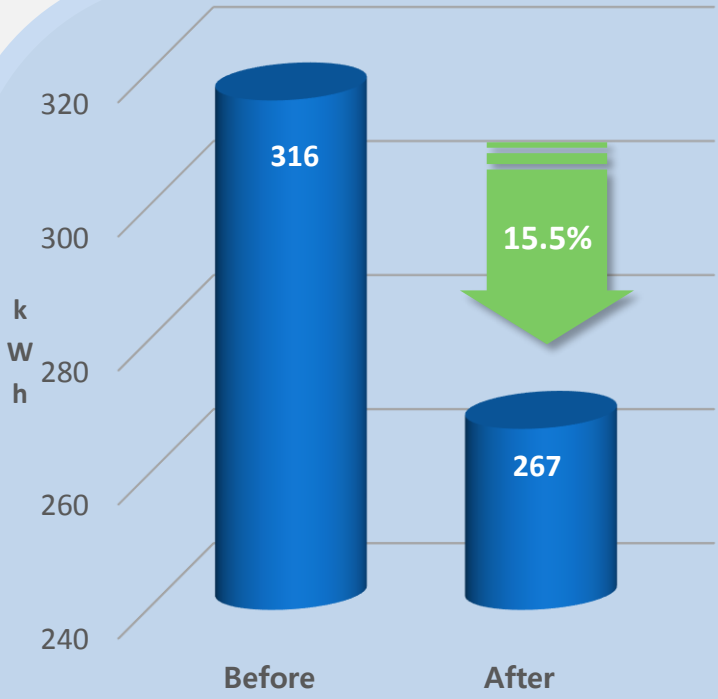


Seo-Jin L&C

Test Overview

Load	Inductive Load
Saving	15.5%
Installation Site	Cold Storage
Country	Korea
Installation Date	2012.05.04
Model	UC-200





Seo-Jin L&C has the newest sharp freezers and refrigerators systems in the warehouse.

UC-200 was installed at the place. The power consumption during the same time had been reduced from 316kWh to 267kWh.

As a result, it showed **15.5%** of saving rate.



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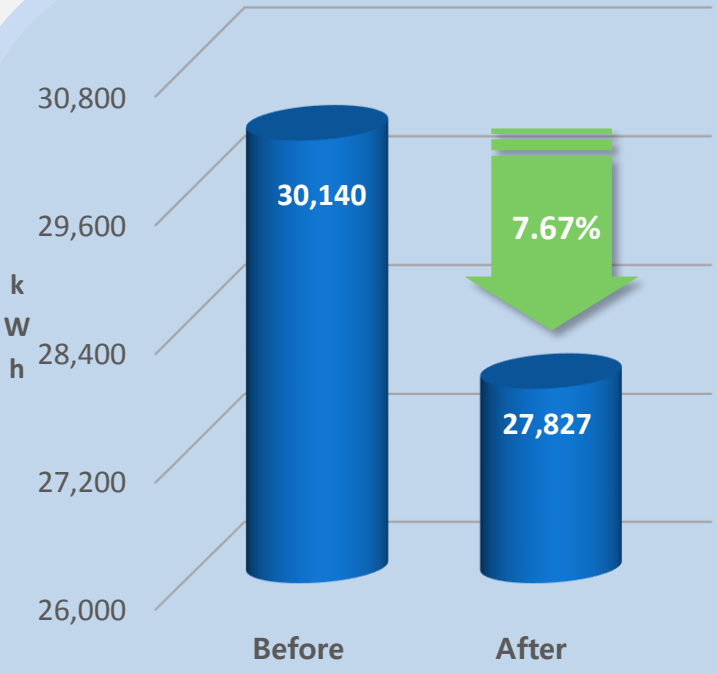
ULTRA KESECO

Danmok Pump Station

Test Overview

Load	Inductive Load
Saving	7.67%
Installation Site	Pump Station
Country	Korea
Installation Date	2008.12.22
Model	UC-100





This case is a result of installing ULTRA in the Danmok Pumping Station.

UC-100 was installed at the place, and the average power consumption had been reduced from 30,140kWh to 27,827kWh.

As a result, it showed **7.67%** of saving rate.



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ULTRA KESECO

Test Report

1. Information of customer

1) Place information : Country - Korea

2) Type of Customer : Pump Station

3) Name of Customer : Danmok Pump Station

4) Capacity of load

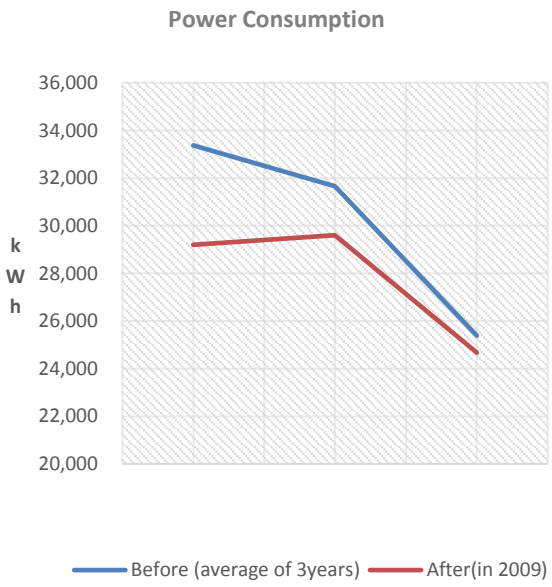
2. Installation Iformation

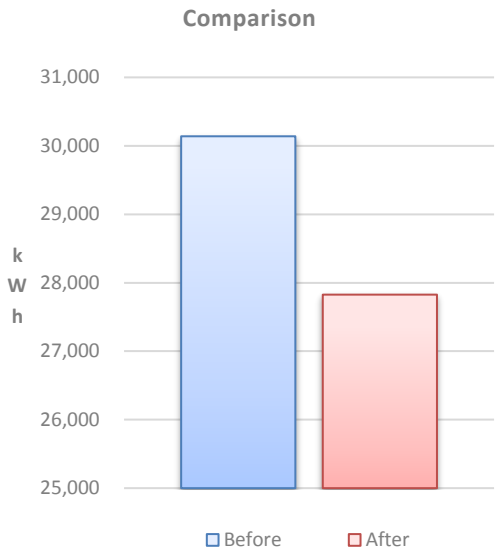
1) Date of Installation : 2008.12.22

2) Type of Customer : UC-100

3. Test Result

Power Saving Rate : 7.67%

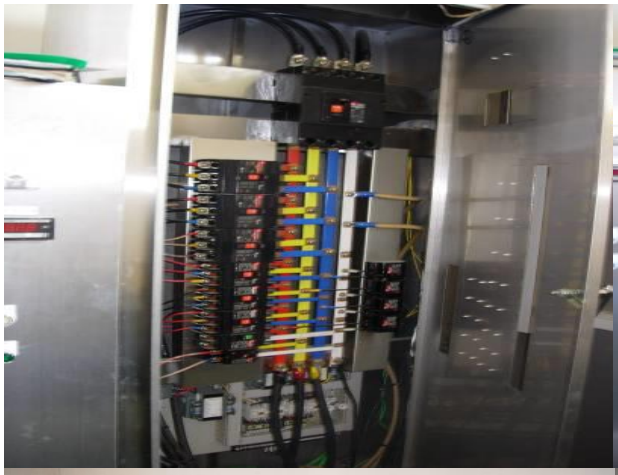
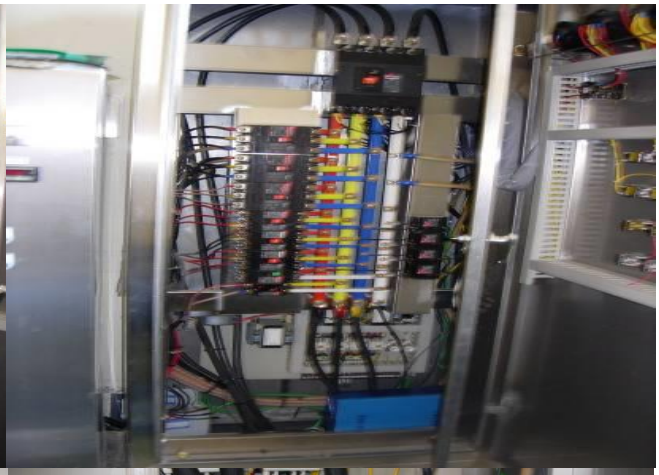




4. The picture of installation





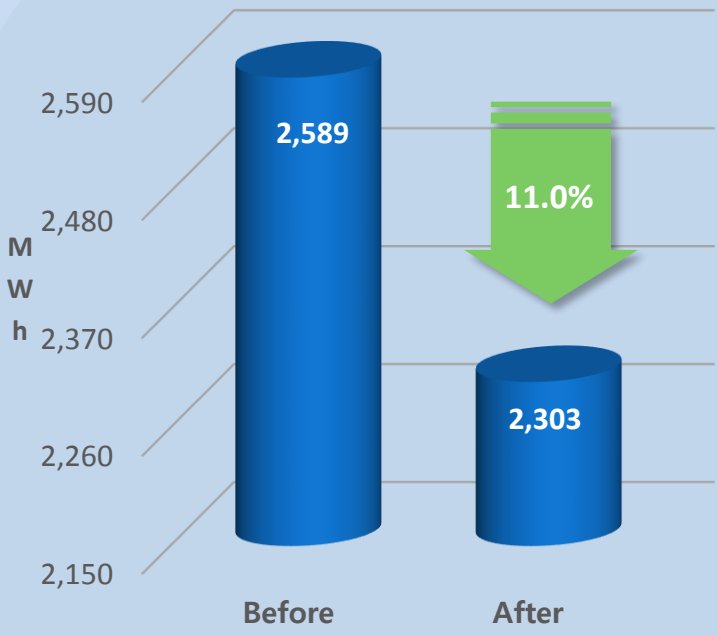

U-302
ULTRA

Masan Pump Station

Test Overview

Load	Inductive Load
Saving	11.0%
Installation Site	Pump Station
Country	Korea
Installation Date	2010.03.08
Model	U-500





This case is a result of installing ULTRA in the Masan Pumping Station.

U-500 was installed at the place, and the power consumption had been reduced from 2,589MWh to 2,303MWh.

As a result,
it showed **11.0%** of saving rate.



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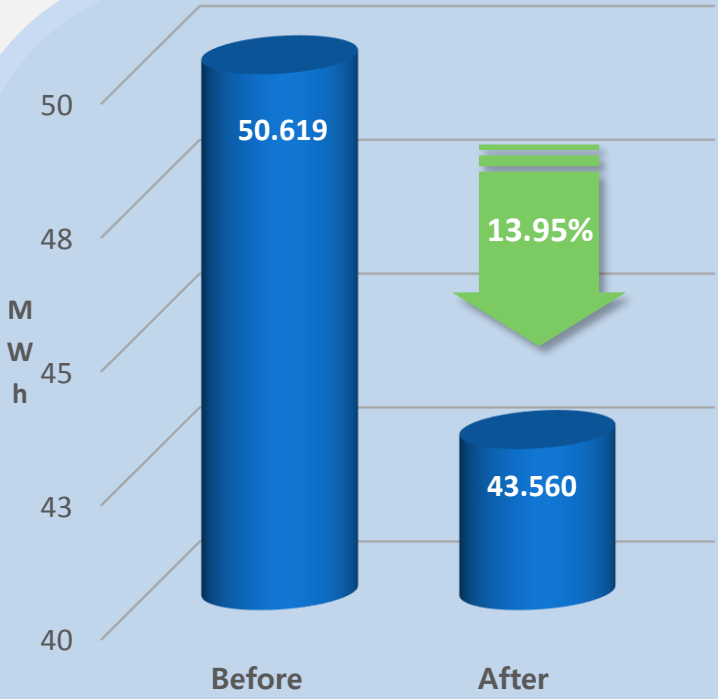
ULTRA KESECO

Baskin Robbins 31

Test Overview

Load	Complex Load
Saving	13.95%
Installation Site	Cafe
Country	Korea
Installation Date	2009.05.21
Model	UR-30





Baskin Robbins 31 is an ice cream store which has facilities such as frozen warehouse and lamp.

UR-30 was installed at the place, and the power consumption had been reduced from 50.619MWh to 43.560MWh.

As a result,
it showed **13.95%** of saving rate.



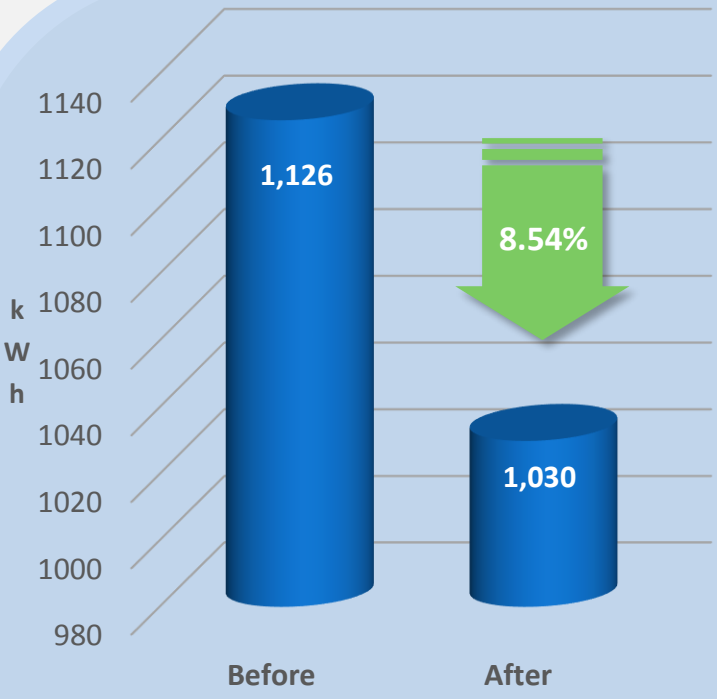
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Gastro Brno, Branch 1

Test Overview

Load	Complex Load
Saving	8.54%
Installation Site	Pub
Country	Czech
Installation Date	2011.05.16
Model	UC-50





Gastro Brno is a pub which serves enjoy food and drinks. It is located in Brno city, the South of Czech.

UC-50 was installed at the place, and the average power consumption had been reduced from 1,126.08kWh to 1,029.96kWh.

As a result, it showed **8.54%** of saving rate.



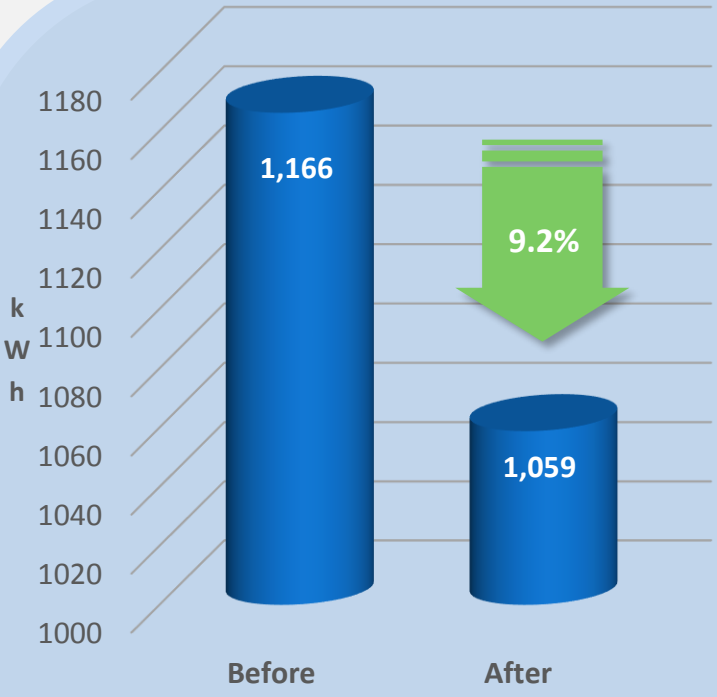
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Gastro Brno, Branch 2

Test Overview

Load	Complex Load
Saving	9.2%
Installation Site	Pub
Country	Czech
Installation Date	2011.05.16
Model	UC-50





Gastro Brno is a pub which serves enjoy food and drinks. It is located in Brno city, the South of Czech.

UC-50 was installed at the place, and the average power consumption had been reduced from 1,166.18kWh to 1,058.84kWh.

As a result, it showed **9.2%** of saving rate.



Gastro Ostrava

Test Overview

Load	Complex Load
Saving	7.98%
Installation Site	Pub
Country	Czech
Installation Date	2011.05.16
Model	UR-30





Gastro Ostrava is located in the North East of Czech in Ostrava. It is a classic local pub.

UR-30 was installed at the place, and the average power consumption had been reduced from 694.25kWh to 638.88kWh.

As a result, it showed **7.98%** of saving rate.

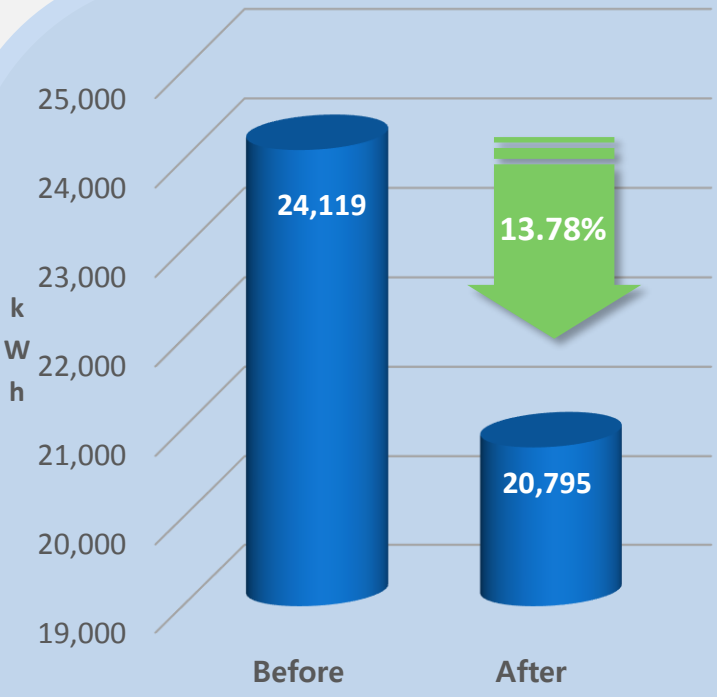


Jipteo Byeotjip pork belly

Test Overview

Load	Complex Load
Saving	13.78%
Installation Site	Restaurant
Country	Korea
Installation Date	2013.10.17
Model	UR-30





This place is a restaurant which serves pork belly.

UR-30 was installed at the place, and four month accumulated power consumption had been reduced from 24,119kWh to 20,795kWh.

As a result,
It showed **13.78%** of saving rate.

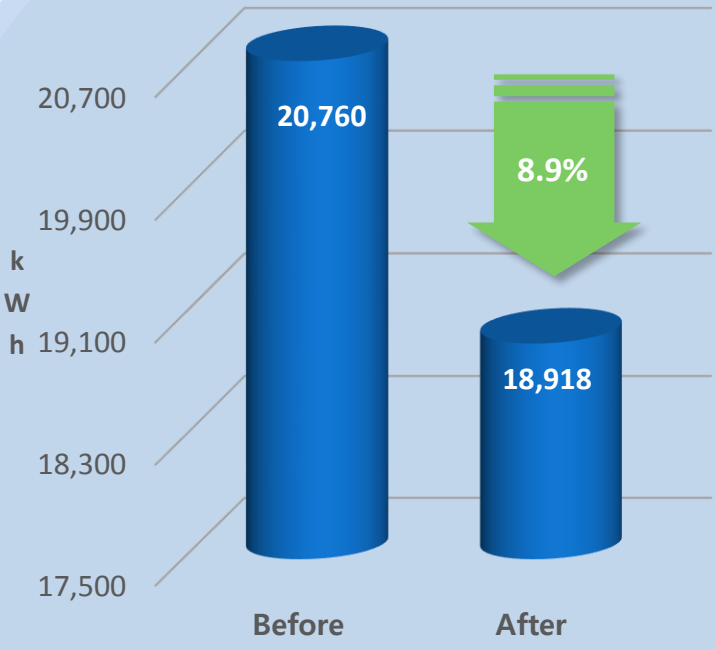


LOTTERIA

Test Overview

Load	Complex Load
Saving	8.9%
Installation Site	Fast-Fooder
Country	Korea
Installation Date	2003.08.20
Model	UC-100





LOTTERIA is a fast-food restaurant which has facilities such as lamps, air conditioning, and fridges.

UC-100 was installed at the place, and the power consumption on October 2003 had been reduced from 20,760kWh to 18,918kWh.

As a result, it showed **8.9%** of saving rate.

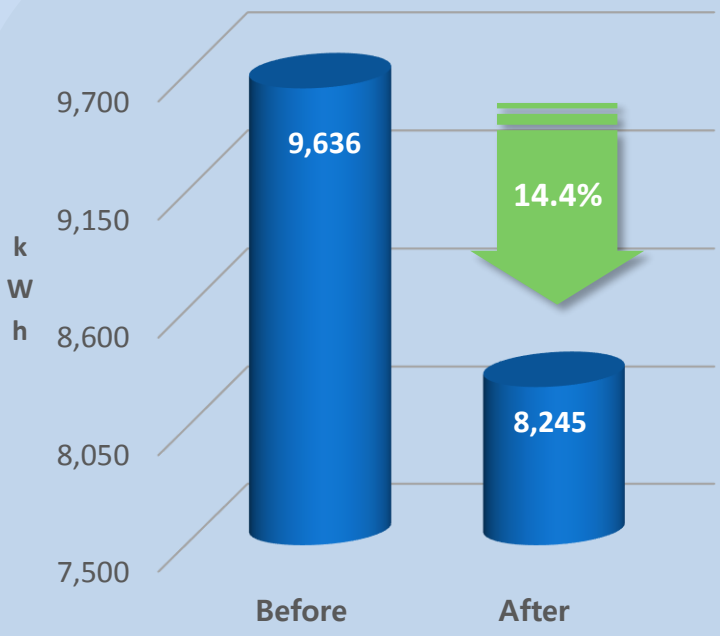


PARIS BAGUETTE

Test Overview

Load	Complex Load
Saving	14.4%
Installation Site	Bakery
Country	Korea
Installation Date	2013.10.17
Model	UR-30





This place is a bakery which has facilities such as an electric oven and fridges.

UR-30 was installed at the place, and the power consumption on Feb 2014 had been reduced from 9,636kWh to 8,245kWh.

As a result,
It showed **14.4%** of saving rate.

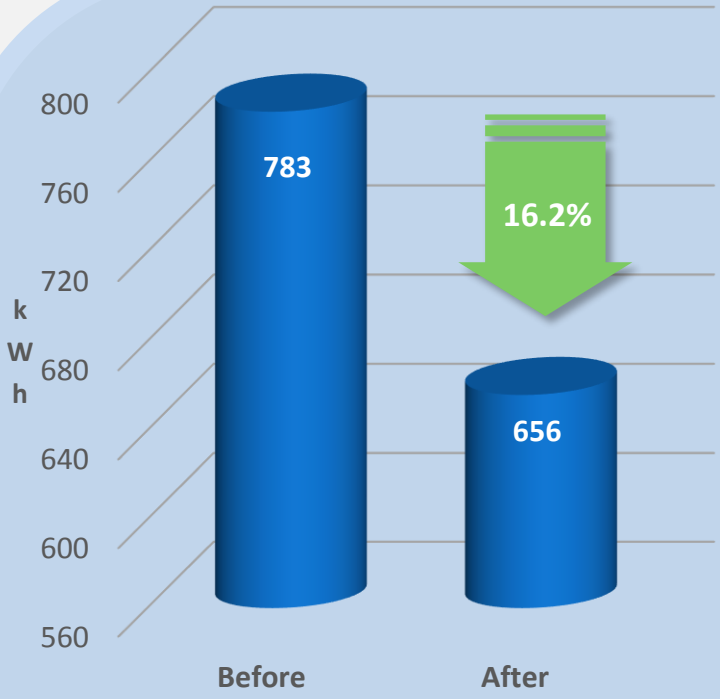


Formula 1 Brisbane Airport Hotel

Test Overview

Load	Complex Load
Saving	16.2%
Installation Site	Hotel
Country	Australia
Installation Date	2011.11.01
Model	UC-100





This case is a result of installing Ultra at The Formula 1 Brisbane Airport Hotel.

After installing at the place, a daily average power consumption had been reduced from 783kWh to 656kWh.

As a result,
it showed **16.2%** of saving rate.



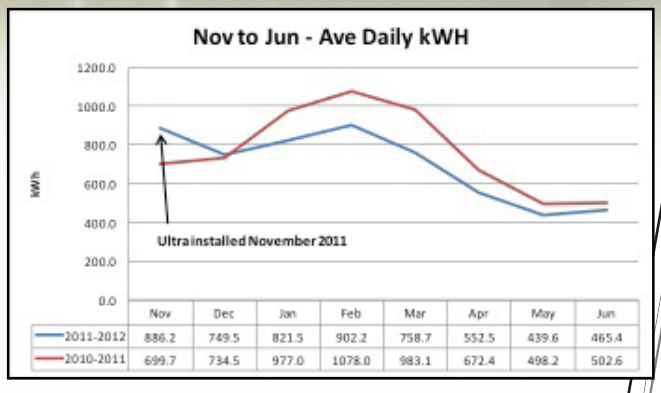
http://www.keseco.com | Office: +82-2-3409-1105 | Fax: +82-2-3409-2106
Namyoung Digital Tower 8F, Seongsuil-ro 84, Seongdong-gu, Seoul, South Korea

ULTRA KESECO



"SAVINGS WERE ACTUALLY 16.2%"

Month	Avg Daily kWh Prior Year	Avg Daily kWh with ULTRA	Avg daily kWh% Change
Nov	699.7	886.2	26.7%
Dec	734.5	749.5	2.0%
Jan	977.0	821.5	-15.9%
Feb	1078.0	902.2	-16.3%
Mar	983.1	758.7	-22.8%
Apr	672.4	552.5	-17.8%
May	498.2	439.6	-11.8%
June	502.6	465.4	-7.4%
Total (Jan-June) Gross kWh and room nights	141,642	119,311	-15.8%
Normalised Data Period	783	656	-16.2%



THE STATS

kWh saving Jan to June: 16.20%
Projected annual savings: $5,157.38
Projected ROI: 12.4 months
Projected annual CO2 reduction: 39.48 Tonnes

Case Study for Accor Hotels Group
Site – Formula 1 Brisbane Airport Hotel, Hendra Qld

ULTRA UC-100 installed November 2011

The ULTRA UC-100 was installed in November 2011. Of note, November's kWh consumption was 26% up on the previous year. After the first month adaption period the drop in Average Daily kWh is quite apparent.

At the clients request we extended the trial and compared the first six months of 2012 with the corresponding period in 2011. Total kWh for six months was down 15.8% (22,331 kWh).

As 2012 was a leap year there was an extra day in the data set; 2011 consisted of 181 days and 2012 had 182 days, therefore the **savings were actually 16.2% (22,967 kWh) when the data period was normalised. This was achieved even though total room nights for the period were slightly higher than the year before.**

ULTRA ENERGY

...Reshaping Power

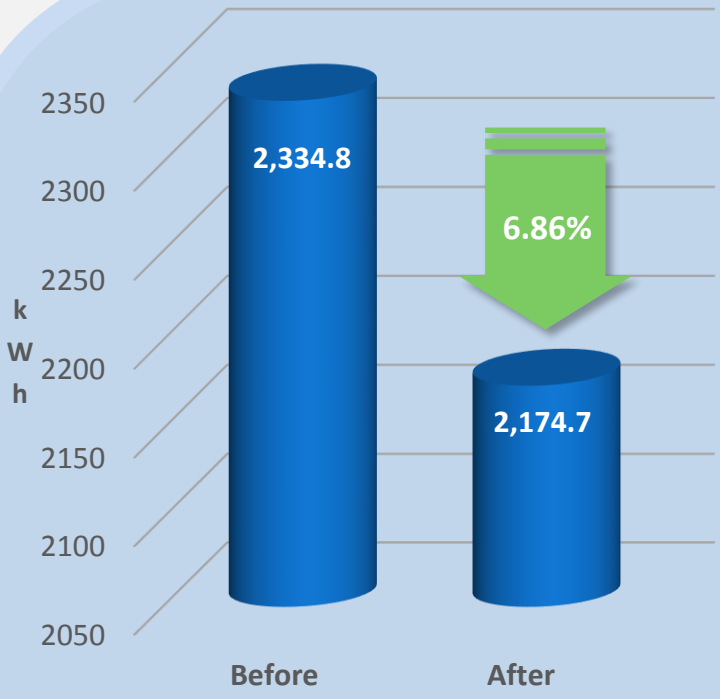
info@ultraenergy.com.au - ultraenergy.com.au
Northbank Plaza Level 22, 69 Ann Street Brisbane QLD 4000
Phone: 07 3112 5159 Fax: 07 3112 5101

Gastro Ostrava Hotel

Test Overview

Load	Complex Load
Saving	6.86%
Installation Site	Hotel
Country	Czech
Installation Date	2011.05.16
Model	UC-100





Gastro Ostrava Hotel owns 15 rooms and a restaurant serving a famous traditional food.

UC-100 was installed at the place, and the average power consumption had been reduced from 2,334.82kWh to 2,174.7kWh.

As a result, it showed **6.86%** of saving rate.



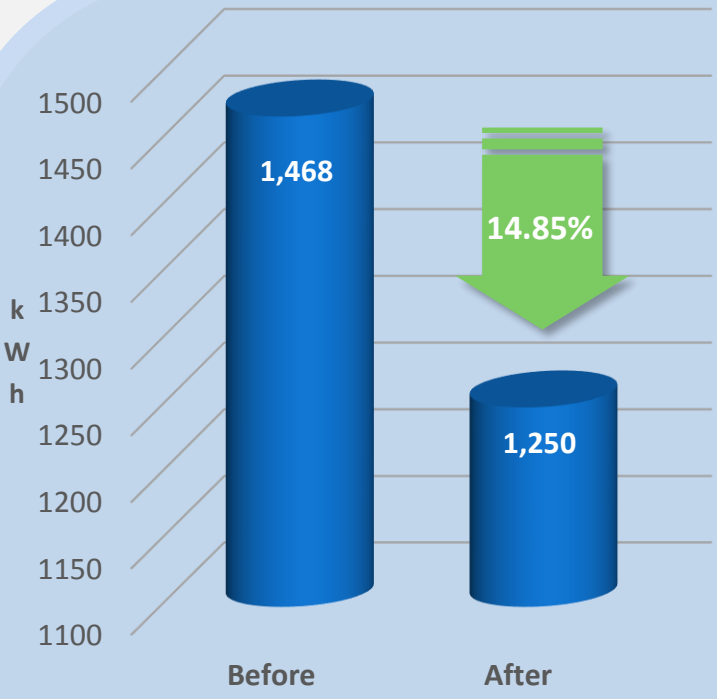
http://www.keseco.com | Office: +82-2-3409-1105 | Fax: +82-2-3409-2106
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HOTEL GRAN REY

Test Overview

Load	Complex Load
Saving	14.85%
Installation Site	Hotel
Country	Spain
Installation Date	2009.12.02
Model	UC-100





This case is a result of installing Ultra at Hotel GRAN REY in Canarias, Spain.

UC-100 was installed at the place, and the average power consumption had been reduced from 1,468kWh to 1,250kWh.

As a result,
it showed **14.85%** of saving rate.

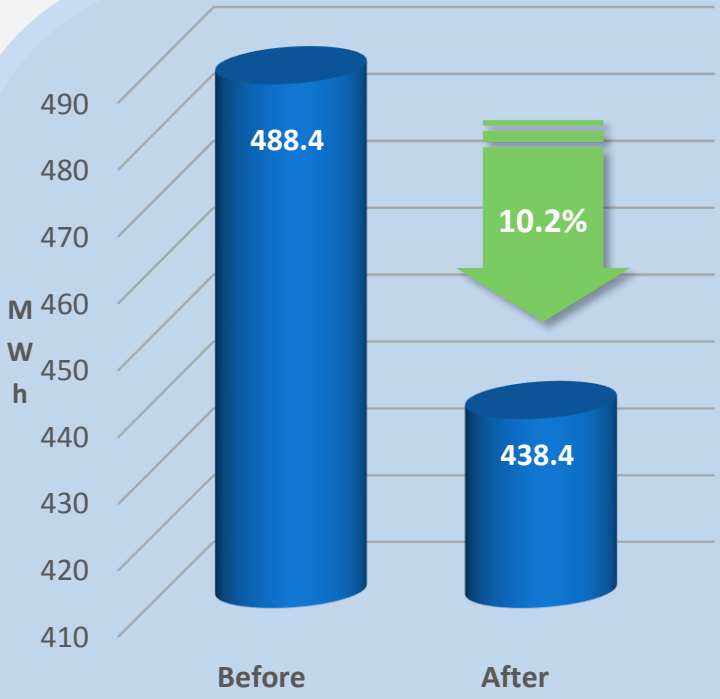


THE DENISON HOTEL

Test Overview

Load	Complex Load
Saving	10.2%
Installation Site	Hotel
Country	Australia
Installation Date	2010.11.11
Model	UC-200





This case is a result of installing Ultra at The DENISON HOTEL in Bowen, Australia.

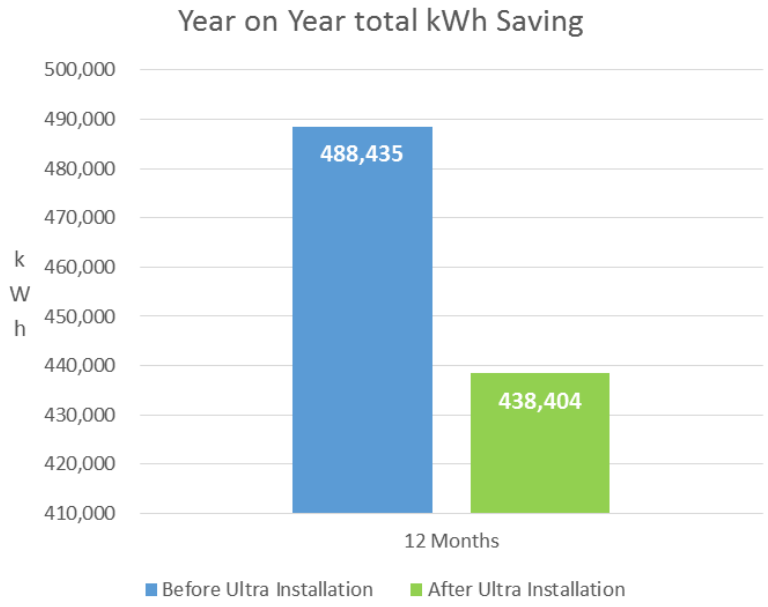
ULTRA was installed at the place, and the yearly power consumption had been reduced from 488.435MWh to 438.404MWh.

As a result, it showed **10.2%** of saving rate.



< The Denison Hotel Case Study >

Ultra Installation Date: 2010/11/11



Total kWh Billed		
From	To	Total kWh
Dec-09	Nov-10	488,435
Dec-10	Nov-11	438,404
kWh Saving		50,031
% Change		10.2%

Before Ultra Installation	
Month	Billed kWh
Dec-09	48,948
Jan-10	40,215
Feb-10	40,744
Mar-10	46,773
Apr-10	40,416
May-10	32,604
Jun-10	33,413
Jul-10	36,982
Aug-10	35,845
Sep-10	45,035
Oct-10	39,772
Nov-10	47,688
Total kWh	488,435

After Ultra Installation	
Month	Billed kWh
Dec-10	41,540
Jan-11	45,761
Feb-11	31,037
Mar-11	44,660
Apr-11	38,025
May-11	35,950
Jun-11	32,669
Jul-11	36,113
Aug-11	37,066
Sep-11	38,672
Oct-11	30,493
Nov-11	26,418
Total kWh	438,404

An ULTRA UC-200 Current Improvement Device was installed on the 11th Nov 2010.
Total annual power consumption was measured from December 2010 to November 2011 and compared to the prior year.

Total billable kWh reduced by 50,031 units or 10.2%. During the test period there were no significant changes to operating procedures, plant and equipment or turnover.
This equates to an ROI of approximately 13.362 months.



11th July, 2012

To Whom It May Concern

I have just recently installed an Ultra Energy Power Saver device at the Denison Hotel in Bowen and have achieved a remarkable result with a 10.2% saving in consumption.

I was originally dubious about the sales pitch on savings but as I have known the presenter Paul Hunt for most of his life and respect him as an individual I took the risk.

I have just instructed Paul to install a device in my other property the Merinda Hotel just outside of Bowen.

I am most impressed and can highly recommend this device.

Yours Faithfully

B J ALLEN

Director

Denison Hotel Pty Ltd

The Denison Hotel Pty Ltd
55 Powell Street Bowen 4805
Ph: 07 47861533 Fax: 07 47861668 www.thedenison.com.au

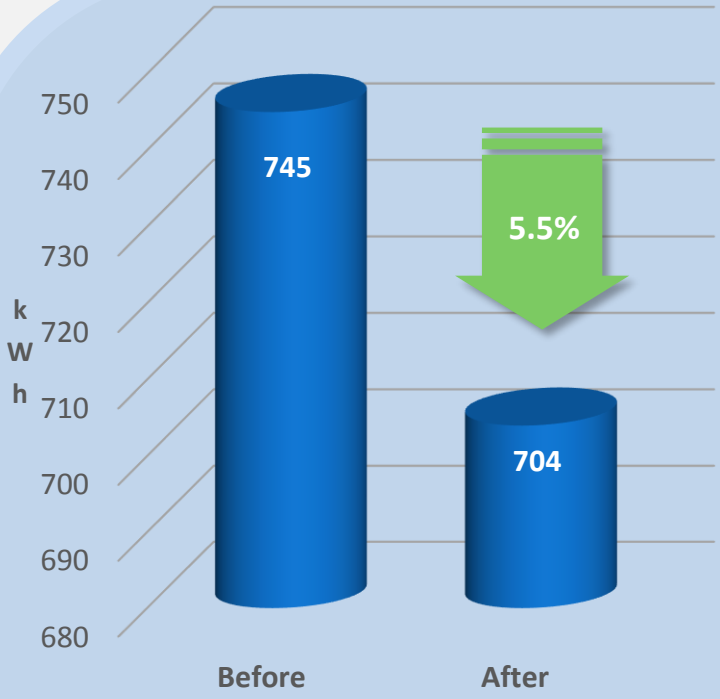
ABN: 75 757 650 316

Al-Hawi

Test Overview

Load	Complex Load
Saving	5.5%
Installation Site	Supermarket
Country	Sudan
Installation Date	2009.06.18
Model	UC-100





Al-Hawi is a chained supermarket in Sudan.

UC-100 was installed at the Al-Hawi on Jul 2nd, 2009. The 12 hours accumulative power consumption had been reduced from 745kWh to 704kWh.

As a result, it showed **5.5%** of saving rate.

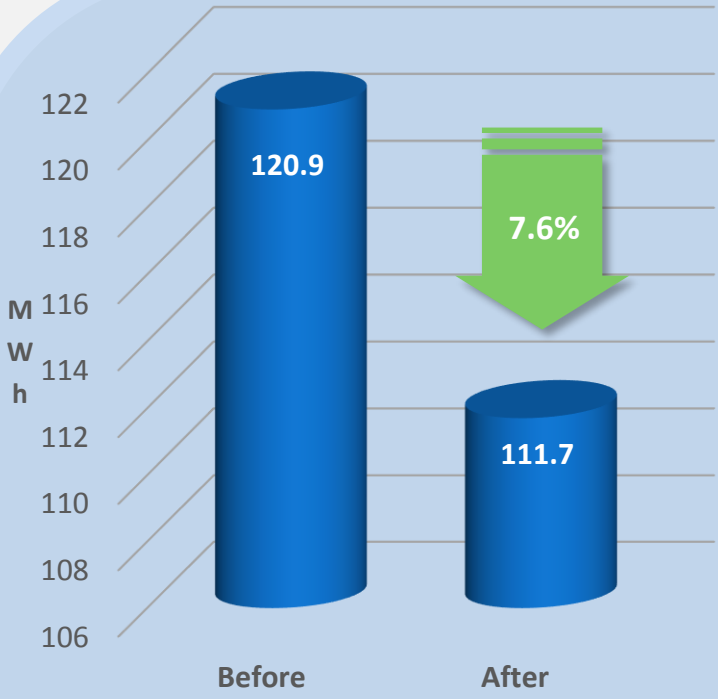


Carrefour

Test Overview

Load	Complex Load
Saving	7.6%
Installation Site	Hypermarket
Country	Colombia
Installation Date	2008.07.28
Model	U-1000 (2)





Carrefour is an international hypermarket chain headquartered in France.

Ultra were installed at the place, and the power consumption had been reduced from 120.9MWh to 111.7MWh.

As a result, it showed **7.6%** of saving rate.



Dirección Ejecutiva

Avda. 15 No. 106-57 Piso 4º.
Santafé de Bogotá, D.C.
Tel.: (57.1) 657 97 97
Fax: (57.1) 523 03 44

Señores
Keseco Colombia Ltda..
La ciudad

Para Grandes Superficies de Colombia S.A. es gratificante poder contar con proveedores como ustedes, y en pro de que esta relación comercial continué fortaleciéndose, estamos inicialmente interesados en la adquisición de los equipos ULTRA para cuatro (4) de nuestras tiendas, sin embargo es de considerar que los tiempos de retorno de la inversión contemplados en el proyecto inicial, se verán afectados por los costos actuales de los equipos ULTRA.

Considerando que el proyecto de inversión sobre estos equipos continuara, solicitamos a ustedes un descuento del 7% sobre los precios inicialmente cotizados.

Atentamente,



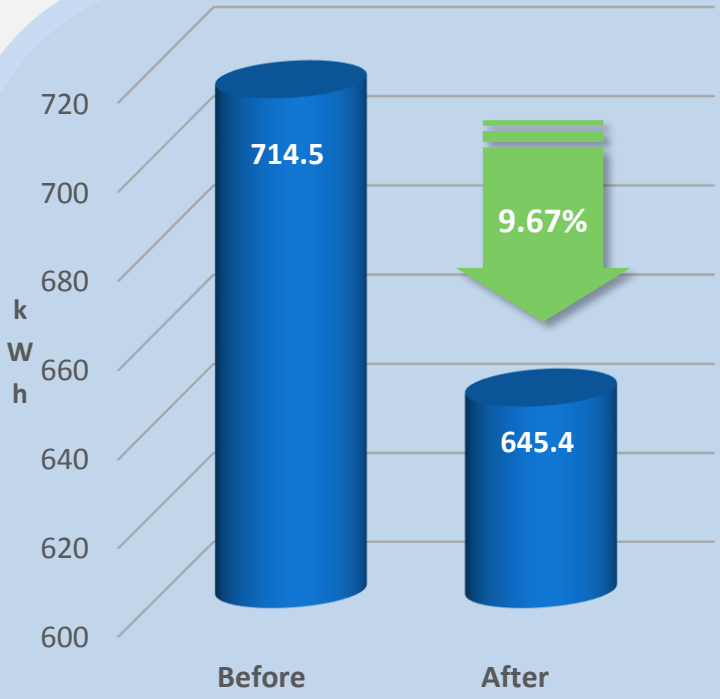
Luis Alejandro Agudelo Rojas
Jefe Sección Central de Compras

FORA

Test Overview

Load	Complex Load
Saving	9.67%
Installation Site	Supermarket
Country	Ukraine
Installation Date	2010.02.19
Model	UC-50





The FORA is a supermarket chain. They belong the Fozzy group.

UC-50 was installed at the FORA supermarket in kiev, Ukraine, and the power consumption had been reduced from 714.50kWh to 645.39kWh.

As a result, it showed **9.67%** of saving rate.



TEST REPORT
of power saving with "ULTRA"

Kiev, Ukraine
12th of April 2010

1. Place:
Supermarket "FORA", No.5 Kurchatova Str., Kiev, Ukraine

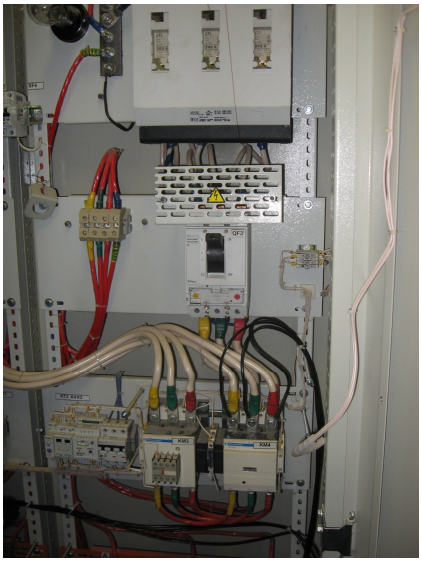


2. Term of test: 19.02.2010 - 12.04.2010

3. Model: ULTRA UC−50 (50 KVA), 3P3W.

4. Date of installation: 19.02.2010
Adaptation term: 2 weeks since installation date.





5. Analysis of data
For objective comparison used the same periods before and after the installation: for the same periods (the same days and the same time):

- Period before installation ULTRA: Wednesday, February 17, 2010 – Friday, February 19, 2010 (46 hours 30 minutes).
- Period after installation ULTRA: Wednesday, March 24, 2010 – Friday, March 26, 2010 (46 hours 55 minutes).

Consumptions electricity before installation "ULTRA"

Date of measurements	Period	Q-ty days	Summary consumptions, kWH	Consumption for the period, kWH	Daily consumption, kWH	Notice
						without ULTRA
17.02.2010 - среда			398182			
19.02.2010 - пятница	**17.02 - 19.02.2010**	**2**	399611	1429	**714,5**	

Consumptions electricity after installation "ULTRA"

Date of measurements	Period	Q-ty days	Summary consumptions, kWH	Consumption for the period, kWH	Daily consumption, kWH	Notice
01.03.2010			407429,01			with ULTRA
05.03.2010	01.03 - 05.03.2010	4	410237,68	2808,67	702,17	
19.03.2005	05.03 - 19.03.2010	14	420317,96	10080,28	720,02	
22.03.2010	19.03 - 22.03.2010	3	422585,39	2267,43	755,81	
24.03.2010 - Wednesday	22.03 - 24.03.2010	2	423970,25	1384,86	692,43	
26.03.2010 – Friday	**24.03 - 26.03.2010**	**2**	425261,02	1290,77	**645,39**	

6. RATE OF SAVING

1. **Daily consumption, kWH before installation ULTRA: 714,5 кВтч**
2. **Daily consumption, kWH after installation ULTRA: 645,39 кВтч**

Saving rate (%) = (645,39 - 714,5) / 714,5 * 100 = -9,67%

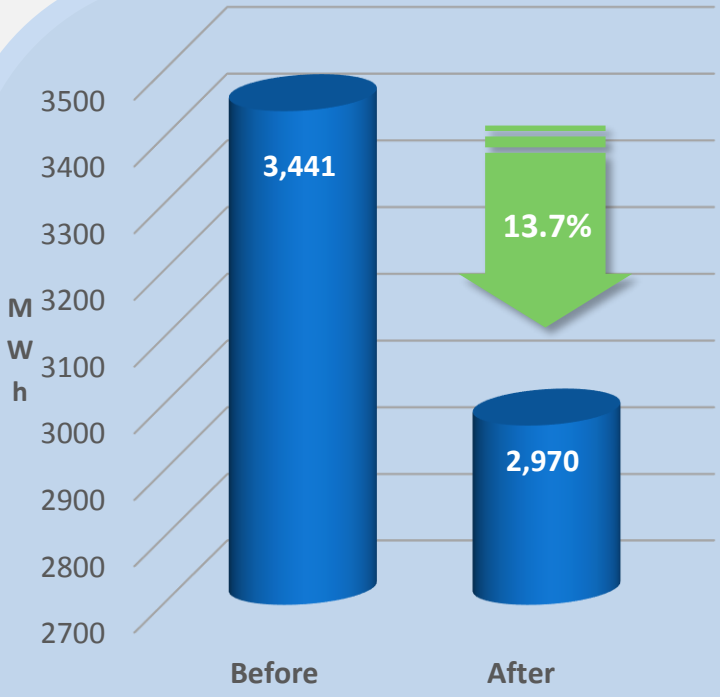
Director «INTERMO» LTD
Yuriy Khrapunov

IKEA

Test Overview

Load	Complex Load
Saving	13.7%
Installation Site	Furniture Retailer
Country	Cyprus
Installation Date	2010.09.01
Model	U-500 (2), U-1000





IKEA is an international home products company that designs and sells a modern style furniture.

Ultra were installed at the place, and the monthly power consumption had been reduced from 3,441MWh to 2,970MWh.

As a result, it showed **13.7%** of saving rate.



IKEA CYPRUS
(Total installation of ULTRA 2000 KVA)



Analysis Before and After Installation of ULTRA

	2010 (Before)	2011 (After)	Difference (kWh)	Saving Rate (%)
Jan.	320320	304440	15880	4.96%
Feb.	318750	286990	31760	9.96%
Mar.	363880	311720	52160	14.33%
Apr.	347400	300760	46640	13.43%
May	401500	354290	47210	11.76%
Jun.	478980	430630	48350	10.09%
Jul.	578900	466580	112320	19.40%
Aug.	631320	514430	116890	18.52%

08 Δεκεμβρίου, 2011

Βεβαίωση

Με βάση τα στοιχεία ενεργειακής μελέτης που πραγματοποιήθηκε από ανεξάρτητη εταιρία, σχετικά με την εγκατάσταση συστημάτων εξοικονόμησης ηλεκτρικής ενέργειας από την εταιρία Hellas Energy (Μυτιληνέλης Group of Companies) στα εγκαταστάσεις της H.M. Housemarket (Cyprus) Ltd (IKEA), πραγματοποιήθηκε συνολικά εξοικονόμηση ηλεκτρικής ενέργειας της τάξης του 13,5% κατά την περίοδο 01/09/2010-01/09/2011.

Η εξοικονόμηση επιτεύχθηκε με την εγκατάσταση συστημάτων ULTRA, τύπος U-1000 και U-500 (ισχύος 2000kVA) της εταιρείας Hellas Energy.

Για την H.M. Housemarket (Cyprus) Ltd (IKEA CYPRUS)

Κωνσταντίνος Μουρουζίδης
Διευθυντής

FOURLIS GROUP
.M. HOUSEMARKET (CYPRUS) LTD

CORRESPONDENCE ADDRESS:
P.O. Box 17068
2260 Nicosia, Cyprus

STORE ADDRESS:
1, Verginas Street
2025 Strovolos,
Nicosia, Cyprus

REGISTERED OFFICE:
12, Esperidon Street,
4th Floor
1087 Nicosia, Cyprus

Tel.: +357 22502500
Fax: +357 22502599
e-mail:
cs.cyprus@ikea.com.cy

IKEA

8 of December 2011

Certificate

Based on the energy study, which was conducted by an independent company, for the installation of energy saving system which was carried out by Hellas Energy Company (Mitilinelis Group of companies) at the premises of H.M. Housemarket (Cyprus) Ltd (IKEA), it was found out a total saving of 13,7% during the period 01/01/2011 - 31/08/2011.

This percentage of saving was achieved by the installation of Ultra devices, UC-1000 and UC-500 (total capacity 2000kva) from Hellas Energy Company.

For H.M Housemarket (Cyprus) Ltd (IKEA CYPRUS)

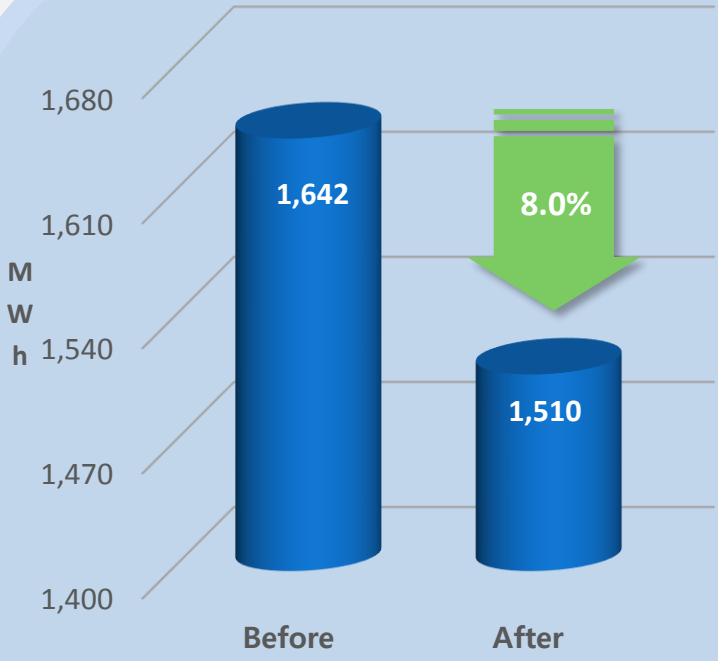
Konstantinos Mourouzidis
Director

Wol-got Fishery Market

Test Overview

Load	Complex Load
Saving	8.0%
Installation Site	Fishery Market
Country	Korea
Installation Date	2010.08.17
Model	U-500





This place is fishery market which equipped with air conditioners, heaters, and lamps.

U-500 was installed at the place, and the power consumption had been reduced from 1,642MWh to 1,510MWh.

As a result,
It showed **8.0%** of saving rate.



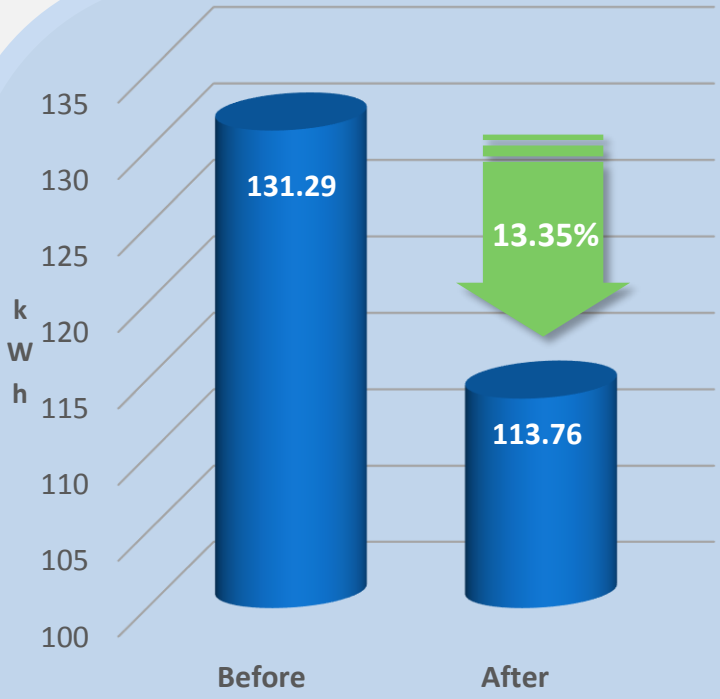
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Namyoung Digital Tower 8F, Seongsuil-ro 84, Seongdong-gu, Seoul, South Korea

DEDE

Test Overview

Load	Complex Load
Saving	13.35%
Installation Site	Government Office
Country	Thailand
Installation Date	2011.07.25
Model	UR-30





DEDE is the abbreviation of the Ministry of Energy Development under Thailand government.

UR-30 was installed at the place, and a daily average power consumption had been reduced from 131.29kWh to 113.76kWh.

As a result,
it showed **13.35%** of saving rate.



ศูนย์อนุรักษ์พลังงานแห่งประเทศไทย
ภายใต้การดำเนินงานของ สภาอุตสาหกรรมแห่งประเทศไทย
THE ENERGY CONSERVATION CENTER OF THAILAND
UNDER THE MANAGEMENT OF THE FEDERATION OF THAI INDUSTRIES

13 December 2011

Re: The results of energy saving equipment (ULTRA).

To: Executive Director of W.S.I. Co.

Letter from the W.S.I Co, Limited, dated 22 September 2011 for the donation of equipment, energy saving (ULTRA).

According to the result of the testing and measuring of the equipment. Energy saving device (ULTRA) which showed that the test results. Energy saving device (ULTRA) can save up the power usage to 13.35% and an average electricity cost savings of 8% from the electricity bill. The Energy Conservation Center of Thailand has been successfully tested it.

The Energy Conservation Center of Thailand. I certify that energy-efficient equipment (ULTRA) can actually save energy. The results prompted the company.

The Energy Conservation Center also would like to thank you for your courtesy and energy saving devices, ultra (ULTRA) version 30KVA/220 volt Model. UR-30(Serial No. KEU-H11008192K025N) to be used in the Energy Conservation Center of Thailand

Regards,

Poongjaroon Srisovanna

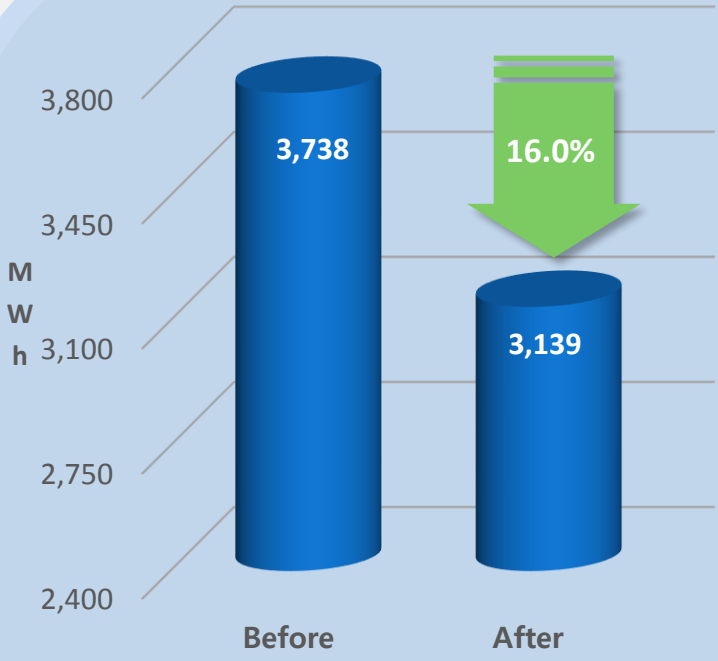
Director

Livestock Sanitation Treatment Center

Test Overview

Load	Complex Load
Saving	16.0%
Installation Site	Government Office
Country	Korea
Installation Date	2010.04.22
Model	U-500 (2)





This case is a result of installing ULTRA in the Livestock Sanitation Treatment Center.

U-500 was installed at the place, and the power consumption had been reduced from 3,738MWh to 3,139MWh.

As a result, it showed **16.0%** of saving rate.



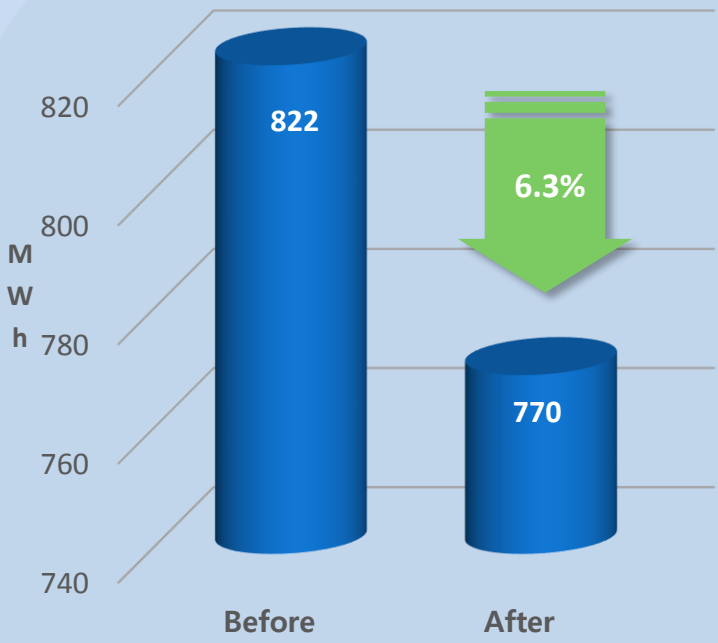
http://www.keseco.com | Office: +82-2-3409-1105 | Fax: +82-2-3409-2106
Namyoung Digital Tower 8F, Seongsuil-ro 84, Seongdong-gu, Seoul, South Korea

Public Community Center

Test Overview

Load	Complex Load
Saving	6.3%
Installation Site	Government Office
Country	Korea
Installation Date	2010.05.06
Model	UC-200 (2), U-300





This place is the public community center which has facilities such as audio systems, stage illuminations.

ULTRA was installed at the place, and the power consumption had been reduced from 822MWh to 770MWh.

As a result,
It showed **6.3%** of saving rate.



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Namyoung Digital Tower 8F, Seongsuil-ro 84, Seongdong-gu, Seoul, South Korea

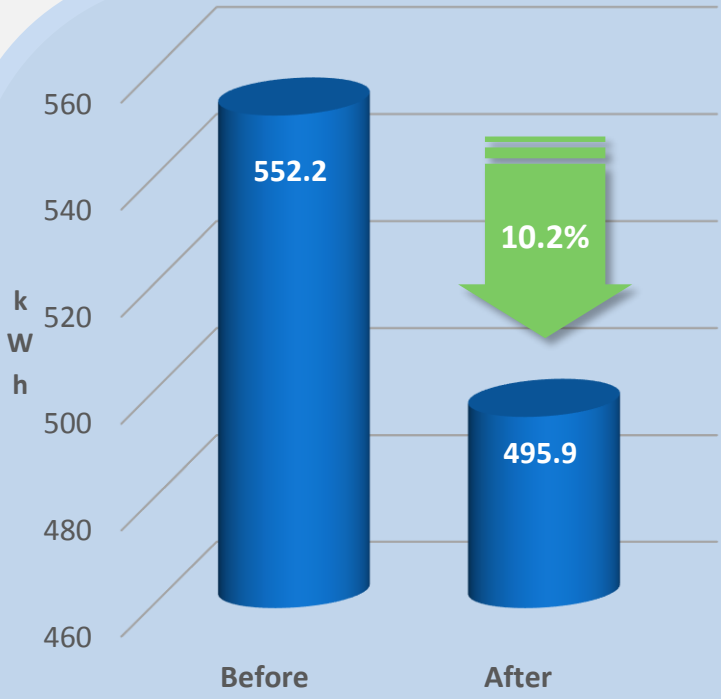
KESECO

Town Hall

Test Overview

Load	Complex Load
Saving	10.2%
Installation Site	Town Hall
Country	Greece
Installation Date	2010.04.30
Model	UC-50, UC-100





Loutraki is a seaside resort city in Western Greece. ULTRA was installed at Town Hall of Loutraki.

After installation, the average power consumption per day had been reduced from 552.2kWh to 495.9kWh.

As a result, it showed **10.2%** of saving rate.

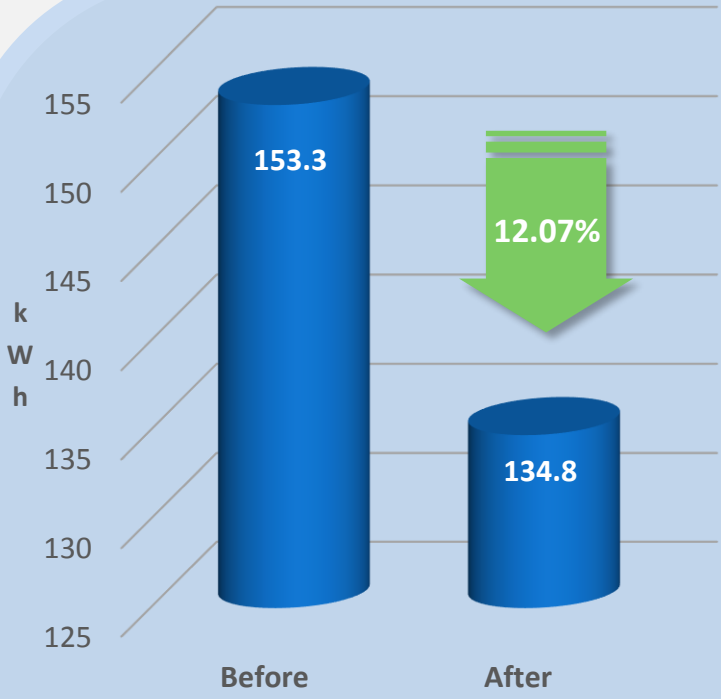


Carstens MC

Test Overview

Load	Complex Load
Saving	12.07%
Installation Site	Motorcycle Shop
Country	Denmark
Installation Date	2011.11.03
Model	UR-30





Carstens MC is a local motorcycle shop, which is located in Varde, Denmark.

UR-30 was installed at the place, and the average power consumption had been reduced from 153.25kWh to 134.75kWh.

As a result,
it showed **12.07%** of saving rate.

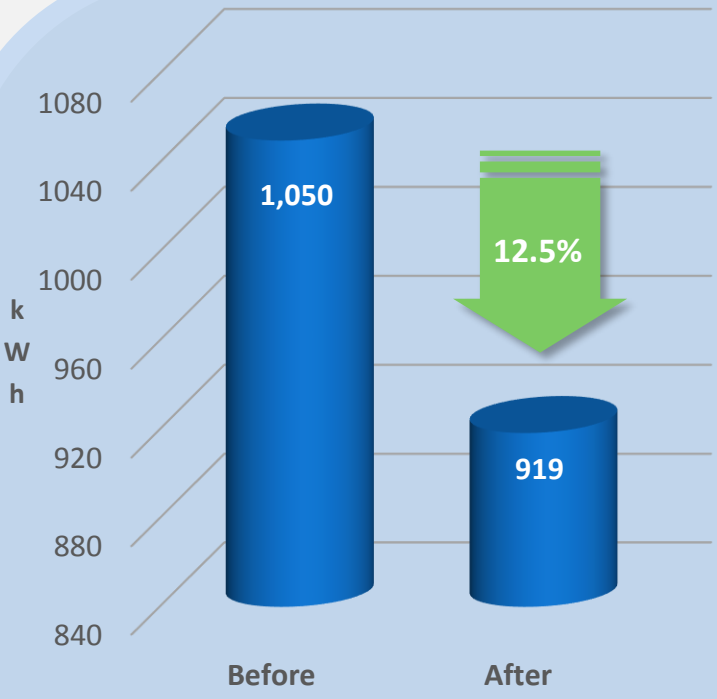


Colegio Brains

Test Overview

Load	Complex Load
Saving	12.5%
Installation Site	School
Country	Spain
Installation Date	2010.05.13
Model	U-300





As a private school, Colegio Brains provides students with a quality education.

U-300 was installed at the place, and the average power consumption had been reduced from 1,050kWh to 918.5kWh.

As a result, it showed **12.5%** of saving rate.



inmomâtica

Informe Técnico

Ref.: IT100610-/01g

Análisis de consumos eléctricos Colegio Brains/La Moraleja

Cliente:
ULTRA ENRGY WORLD

2 de Julio de 2010
Versión 1.0

Preparada:	Revisada:	Aprobada:
Juan Manuel G. Hergueta Director Técnico Fecha: 28/06/10	Alfredo Villalba Director de Tecnología Fecha: 01/07/10	

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1 Presentación de INMOMATICA

El Grupo INMOMATICA está formado por empresas y expertos del mundo de la domótica, la automatización, las técnicas energéticas, las telecomunicaciones, los sistemas audiovisuales y las tecnologías de la información con una experiencia de 20 años en la ejecución y dirección de proyectos, tanto en el mundo industrial como en el de edificios y viviendas.

Realizamos proyectos de diseño, instalación y puesta en marcha de instalaciones domóticas y sus aplicaciones:

- Control de iluminación
- Seguridad técnica
- Climatización
- Automatización de motorizaciones
- Gestión y eficiencia energética
- Telegestión
- Internet, conectividad y redes
- Ocio y sistemas audiovisuales (multiroom, mediaserver)
- Proyectos de Home Cinema / Custom

Así como proyectos de control integral de edificios e inmuebles:

- Gestión eficiente de la energía
- Sistemas de apoyo a la Ingeniería energética (solar, eólica, geotérmica, biomasa)
- Telemetría de consumos
- Luminotecnia
- Climatización
- Sistemas avanzados de videovigilancia
- Control de accesos y presencia
- Sistemas de monitorización integral
- Mantenimiento activo

2 Descripción del Documento

Este documento es un primer informe general sobre las mediciones de consumo eléctrico realizadas en las instalaciones del Colegio Brains de la Moraleja (Alcobendas / Madrid) en un segundo anexo facilitaremos los gráficos de detalle que actualmente están pendiente de procesar.

3 Datos de la medición

CENTRO

Ubicación: Colegio Brains la Moraleja

Realizada por: Juan Manuel González

CLIENTE

Datos de contacto:

Francisco Pina

Empresa:

Tlf.: 679 960 190

Fax:

e-mail:

WEB:

4 Datos de consumo

Antes de la instalación del equipo ULTRA

Variable	Dato
Fecha inicio	20/04/2010
Fecha fin	10/05/2010
Total días	20
Consumo medio Curva cuartoraria	20 Kwh
Consumo medio diario acumulado	1050 Kwh

Después de la instalación del equipo ULTRA

Variable	Dato
Fecha inicio	13/05/2010
Fecha fin	16/05/2010
Total días	4
Consumo medio Curva cuartoraria	18,8 Kwh
Consumo medio diario acumulado	976 Kwh

Variable	Dato
Fecha inicio	16/04/2010
Fecha fin	29/06/2010
Total días	43
Consumo medio Curva cuartoraria	17,5 Kwh
Consumo medio diario acumulado	918,5 Kwh

5 Análisis

Una vez instalado el equipo ultra de 300 Kva se aprecia una caida en la potencia consumida diaria de un 7%.

Tras un análisis diario de las curvas de consumo de energía (potencia activa) se detecta una segunda caída visible a partir del 5 dia.

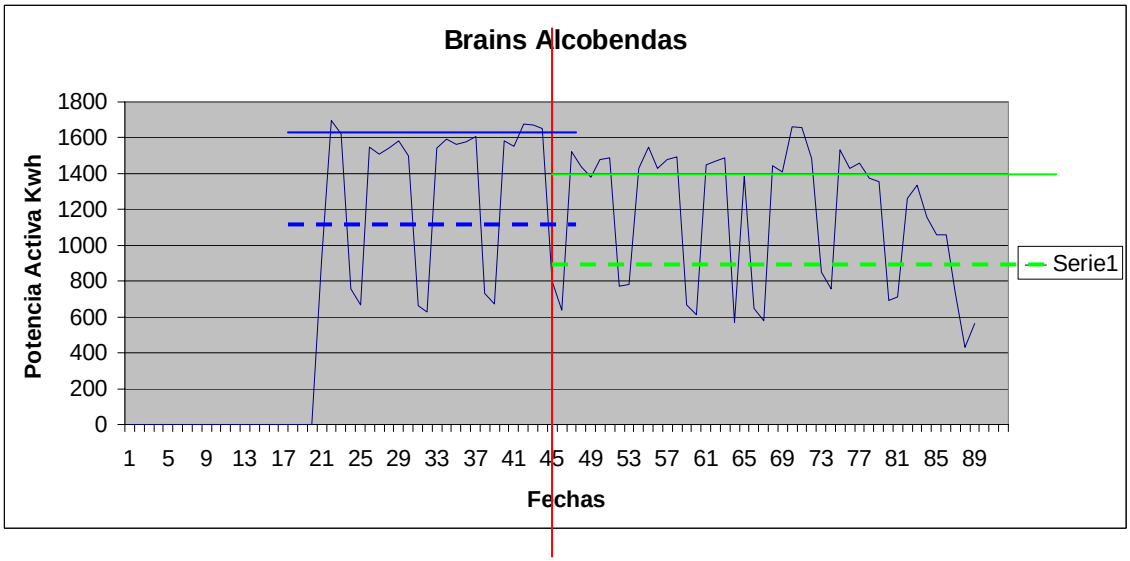
En esta segunda caída, que se mantiene durante 43 días (fin de las lecturas), la disminución de la potencia consumida alcanza un 12,5 %.

REDUCCION DE CONSUMO (medio) DE POTENCIA ACTIVA EN Kwh DUARNTE LOS 43 (cuarenta y tres días posteriores) A LA INSTALACION DE ULTRA ES DE:

12,5 (doce con cinco) por ciento.

Observaciones:

Este análisis se basa en lecturas anteriores y posteriores a la instalación del equipo de ahorro.

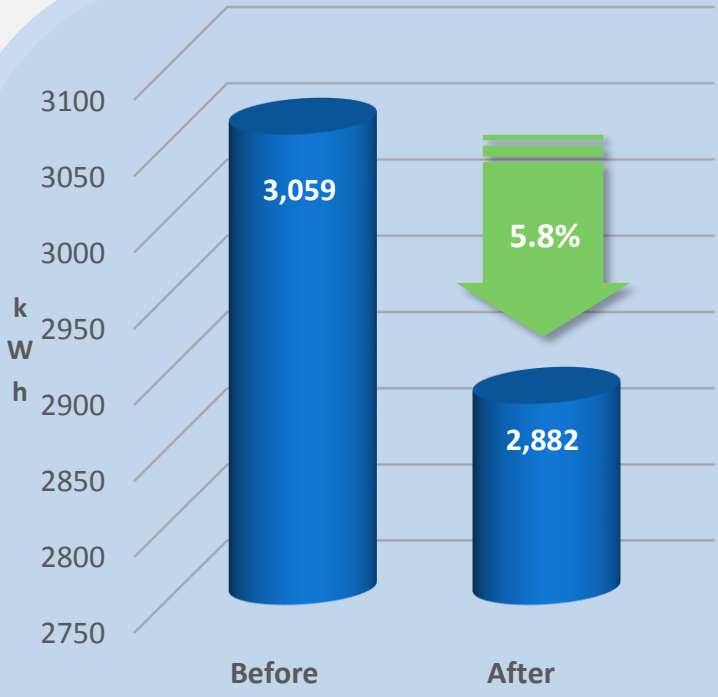


Deloitte

Test Overview

Load	Complex Load
Saving	5.8%
Installation Site	Office
Country	Denmark
Installation Date	2011-10-25
Model	UC-50





Deloitte is the brand providing consulting and risk management to the selected clients.

UC-50 was installed at the office building, and the average power consumption had been reduced from 3,058.8kWh to 2,882.3kWh.

As a result, it showed **5.8%** of saving rate.



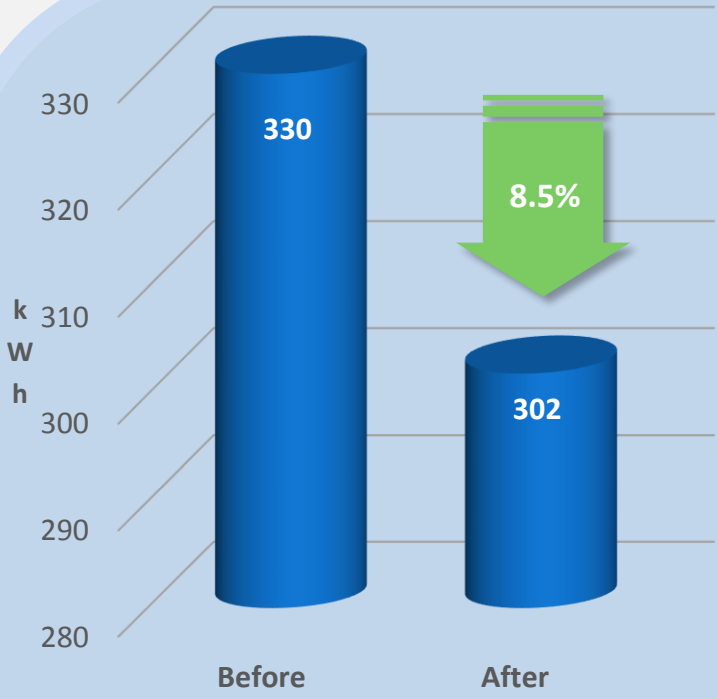
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Namyoung Digital Tower 8F, Seongsuil-ro 84, Seongdong-gu, Seoul, South Korea

Grupo Casablanca

Test Overview

Load	Complex Load
Saving	8.5%
Installation Site	Nursing Home
Country	Spain
Installation Date	2010.12.27
Model	UC-50





Grupo Casablanca is a nursing company caring the elderly. Six centers operate in Spain.

UC-50 was installed at the place, and the average power consumption had been reduced from 330kWh to 302kWh.

As a result, it showed **8.5%** of saving rate.



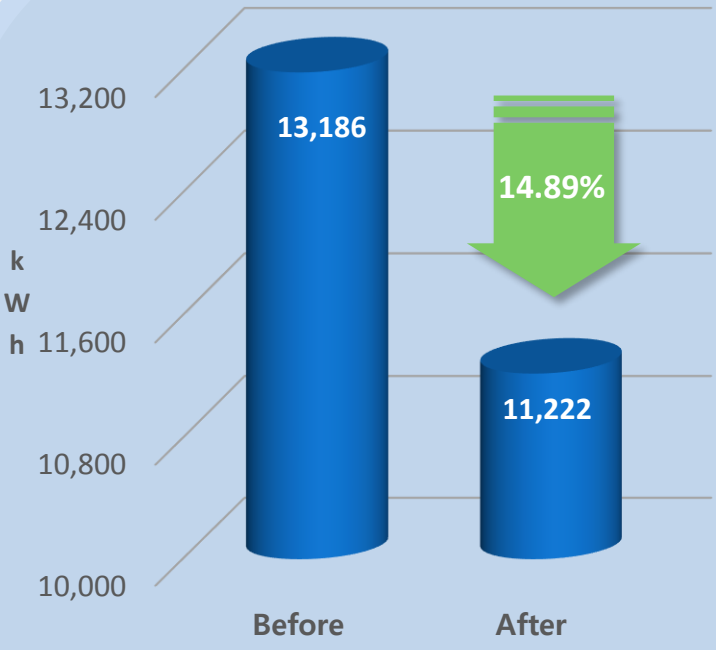
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JB Bank

Test Overview

Load	Complex Load
Saving	14.89%
Installation Site	Bank
Country	Korea
Installation Date	2008.02.22
Model	UC-50





This case is a result of installing ULTRA at JB bank in South Korea.

UC-50 was installed at the place, and the cumulative power consumption for test periods had been reduced from 13,186kWh to 11,222kWh.

As a result,
it showed **14.89%** of saving rate.

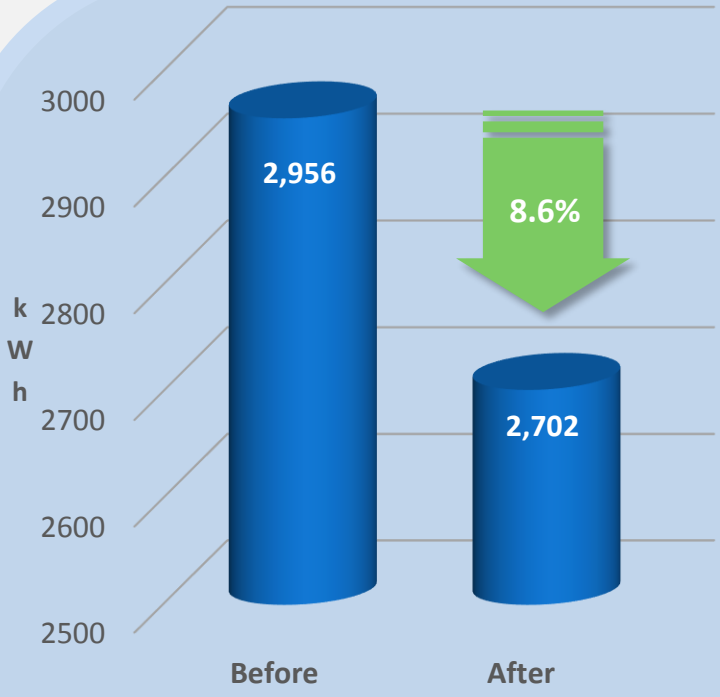


MAPFRE

Test Overview

Load	Complex Load
Saving	8.6%
Installation Site	Office
Country	Spain
Installation Date	2011.07.16
Model	U-500





MAPFRE is the leading insurance company in Spain.

U-500 was installed at the office building in Madrid, and the average power consumption had been reduced from 2,956.43kWh to 2,702.02kWh.

As a result, it showed **8.6%** of saving rate.

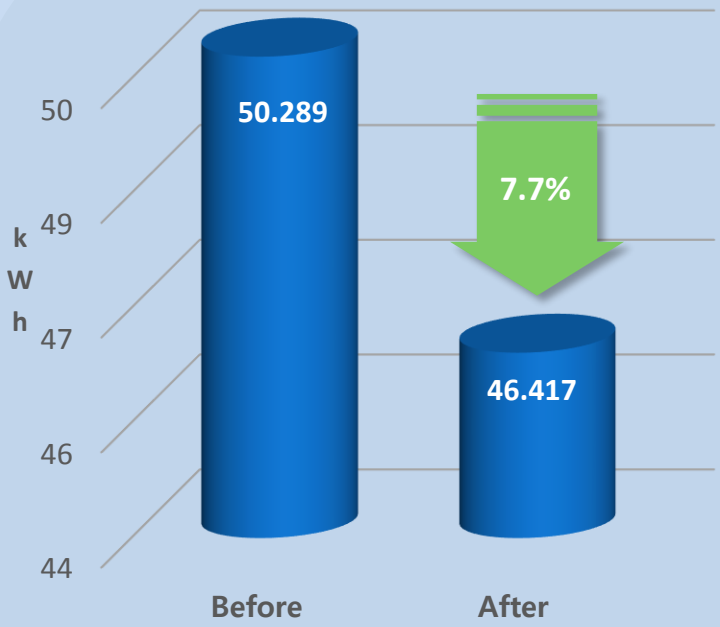


Nong-hyup

Test Overview

Load	Complex Load
Saving	7.7%
Installation Site	Bank
Country	Korea
Installation Date	2010.06.10
Model	UC-100





This case is a result of installing Ultra in Nong-hyup bank which has ATM and office machine.

UC-100 was installed at the place, and the power consumption had been reduced from 50.289kWh to 46.417kWh at the same time.

As a result,
It showed **7.7%** of saving rate.



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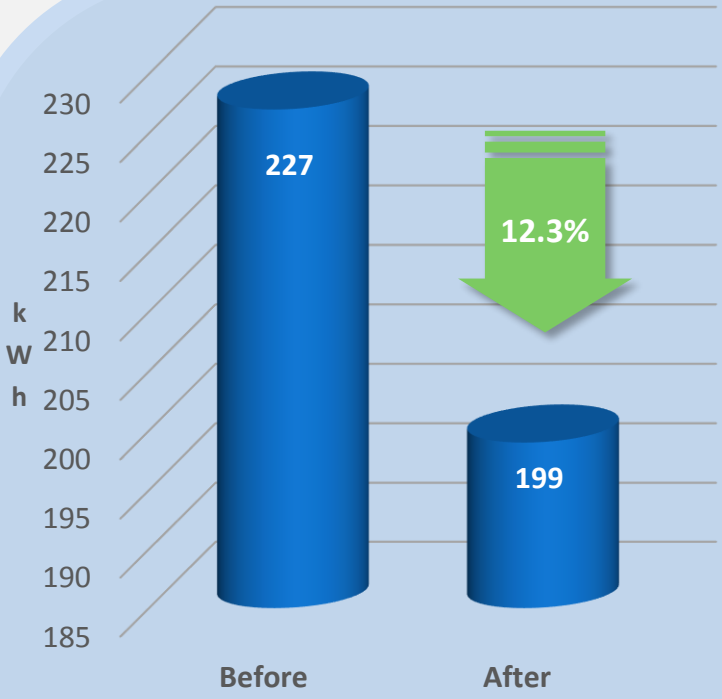
ULTRA KESECO

Seven Spots

Test Overview

Load	Complex Load
Saving	12.3%
Installation Site	Store
Country	Greece
Installation Date	2009.12.12
Model	UC-50





Seven Spots is chained store which specializes Video, DVD, X-box, and PlayStation in Greece.

UC-50 was installed at the place, and the monthly average power consumption had been reduced from 227kWh to 199kWh.

As a result,
it showed **12.3%** of saving rate.

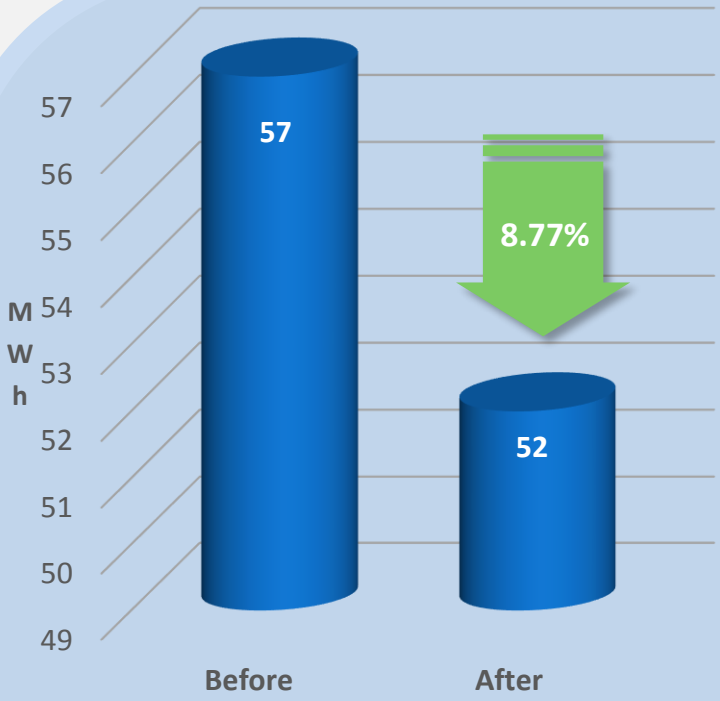


Vatana Phaisal Engineering

Test Overview

Load	Complex Load
Saving	8.77%
Installation Site	Office
Country	Thailand
Installation Date	2011.11.01
Model	UC-100, UC-200





This case is a result of installing Ultra in the main office building and engineering shop of VPE.

ULTRA were installed at the place, and the average power consumption had been reduced from 57MWh to 52MWh.

As a result,
it showed **8.77%** of saving rate.



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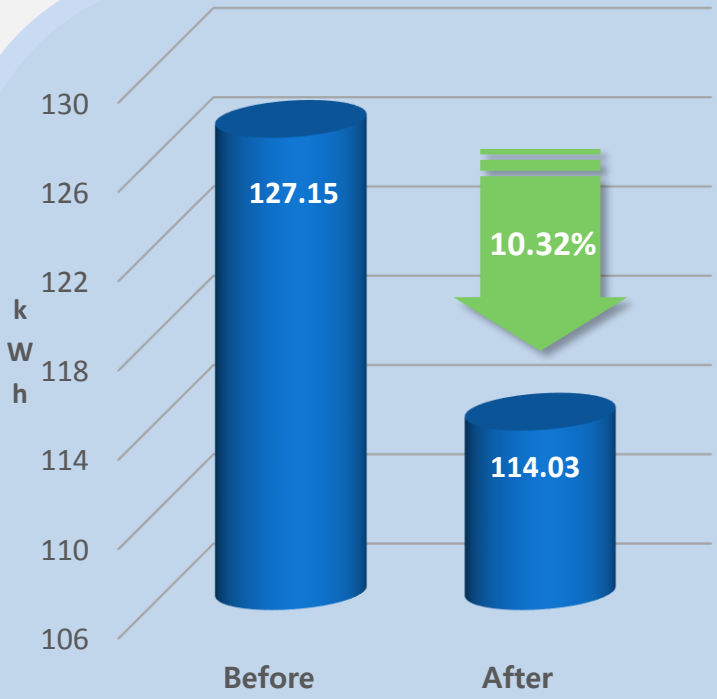
ULTRA KESECO

Base Station

Test Overview

Load	Rectifier Load
Saving	10.32%
Installation Site	Base Station
Country	Korea
Installation Date	2014.04.18
Model	UR-20





This place is base station which possesses rectifiers and repeaters, etc.

UR-20 was installed at the rectifier, and the daily average power consumption had been reduced from 127.15kWh to 114.03kWh.

As a result,
it showed **10.32%** of saving rate.

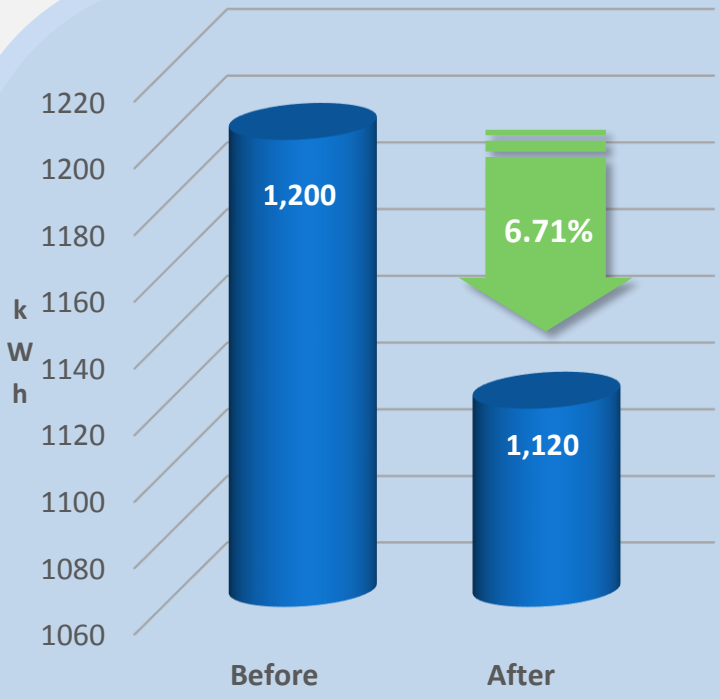


Central Square

Test Overview

Load	Resistive Load
Saving	6.71%
Installation Site	Street Light
Country	Greece
Installation Date	2011.11.18
Model	UR-20





This case is a result of installing Ultra at street light in Athens Central Square, Greece.

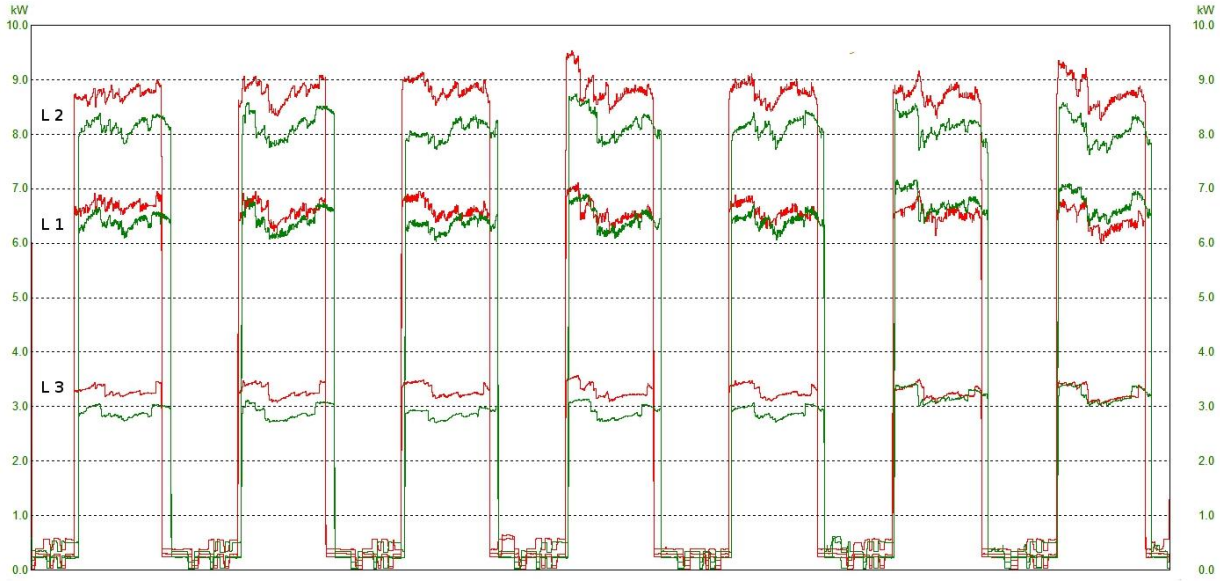
UR-20 was installed at the light, and the average power consumption had been reduced from 1,200.18kWh to 1,119.62kWh.

As a result, it showed **6.71%** of saving rate.



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< Street Light in Ahtens City >



The red line is kW in each phase L1, L 2, L 3 without Ultra and the green line is kW with ULTRA.

1. Before installation of ULTRA

➔ 1st week , data from 4 November to 10 November 2011

	Ημέρα	Ημερομηνία	V Total	A Total	kW Total	kVATotal	cosφ	kWh/ Ημέρα
Εβδομάδα 1η	Παρασκευή	4-Νοε-11	230,47	88,91	18,72	19,89	0,934	238,64
	Σάββατο	5-Νοε-11	231,07	88,22	18,65	19,77	0,937	239,35
	Κυριακή	6-Νοε-11	231,74	88,76	18,79	19,93	0,936	241,10
	Δευτέρα	7-Νοε-11	231,22	88,70	18,72	19,87	0,936	240,24
	Τρίτη	8-Νοε-11	231,01	88,19	18,65	19,77	0,937	240,86
	Τετάρτη	9-Νοε-11	230,17	87,97	18,55	19,66	0,937	239,59
	Πέμπτη	10-Νοε-11	230,51	87,30	18,44	19,53	0,939	239,73
	Μέσος όρος		**230,88**	**88,29**	**18,64**	**19,78**	**0,937**	**239,93**

➔ 2nd week , data from 11 November to 17 November 2011

	Ημέρα	Ημερομηνία	V Total	A Total	kW Total	kVATotal	cosφ	kWh Total
Εβδομάδα 2η	Παρασκευή	11-Νοε-11	230,98	89,01	18,84	19,96	0,938	240,17
	Σάββατο	12-Νοε-11	230,90	89,05	18,81	19,92	0,938	241,43
	Κυριακή	13-Νοε-11	230,65	87,79	18,61	19,60	0,943	238,86
	Δευτέρα	14-Νοε-11	229,77	87,27	18,47	19,45	0,943	237,08
	Τρίτη	15-Νοε-11	230,78	87,66	18,63	19,64	0,942	240,64
	Τετάρτη	16-Νοε-11	232,02	88,42	18,84	19,90	0,940	243,38
	Πέμπτη	17-Νοε-11	231,55	86,70	18,43	19,44	0,941	239,66
	Μέσος όρος		**230,95**	**87,99**	**18,66**	**19,70**	**0,941**	**240,18**

2. After installation of ULTRA

➔ 3rd week data from 18 November to 24 November 2011

	Ημέρα	Ημερομηνία	V Total	A Total	kW Total	kVATotal	cosφ	kWh Total
Εβδομάδα 3η	Παρασκευή	18-Νοε-11	230,55	85,64	18,20	19,17	0,942	232,07
	Σάββατο	19-Νοε-11	231,64	86,67	18,42	19,43	0,940	236,42
	Κυριακή	20-Νοε-11	231,65	86,70	18,42	19,42	0,941	236,39
	Δευτέρα	21-Νοε-11	230,52	85,55	18,21	19,18	0,942	233,74
	Τρίτη	22-Νοε-11	230,38	85,65	18,18	19,15	0,942	234,88
	Τετάρτη	23-Νοε-11	231,65	85,29	18,24	19,13	0,949	235,65
	Πέμπτη	24-Νοε-11	231,03	85,05	18,14	19,01	0,950	235,82
	Μέσος όρος		**231,06**	**85,79**	**18,26**	**19,21**	**0,944**	**235,00**

➔ 4th week data from 25 November to 1st December 2011

	Ημέρα	Ημερομηνία	V Total	A Total	kW Total	kVATotal	cosφ	kWh Total
Εβδομάδα 4η	Παρασκευή	25-Νοε-11	230,87	84,59	18,06	18,93	0,949	230,32
	Σάββατο	26-Νοε-11	230,35	84,32	17,97	18,83	0,949	230,62
	Κυριακή	27-Νοε-11	230,77	84,67	18,06	18,92	0,949	231,76
	Δευτέρα	28-Νοε-11	231,18	84,76	18,13	19,02	0,948	232,66
	Τρίτη	29-Νοε-11	231,63	85,23	18,22	19,11	0,948	235,29
	Τετάρτη	30-Νοε-11	231,55	85,09	18,21	19,10	0,948	235,20
	Πέμπτη	1-Δεκ-11	230,42	84,42	18,02	18,87	0,950	234,27
	Μέσος όρος		**230,97**	**84,73**	**18,10**	**18,97**	**0,948**	**232,87**

➔ 5th week data from 2nd December to 8 December 2011

	Ημέρα	Ημερομηνία	V Total	A Total	kW Total	kVATotal	cosφ	kWh Total
Εβδομάδα 5η	Παρασκευή	2-Δεκ-11	230,85	81,81	17,45	18,32	0,948	222,54
	Σάββατο	3-Δεκ-11	230,77	81,95	17,47	18,33	0,948	224,16
	Κυριακή	4-Δεκ-11	229,36	81,21	17,24	18,05	0,951	221,26
	Δευτέρα	5-Δεκ-11	231,64	82,60	17,62	18,50	0,947	226,07
	Τρίτη	6-Δεκ-11	230,78	81,94	17,46	18,31	0,949	225,57
	Τετάρτη	7-Δεκ-11	231,82	84,77	18,15	19,03	0,953	234,46
	Πέμπτη	8-Δεκ-11	231,70	83,79	18,03	18,80	0,956	234,35
	Μέσος όρος		**230,99**	**82,58**	**17,63**	**18,48**	**0,950**	**226,92**

3. Energy consumption comparison

➔ 1st week (without Ultra) 1200,18 kWh per week

➔ 5th week (with Ultra) 1119,62 kWh per week

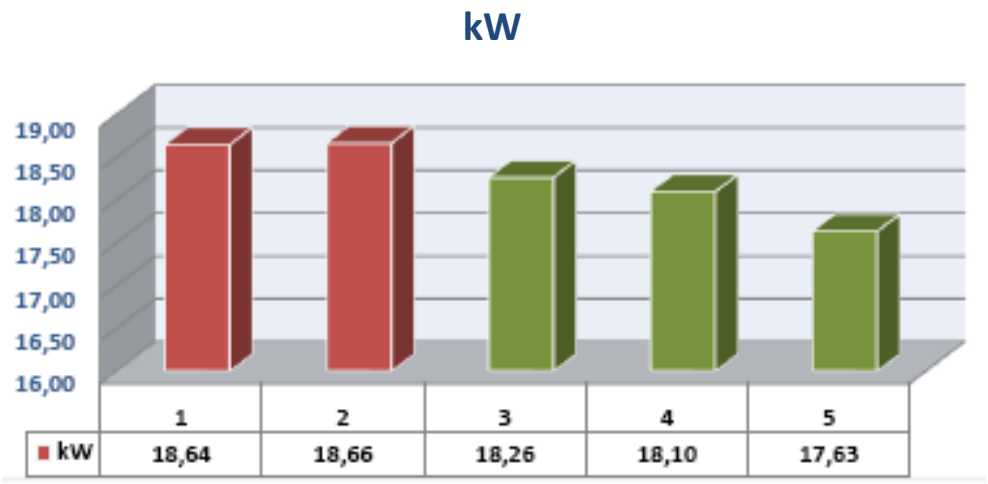
	Ημέρα	Ημερομηνία	V Total	A Total	kW Total	kVATotal	cosφ	kWh / Ημερα	kWh / Εβδομαδα
Εβδομάδα 1η	Παρασκευή	4-Νοε-11	230,47	88,91	18,72	19,89	0,934	238,64	1200,18
	Σάββατο	5-Νοε-11	231,07	88,22	18,65	19,77	0,937	239,35	
	Κυριακή	6-Νοε-11	231,74	88,76	18,79	19,93	0,936	241,10	
	Δευτέρα	7-Νοε-11	231,22	88,70	18,72	19,87	0,936	240,24	
	Τρίτη	8-Νοε-11	231,01	88,19	18,65	19,77	0,937	240,86	
	Τετάρτη	9-Νοε-11	230,17	87,97	18,56	19,66	0,937	239,59	
	Πέμπτη	10-Νοε-11	230,51	87,30	18,44	19,53	0,935	239,73	
	Μέσος όρος		231,10	88,56	18,70	19,85	0,936	240,04	

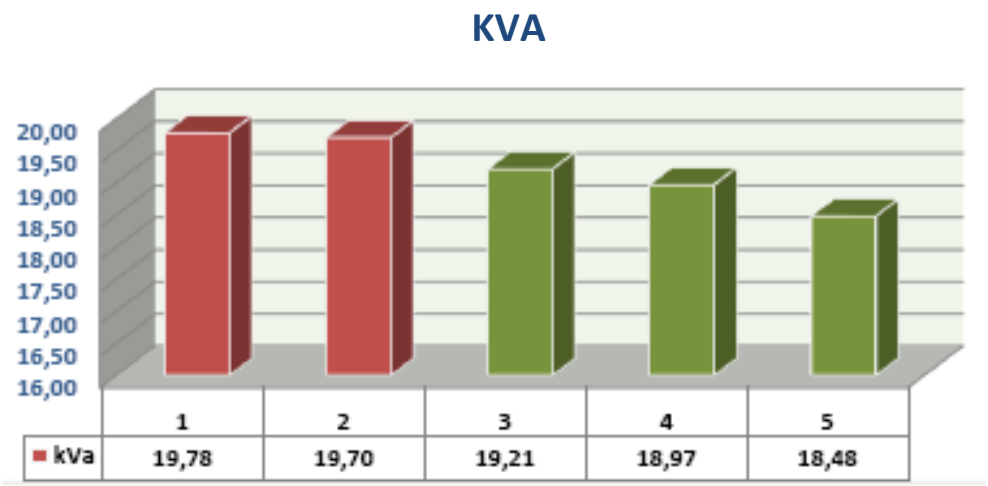
	Ημέρα	Ημερομηνία	V Total	A Total	kW Total	kVATotal	cosφ	kWh / Ημερα	kWh / Εβδομαδα
Εβδομάδα 5η	Παρασκευή	2-Δεκ-11	230,85	81,81	17,45	18,32	0,948	222,54	1119,62
	Σάββατο	3-Δεκ-11	230,77	81,95	17,47	18,33	0,948	224,16	
	Κυριακή	4-Δεκ-11	229,36	81,21	17,24	18,05	0,951	221,26	
	Δευτέρα	5-Δεκ-11	231,64	82,60	17,62	18,50	0,947	226,07	
	Τρίτη	6-Δεκ-11	230,78	81,94	17,46	18,31	0,949	225,57	
	Τετάρτη	7-Δεκ-11	231,82	84,77	18,15	19,03	0,953	234,45	
	Πέμπτη	8-Δεκ-11	231,78	83,79	18,03	18,80	0,956	234,39	
	Μέσος όρος		230,68	81,90	17,45	18,30	0,948	223,92	

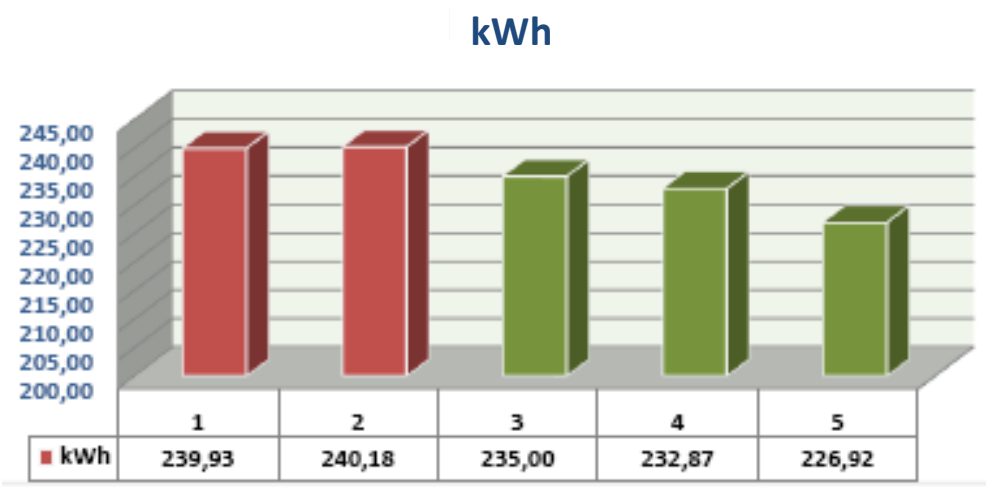
	Ημέρα	V Total	A Total	kW Total	kVATotal	cosφ	kWh	kWh Συνολο
Σύγκριση	Παρασκευή	0,17%	-7,98%	-6,74%	-7,92%	1,43%	-6,74%	-6,71%
	Σάββατο	-0,13%	-7,11%	-6,34%	-7,29%	1,18%	-6,34%	
	Κυριακή	-1,03%	-8,51%	-8,23%	-9,44%	1,50%	-8,23%	
	Δευτέρα	0,18%	-6,88%	-5,90%	-6,87%	1,19%	-5,90%	
	Τρίτη	-0,10%	-7,09%	-6,34%	-7,40%	1,28%	-6,34%	
	Συνολο	-0,18%	-7,51%	-6,71%	-7,79%	1,32%	-6,71%	

➔ **Saving rate is 6,71 %**

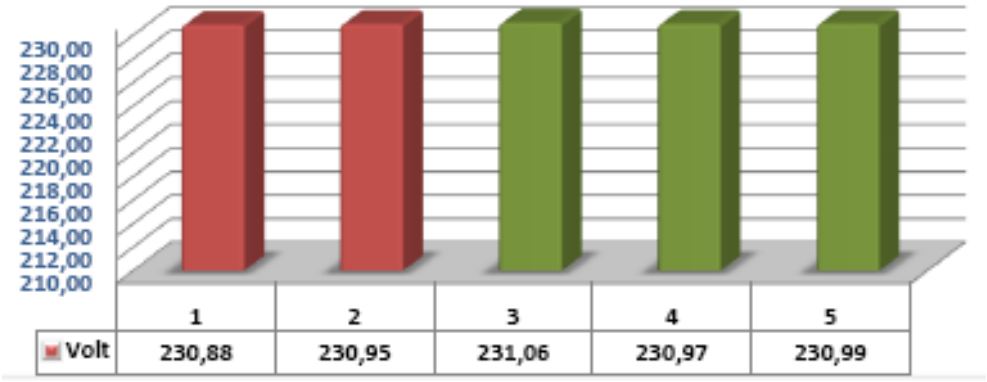
4. Graphs


kW
19,00
18,50
18,00
17,50
17,00
16,50
16,00
1
2
3
4
5
kW
18,64
18,66
18,26
18,10
17,63

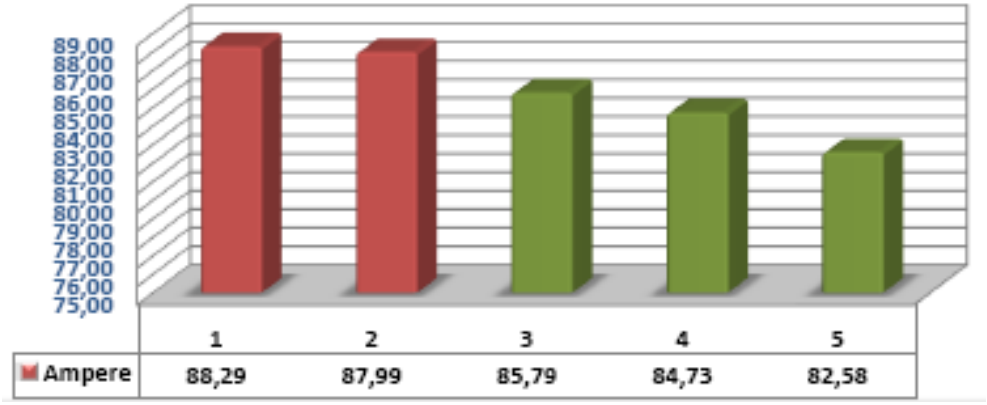

KVA
20,00
19,50
19,00
18,50
18,00
17,50
17,00
16,50
16,00
1
2
3
4
5
kVa
19,78
19,70
19,21
18,97
18,48


kWh
245,00
240,00
235,00
230,00
225,00
220,00
215,00
210,00
205,00
200,00
1
2
3
4
5
kWh
239,93
240,18
235,00
232,87
226,92

V


230,00
228,00
226,00
224,00
222,00
220,00
218,00
216,00
214,00
212,00
210,00
1
2
3
4
5
Volt
230,88
230,95
231,06
230,97
230,99

A

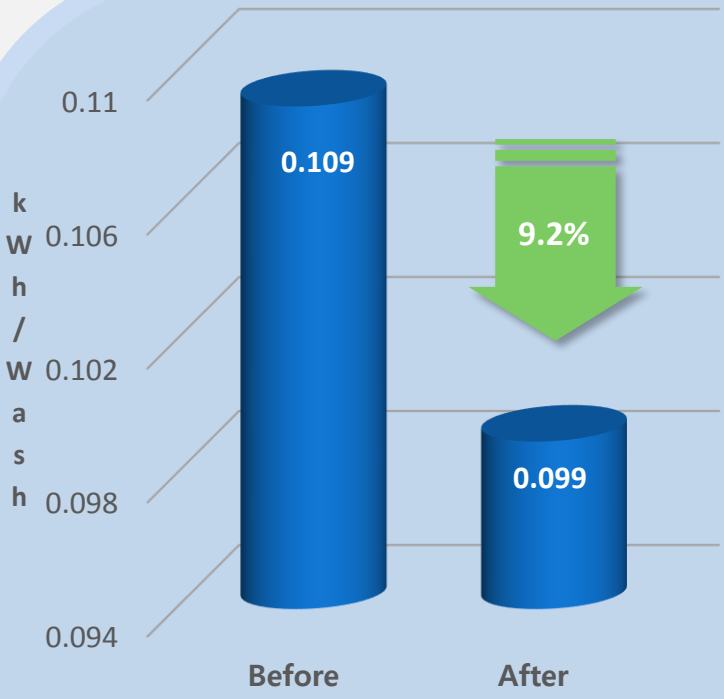

89,00
88,00
87,00
86,00
85,00
84,00
83,00
82,00
81,00
80,00
79,00
78,00
77,00
76,00
75,00
1
2
3
4
5
Ampere
88,29
87,99
85,79
84,73
82,58

Cleantopia

Test Overview

Load	Complex Load
Saving	9.2%
Installation Site	Laundry
Country	Korea
Installation Date	2013.07.24
Model	UR-30





Cleantopia is a laundry which has facilities such as washers, lamps, and hot-air furnaces.

UR-30 was installed at the place, and power consumption had been reduced from 0.109kWh/Wash to 0.099kWh/Wash.

As a result,
It showed **9.2%** of saving rate.

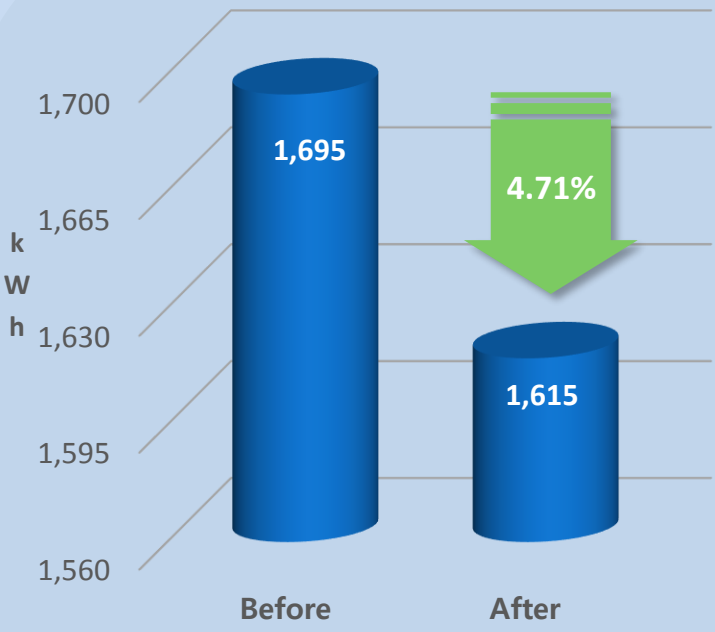


FST

Test Overview

Load	Complex Load
Saving	4.71%
Installation Site	Cooling Tower
Country	Korea
Installation Date	2014.11.22
Model	U-300





This place is a Semiconductor Equipment Manufacturing Company with Cooling tower.

U-300 was installed at the load, and the daily average power consumption had been reduced from 1,695kWh to 1,615kWh.

As a result,
it showed **4.71%** of saving rate.



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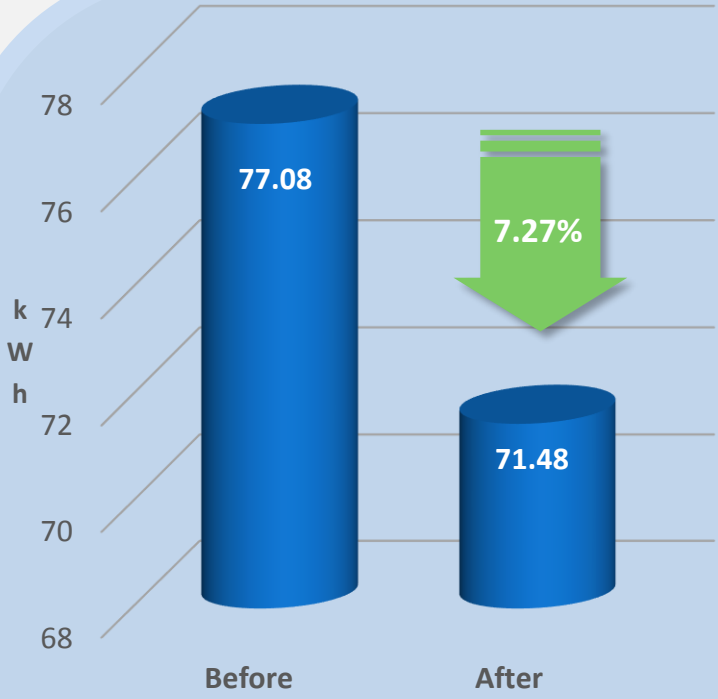
ULTRA KESECO

House

Test Overview

Load	Complex Load
Saving	7.27%
Installation Site	Residence
Country	Czech
Installation Date	2011.05.16
Model	UR-10





This case is a result of installing Ultra in a regular house in Czech Republic.

UR-10 was installed in the place, and the average power consumption had been reduced from 77.08kWh to 71.48kWh.

As a result, it showed **7.27%** of saving rate.

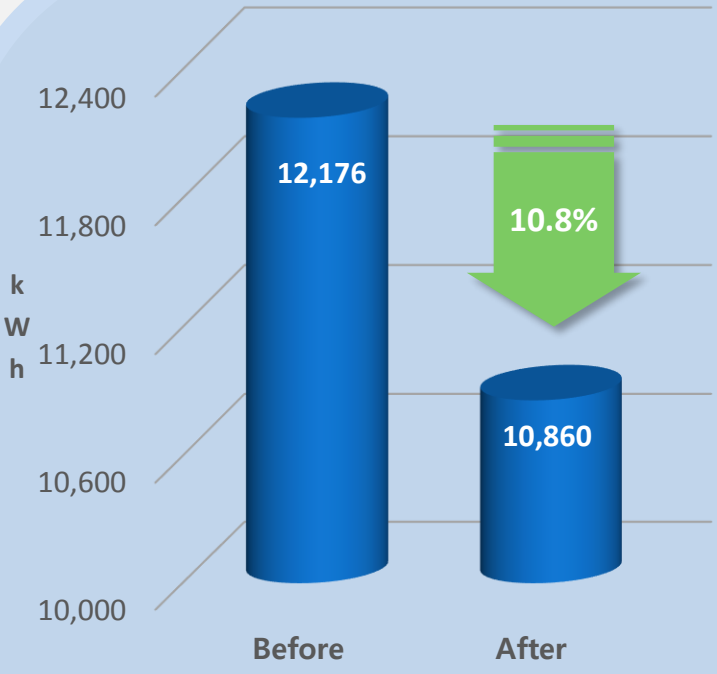


House

Test Overview

Load	Complex Load
Saving	10.8%
Installation Site	Residence
Country	Korea
Installation Date	2010.03.17
Model	UR-5





This place is a house which is used appliance such as fridge, lamp, TV, and air conditioner.

UR-5 was installed at the place, and the power consumption had been reduced from 12,176kWh to 10,860kWh.

As a result, it showed **10.8%** of saving rate.

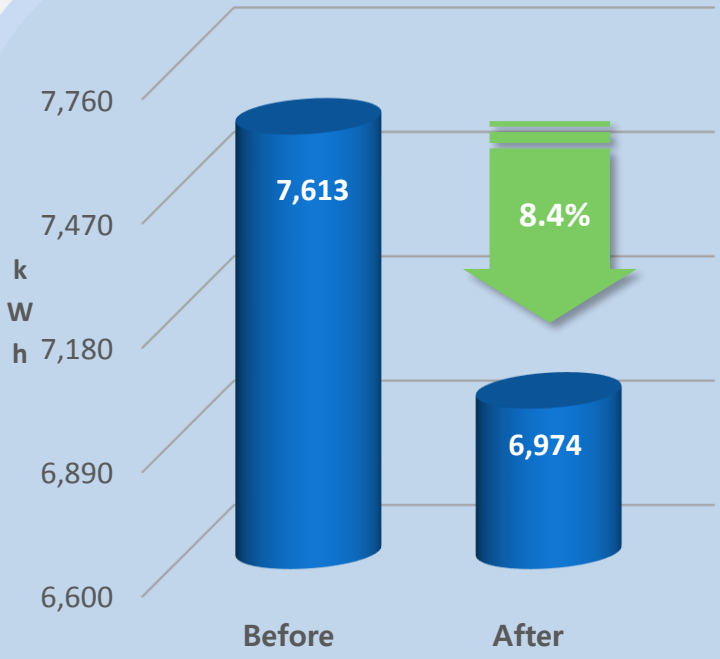


House

Test Overview

Load	Complex Load
Saving	8.4%
Installation Site	Residence
Country	Korea
Installation Date	2010.03.08
Model	UR-5





This Place is a house which has home appliances such as TV, PC, refrigerator and air conditioner.

UR-5 was installed at the place, and the power consumption had been reduced from 7,613kWh to 6,974kWh.

As a result, it showed **8.4%** of saving rate.



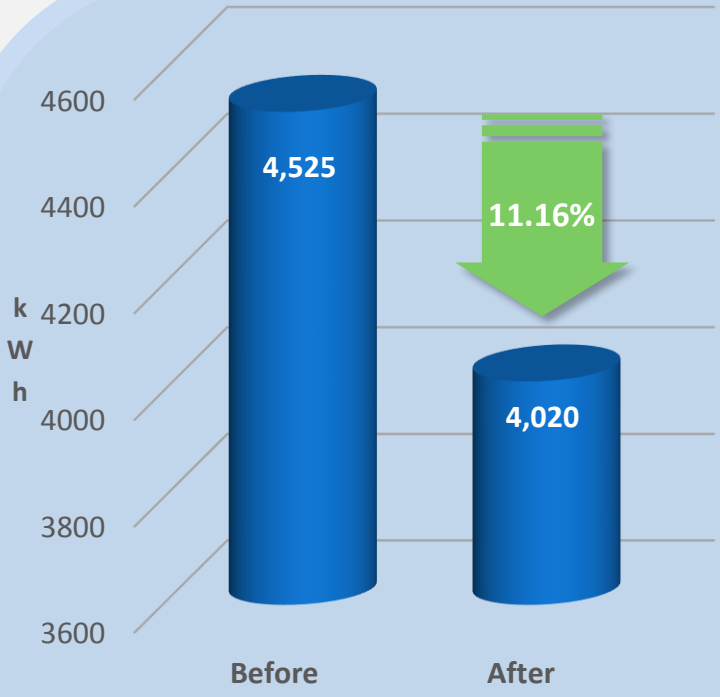
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MITERA

Test Overview

Load	Complex Load
Saving	11.16%
Installation Site	Hospital
Country	Greece
Installation Date	2009.06.17
Model	U-500





Mitera is one of the leading medical clinics in Greece established in early 1970s.

U-500 was installed in the hospital, and the daily average power consumption had been reduced from 4,525kWh to 4,020kWh.

As a result,
it showed **11.16%** of saving rate.



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MITERA CLINIC



IRAKLIO CITY - CRETA ISLAND GREECE

DATE OF ISTALLATION 17TH JUNE 2009

TYPE OF ULTRA U-500

DATA OF POWER SAVING

Before installation

Period from 14th July 2008 until 19th August 2008 – Days 35, Total consumption 158400 kWh
TOTAL COST 14.908,61 EUROS

August 2008 average per day 4525 kWh

Cost of electricity per day : 425 euros per day

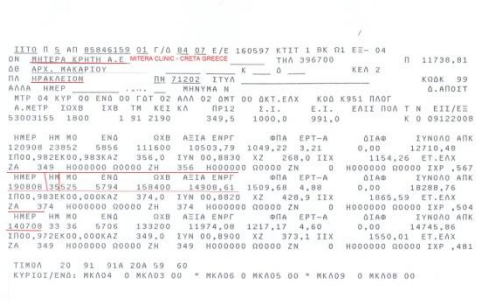
After Installation of ULTRA

Period from 9th July until 9th August 2009 – Days 30, Total consumption 120600 kWh
TOTAL COST 11.350.87 EUROS
August 2009 average per day 4020 kWh

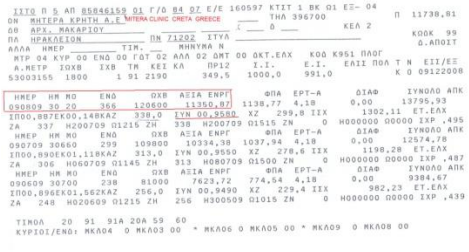
cost of electricity per day : 378 euros per day

Saving rate 12.5 %

Before installation



After installation

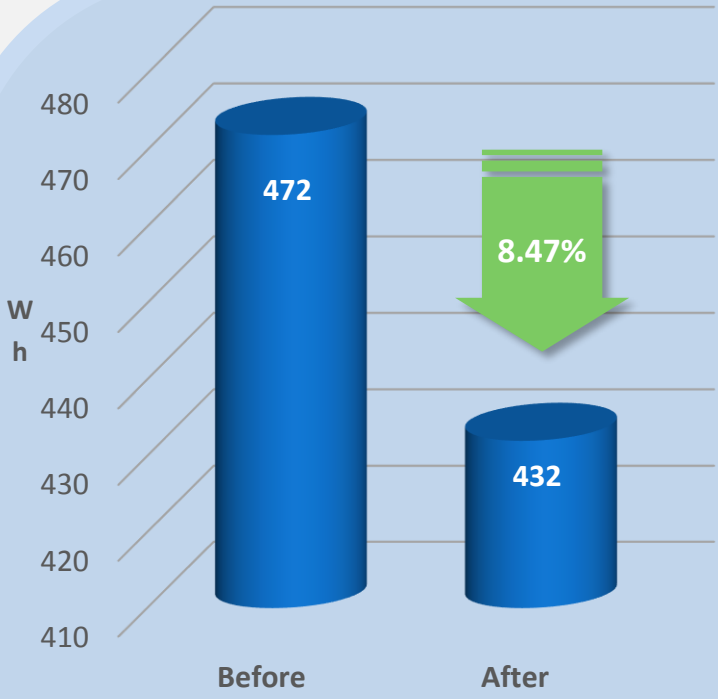


Solar House

Test Overview

Load	Complex Load
Saving	8.47%
Installation Site	Solar Panel
Country	Greece
Installation Date	2009.07.01
Model	UR-5





The house, located in Kavala, Greece, is supplied the power by Solar Panel.

UR-5 was installed into the Solar Panel, and the hourly power consumption had been reduced from 472Wh to 432Wh.

As a result, it showed **8.47%** of saving rate.



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Test Report

Ⅰ. Information of Customer	
1) Place information	: Greece, Kabbalah, philippi
2) Type of Customer	: Greece solar panel
3) Solar cell collect petal information	: 75W collect petal * 8PCS = 600W 100W collect petal * 6PCS = 600W Total: 1200W
Ⅱ. Intallation Information	
1) Date of Installation	: 2009.07.01
2) Model of ULTRA	: UR-5
Ⅲ. Test Result	
1) Before Data	
The solar cell capacity coefficient of north Greece from July to August (The duration of sunshine)	: 6.3
The electric power volume of the solar cell petal	: 1200W * 6.3 = 7560W/day
The amount of time used electric power Before installated Ultra	: 16 hours
The usage of electric power per 1hour	: 7560W / 16h = 472Wh
2) After Data	
The amount of time used electric power after installed Ultra	: 17.5 hours
The usage of electric power per 1 hour	: 7560W / 17.5h = 432Wh
calculation of power saving rate	: [(472-432)/472] x 100 = 8.47%
V. Result	
Power Saving Rate	**: 8.47 %**









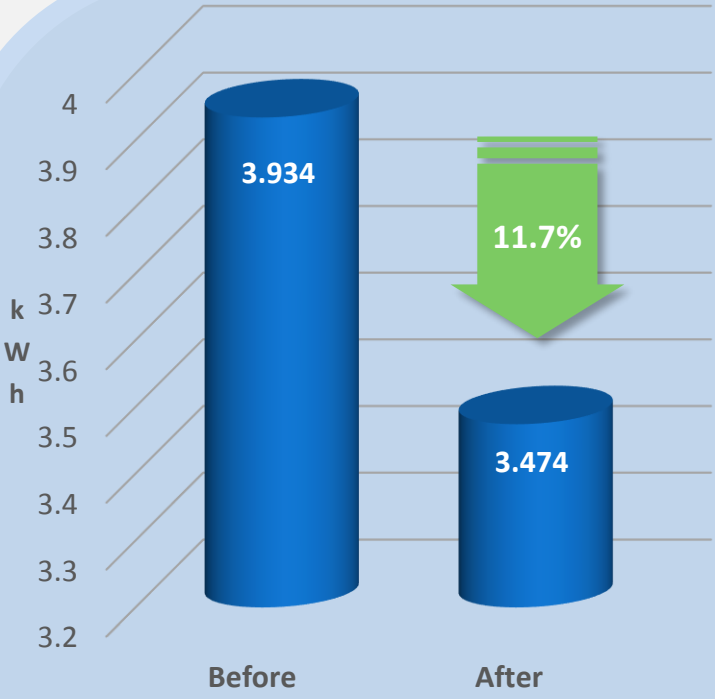


Vending Machine

Test Overview

Load	Complex Load
Saving	11.7%
Installation Site	Vending Machine
Country	Japan
Installation Date	2007.10.06
Model	UM-1





This case is a result of installing Ultra into a beer vending machine in Osaka, Japan.

UM-1 was installed in the vending machine, and the average power consumption had been reduced from 3.934kWh to 3.474kWh

As a result, it showed **11.7%** of saving rate.



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"Test report with beer vending machine"(Japan)

1. Installation address : OSAKASI HIRANOKU DETO 4CHOME 3BAN , JAPAN

2. Installation date : 1st Oct 2007 ~15th Oct 2007

(Installation : 6th Oct 2007)

3. Analyzer : hioki 3168 - grampon power

▶ Analyzer Setting

TESTER ID(Ver 1.11)	1
COMMENT	
WIRE	1P2W
FREQ.	60
PT	1
CT	1
INTERVAL	30 minute
RNG	10A

4. Model of ULTRA : ULTRA U-804(1kva) one unit

5. Measuring method :

1) Measured following article every 30min . after installing analyzer.

DATE , TIME , Etime , U1_AVE(V) , I1_AVE(A) , P_AVE(W) , WP+(Wh) , WP_(Wh) , St , PF_AVE

2) Tested and compared with (WP+(Wh)) as below among article above.

① Daily Comparison

(Compared same weekday which was measured for 24 hours for fairness)

② Total measing time(same condition) comparison

(Sum of total accumulated KWH which was suggested on ①)

6. Measuring Data

1) Measuring Data before installation

① Measuring time : 01 Oct 2007 ~ 06 Oct 2007 (Total : 117hours 14min.)

② Daily measuring data

Date	Day	Consumption(Wh)	Measuring time (Hour)
01-Oct	Mon	1,550.80	7'30"
02-Oct	Tue	3,828.09	24.00
03-Oct	Wed	4,003.02	24.00
04-Oct	Thu	4,118.80	24.00
05-Oct	Fri	3,786.80	24.00
06-Oct	Sat	1,796.80	13'44"

2) Installation ULTRA : Installed at 13:35 on 6th Oct 2007

(Installed ULTRA after making as Plug type for saving time)

3) Measuring Data after installation

① Measuring time : 06 Oct 2007 ~ 15 Oct 2007(Total 218 hours)

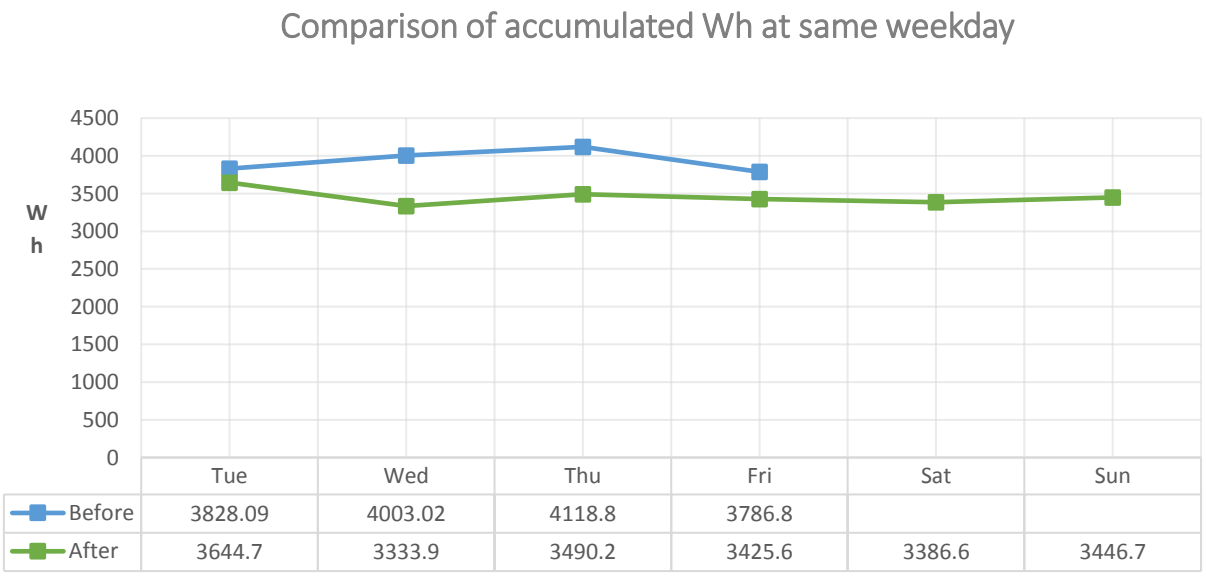
② Daily measuring data

Date	Day	Consumption (Wh)	Measuring time (Hour)
06-Oct	Sat	1,692.17	10.00
07-Oct	Sun	4,087.53	24.00
08-Oct	Mon	4,155.00	24.00
09-Oct	Tue	3,644.70	24.00
10-Oct	Wed	3,333.90	24.00
11-Oct	Thu	3,490.20	24.00
12-Oct	Fri	3,425.60	24.00
13-Oct	Sat	3,386.60	24.00
14-Oct	Sun	3,446.70	24.00
15-Oct	Mon	1,918.20	16.00

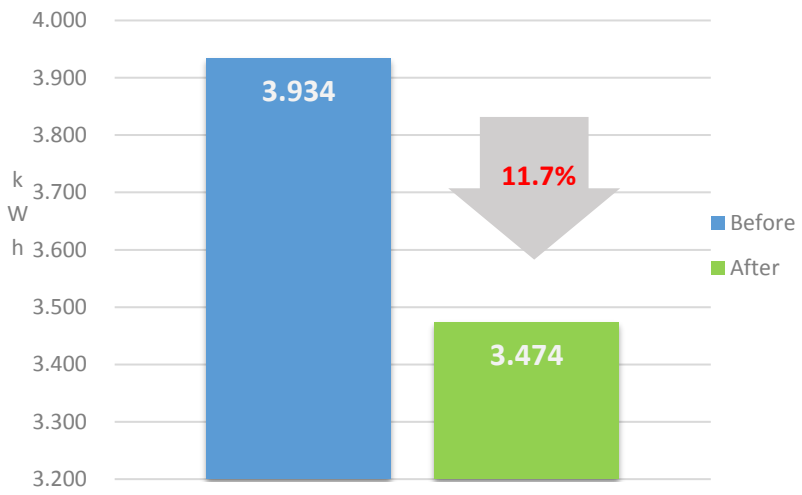
7. Result

1) Daily unit comparison (Marked same weekday and data for 24 hours)

Day	Wh before inst.	Wh after inst.	DIFF
Mon			
Tue	3,828.09	3,644.70	**-4.79%**
Wed	4,003.02	3,333.90	**-16.72%**
Thu	4,118.80	3,490.20	**-15.26%**
Fri	3,786.80	3,425.60	**-9.54%**
Sat		3,386.60	
Sun		3,446.70	



2) Total test time comparison(Applicated time as the time before installation)



Article	Accumulated (kWh)
Before	3.934
After	3.474
DIFF	**11.7%**

8. Refference picture : OSAKASI HIRANOKU DETO 4CHOME 3BAN , JAPAN

1) Model of power saver (UM-1 : 1KVA)



2) Test place and machine

① Place : OSAKASI HIRANOKU DETO 4CHOME 3BAN , JAPAN

② Machine : Beer Vending machine



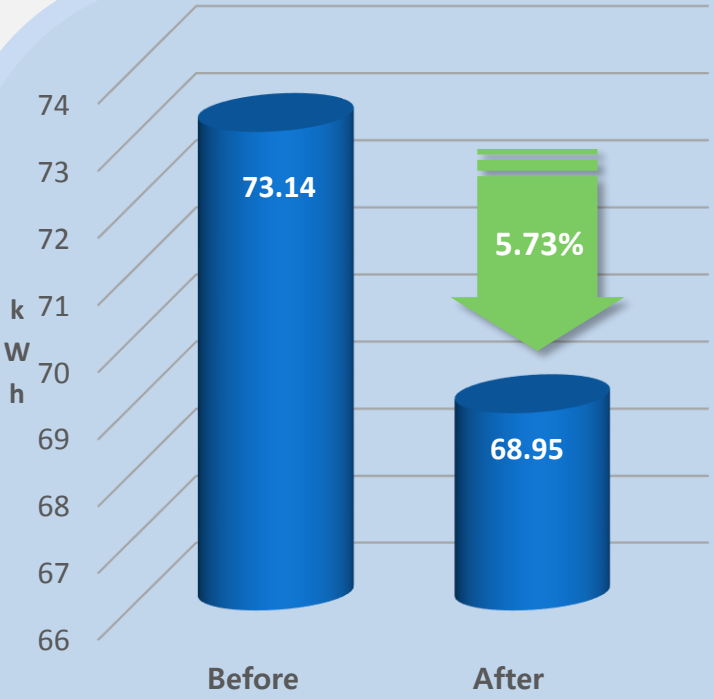


Air Conditioner Test

Test Overview

Load	Inductive Load
Saving	5.73%
Installation Site	Air Conditioner
Country	Korea
Installation Date	2014.04.18
Model	UR-10 (2)





This place is base station which possesses air conditioners, rectifiers and etc.

UR-10 was installed at A/C system, and the daily average power consumption had been reduced from 73.14kWh to 68.95kWh.

As a result, it showed **5.73%** of saving rate.



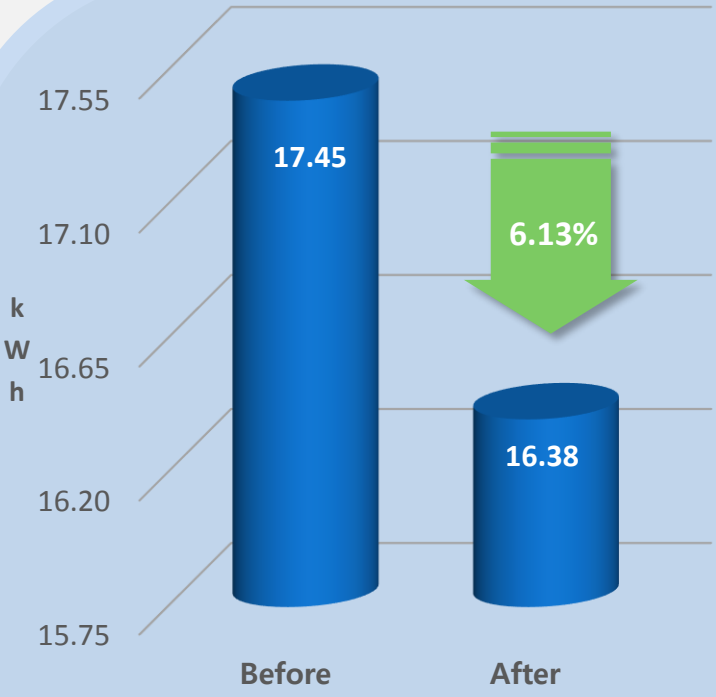
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Air Conditioner Test

Test Overview

Load	Inductive Load
Saving	6.13%
Installation Site	Air Conditioner
Country	China
Installation Date	2009.08.05
Model	UR-10 (4), UC-100





This case is a result of installing ULTRA at air conditioners in the base station.

ULTRA were installed at the air conditioners, and the average consumption from 17.45kWh to 16.38kWh.

As a result,
It showed **6.13%** of saving rate.

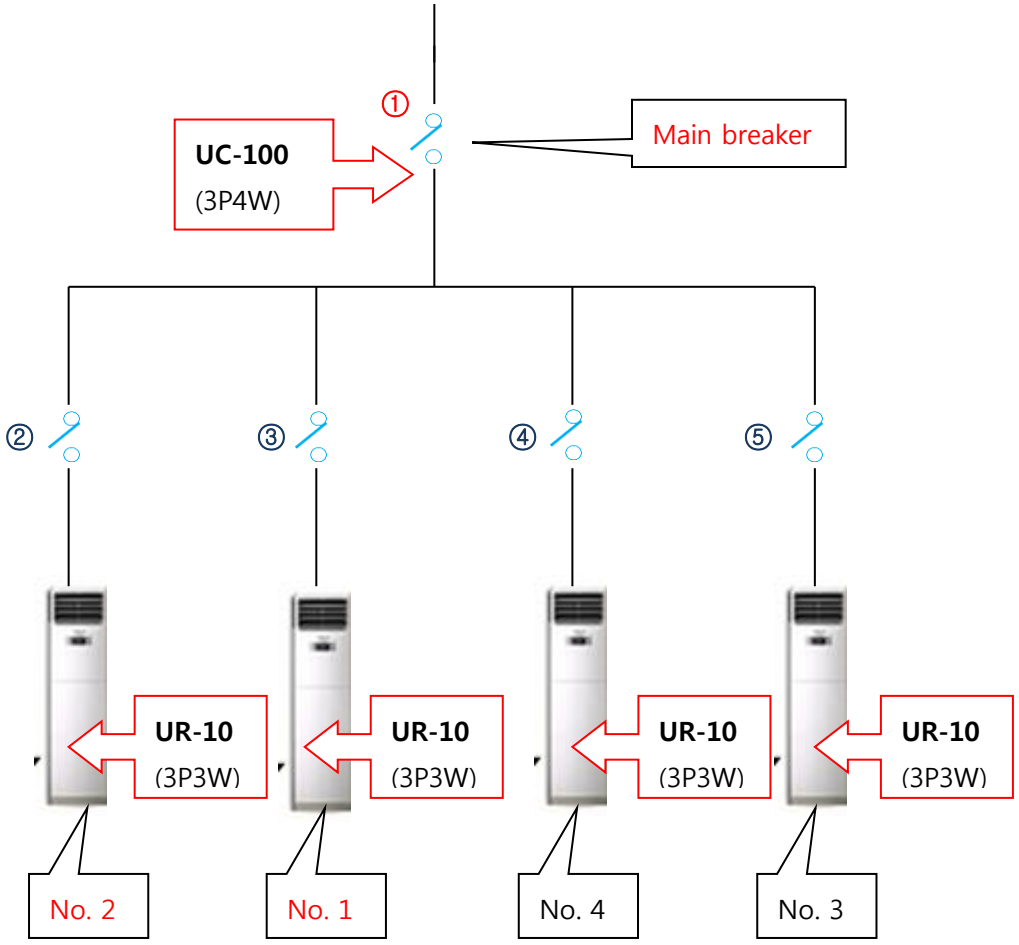


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< Air Conditioner Test Report >

1. The outline of power saving device

1) The test date : 5th August 2009
2) The test place : Unicom communication equipment located in Harbin, China
3) The environment of installation



4) The name of model:

Place	Model	Capacity(KVA)	Phase	Note
①	UC-100	100	3P4W	Install at the 2nd main circuit breaker
②③④⑤	UR-10	10	3P3W	Install at air-conditioning control

5) The way of test
   ① Install 100KVA at the 2nd main circuit breaker and install 10 KVA at the same air conditioner 4 units.
   ② Record daily data through watt hour meter installed air conditioner No.1 and No.2.
   ③ Compare and analysis amount of power consumption before and after installation at the same situation.

6) The attendant
- Wang Xiao Mei (V.G.Manager) from Hansin and three other people
- Director Daniel, Lee and Ashley, Park from KESECO

2. The process of the test

1) preparation for the test (common detail before and after installation)
① Set up the same temperature of air conditioner No.1 and No.2 before and after installation.
② Check the temperature of a room

2) Installation Ultra
Dispersive Installation like above the circuit diagram
* Picture of installation at Main Power Distribution Cabinet

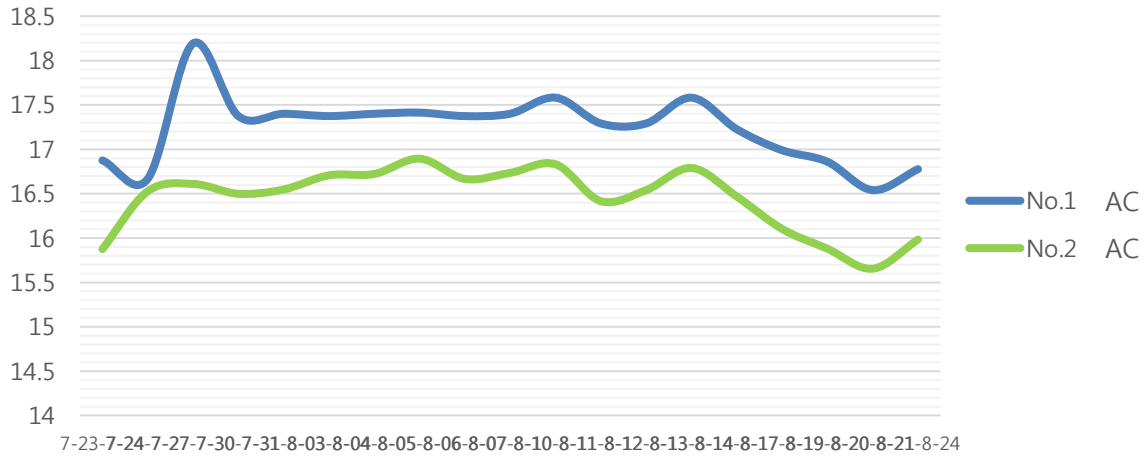
Without Ultra.	With Ultra.
	 

* The picture of the installation of internal circuit breaker inside air conditioner 4 units at the same place

Without Ultra.	With Ultra.
	

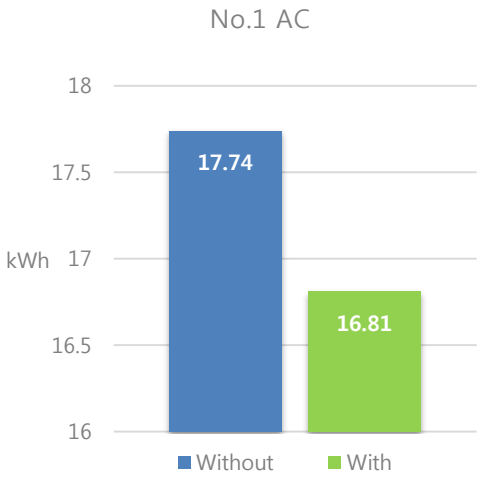
3. The result of test

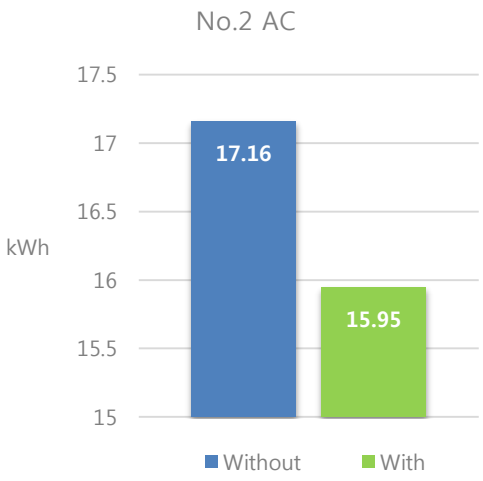
- The data before installation: 23th July ~ 4th August
- The date of installation: 5th August
- Adaptation Time : 5th August ~ 15th August (about 10 days)
- The data after installation : 16th August ~ 24th August



	The average data before installation(kWh)	The average data after installation(kWh)	Power saving rate(%)
No.1 air conditioner	17.74	16.81	**5.24%**
No.2 air conditioner	17.16	15.95	**7.05%**
Average power saving rate			6.13%

$$\text{Power saving rate}=\frac{(\text{the average data before installation})-(\text{the average data after installation})}{\text{the average data before installation}}\text{ X }100$$





4. Conclusion

- Due to the nature of the product, performance as a power saver clearly appears at the place with the fluctuation of load (air conditioner). But this test environment was not built properly.

- If you adjust the setting temperature like an actual air conditioner operation, you can check the right power saving rate with the air conditioner which works repeatedly on and off.

-But, the environment of operating room was the form of continuous work without the fluctuation of air conditioner. So, the test was conducted in condition of working on steady-state.

- In this test, it is shown the average power saving rate is 6.13% in the form of continuous work without the fluctuation of load.

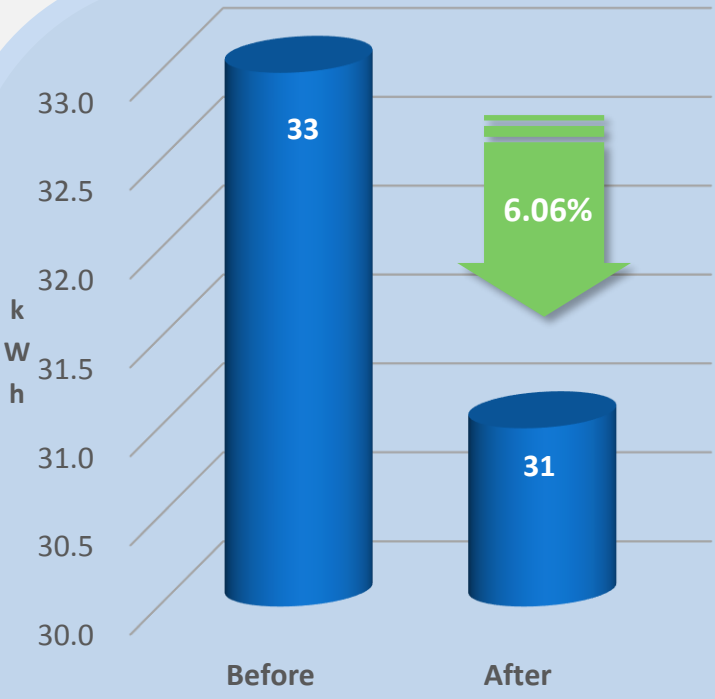
- If it is tested Ultra on air conditioner with the fluctuation of the load, it will be shown more than 8% of power saving rate.

Compressor Test

Test Overview

Load	Inductive Load
Saving	6.06%
Installation Site	Compressor
Country	Spain
Installation Date	2010.04.01
Model	UR-30





This case is a result of installing ULTRA at an air compressor running by generator.

UR-30 was installed at the air compressor, and the power consumption had been reduced from 33kWh to 31kWh.

As a result,
it showed **6.06%** of saving rate.



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FAX: *+34 – (968) 187 649.*
e-Mail: *contact@mondoelectric.com*

Informe Technico – Prueba aparato Ultra 30KVA

Lugar y Fecha: Taller Mecanico de Himoinsa de 30/03/2010 a 07/04/2010
Participantes: Pedro Jesus Fructuoso, Nicolas Birsan
Informe remitido a: **Himoinsa** - Manuel Sanchez, Massimo Brotto, Pedro Jesus Fructuoso;
Ultra Energy World - Luis Gutierez, Alvaro Gemperle, Maria Dolores Sanchez

CLIENTE:
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30730 SAN JAVIER (Murcia) ESPAÑA
Tel. +34 968 19 11 28; Fax +34 968 19 11 77
info@himoinsa.com

1. Alcance de la prueba:

Comprobacion basica de las prestaciones de un aparato Ultra U-304 conectado a un grupo electrogeno de Himoinsa, y assesorar la viabilidad de ofrecerlo como accesorio para estabilizar la red, mejorar el rendimiento de las maquinas y rebajar el consumo de carburante.

2. Equipos y Aparatos empleado:

- Grupo electrogeno Himoinsa: HYW-35-T5 (Potencia Max. 25kW(32kVA), 400Vtrifasico/240Vmonofasico-50Hz)
- Banco de Carga: Froment Proofloader (Trifasico, Carga max. 32kW/400V/50Hz/cosφ=1)
- Compresores aire (3): ABAC 100 (Pot. Max. 2HP, 220V/50Hz Monofasico)
- Aparato Ultra: U-304 3P3W (Pot. Max. 30 kVA/22,5 kW, max. 38A; 3P; 110 – 600 Vac)

3. Descripcion de la prueba:

1. **Condiciones generales**:
   - Grupo electrogeno pre-calentado
   - Compresores de aire totalmente vacios
   - Salida de aire de cada compresor regulada a un caudal fijo
   - Durante el primer minuto de arrancar el grupo se aplica primero la carga del banco y despues de los compresores
   - La carga del banco es constante, los compresores arrancan y parran por su proprio systema de control de presion

2. **Medicion de referencia - 2 horas**. El total de los kilowatios generado durante las 2 horas se ha medido tomando las lecturas de la central del grupo; el consumo de carburante se ha calculado pesado el deposito externo de combustible antes y despues de la prueba. La carga suministrada al grupo ha sido la siguente:
   - Carga Constante: 15kW/400V/cosφ=1
   - Carga Variable por fase (L1,L2,L3): 1.5kW/240V/cosφ(L1=1, L2=0.98, L3=1, Total=0.99)

3. **Medicion con Ultra U-304 - 2 horas**. El total de los kilowatios generado y consumo de carburante se han tomado de la misma manera. La carga suministrada al grupo ha sido la siguente:
   - Carga Constante banco de carga: 15kW/400V/cosφ=1
   - Carga Variable 3 compresores/1 por fase (L1,L2,L3): 1.5kW/240V/cosφ(L1=1, L2=0.98, L3=1, Total=0.99)
   - Ultra U-304 conectado a la salida del grupo en L1/L2/L3





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4. **Medicion con Ultra U-304 - 9 horas**. El total de los kilowatios generado y consumo de carburante se han tomado de la misma manera. La carga suministrada al grupo ha sido la siguente:
   - Carga Constante banco de carga: 18kW/400V/cosφ=1
   - Carga Variable un compresor trifasico: 5.5kW/380V/cosφ = 0.99
   - Ultra U-304 conectado a la salida del grupo en L1/L2/L3





4. Resultado de la prueba:

El resultado de las mediciones y las lecturas de la centralita de control del grupo son los siguentes:

Prueba 2 horas sin/con Ultra	Referencia			Ultra			Ultra - Ref.		
	Start	End	Total	Start	End	Total	Variation		% Gain
Peso Combustible (kg)	20.59	12.84	7.75	12.84	5.56	7.28	-0.47	kg	6.0645
Lectura Genset (kWh)	54	87	33	87	118	31	-2	kWh	6.0606
Consumo especifico (g/kWh)			0.23485			0.23484			
Lectura central del grupo	**V**	**A**	**P**	**V**	**A**	**P**	**V**	**A**	**P**
Banco de carga solo (cosφ=1)	399	22	15kW	399	21	14-15kW	0	-1	-1kW
Carga max. 1 Fase (cosφ=1)	399	28	19kW	400	27	18kW	1	-1	-1kW
Carga max. 2 Fase (cosφ=0.98)	398	31	20kVA	399	29	18/19kV	1	-2	-1-2kVA
Carga max. 3 Fase (cosφ=1)	401	29	2kVAR	401	27	A	0	-2	0kVAR

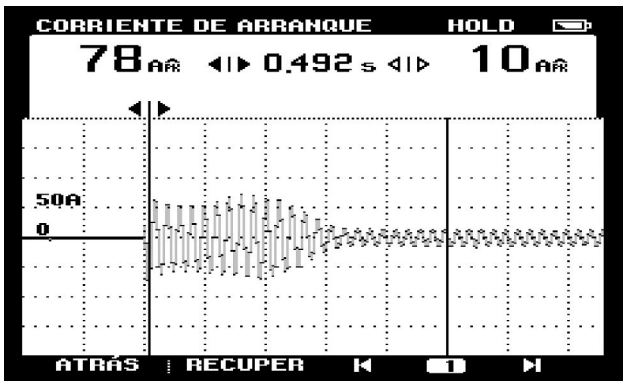
1. La carga electrica utilizada ha sido casi pura resistiva (**cosφ=0,99 ~ 1**). Aun asi, durante la primera hora de la instalacion del Ultra, se ha notado una **estabilizacion del Voltage y Amperage** del grupo en la pantalla del banco de carga.
2. Despues de unos 45 minutos de prueba y con los compresores parado, la lectura de carga instantanea en la pantalla del grupo empieso a bajar de 15kW a 14kW, aun que la pantalla del banco estava mostrando siempre 15kW. Al final de la prueba, la carga instantanea era de 14kW en la pantalla del grupo y 15kW en la pantalla del banco de prueba.
3. Al final de la prueba, la carga instantanea con todos los consumidores arrancado era entre 18kVA y 19 kVA, que significa una **reduccion del consumo electrico instantaneo** entre **5 y 10 %.**
4. Durante las 2 horas de prueba se han generado 2kWh menos (**una reduccion media de - 6%**) en frente con la medicion de referencia sin Ultra. La reduccion del consumo electrico esta confirmada por la reduccion del consumo de gasoil, tambien **de - 6%.** La segunda prueba con una duracion de 9 horas, como especificado en paragrafo 3.4, confirma la **reduccion del consumo electrico y gasoil notado anteriormente (en media de – 6%).**
5. La intensidad maxima (peak-to-peak por fase) del corriente de arranque del compresor entre el principio y el fin de la prueba ha bajado de **78A_{pk} sin** Ultra a **66A_{pk} con** Ultra, lo que coresponde a un porcetage **de - 15%** (imagenes abajo).

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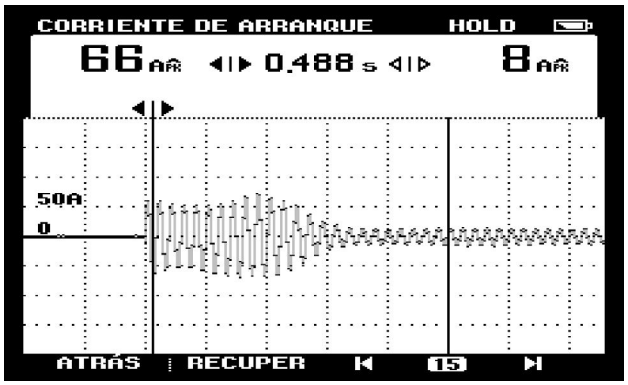
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Calle de las Camelias 5
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e-Mail: *contact@mondoelectric.com*

Intensidad del corriente de arranque del compresor



Corriente de Arranque sin Ultra



Corriente de Arranque con Ultra

Conclusiones:

- La coneccion del Ultra a la salida del grupo electrogeno determina una estabilizacion del Voltage y Amperage de la red.
- En el caso de una carga electrica resistiva (cosφ ~ 1), la coneccion del Ultra resulta en una reduccion del consumo electrico (y de gasoil) en media de - 6%.
- La intensidad maxima del corriente de arranque del motor electrico (peak-to-peak) ha bajado un - 15%, tras la instalacion del Ultra.

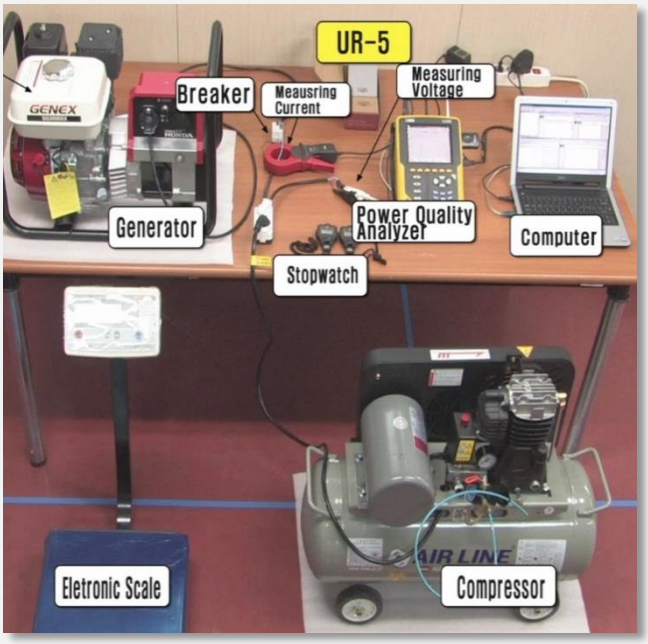
Emitido en San Javier, Murcia a 17/05/2010

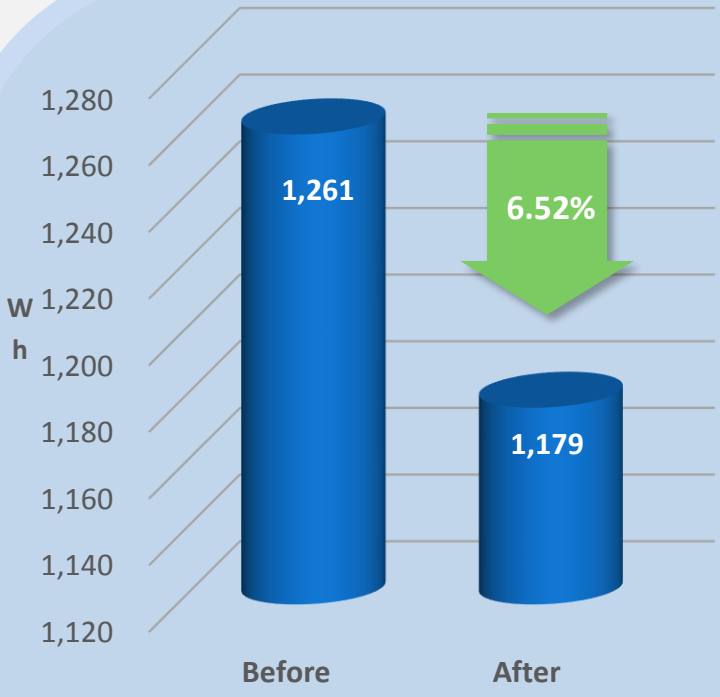
Himoinsa SL **Mondoel International SL**
Ing. Nicolas Birsan

Compressor Test

Test Overview

Load	Inductive Load
Saving	6.52%
Installation Site	Compressor
Country	Korea
Installation Date	2011.03.13
Model	UR-5





This case is a result of installing ULTRA at an air compressor running by generator.

UR-5 was installed at the air compressor, and the average power consumption had been reduced from 1261Wh to 1179Wh.

As a result,
it showed **6.52%** of saving rate.

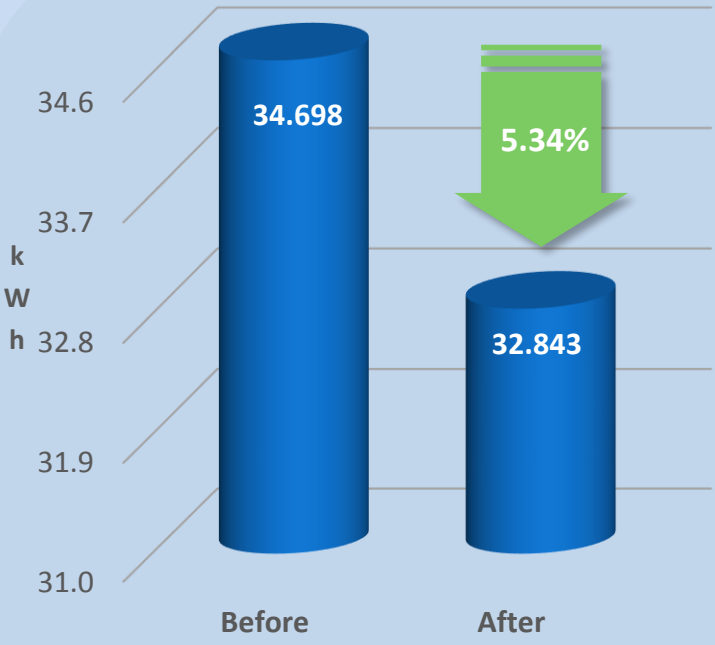


Freezing Machine Test

Test Overview

Load	Inductive Load
Saving	5.34%
Installation Site	Freezing Machine
Country	Korea
Installation Date	2012.07.27
Model	UC-100





This case is a result of installing ULTRA at a freezing machine.

UC-100 was installed at the freezing machine, and the power consumption had been reduced from 34.698kWh to 32.843kWh on an hourly basis.

As a result,
it showed **5.34%** of saving rate.



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ULTRA KESECO

< Freezing Machine Test >

1. Testing site information

Classification	72 hours (Operating Period)		
	Start	End	Period
NO ULTRA	2012.05.27(Sun)	2012.07.25(Wed)	29days
Adjustment period	2012.08.07(Tue)	2012.08.20(Mon)	14days
ULTRA	2012.08.22(Wed)	2012.10.23(Tue)	20days

Classification	Total Time (Operating Period)		
	Start	End	Period
NO ULTRA	2012.05.26(Sat)	2012.07.26(Thu)	59days
Adjustment period	2012.08.07(Tue)	2012.08.20(Mon)	14days
ULTRA	2012.08.21(Tue)	2012.10.25(Thur)	57days

Load	Freezing Machine No.1-5
Load Capacity	35kW * Five Models = 175kW
Measurement Method	CHAUVIN ARNOUX CA8334 - interval One Minute
Installed Model	UC-100 (One Model)
Installation Date	2012.07.27(Fri)
Analysis	Comparison of 72 hours and Total Operating Time

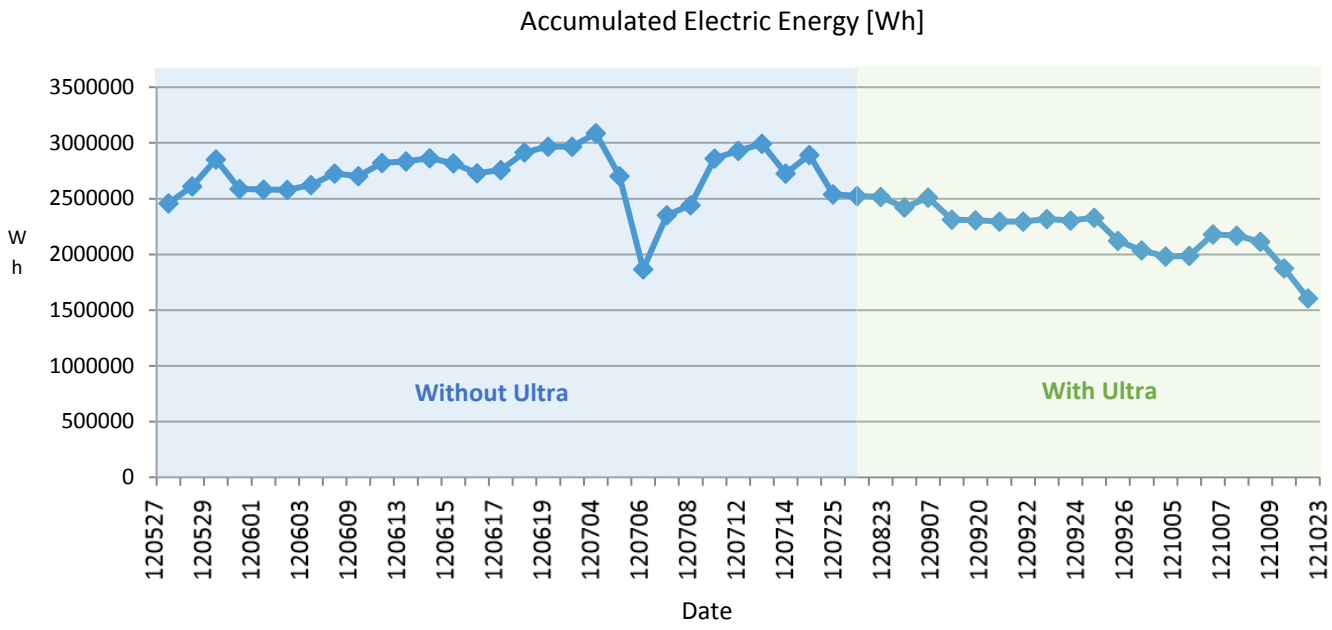
2. Measurement result of Electric Power Analyzer

Classification	72 hours (Operating Period)
	Average Accumulated Electric Energy[Wh]
Without ULTRA	2716166.9
With ULTRA	2209872.6
Saving Rate	**18.64%**

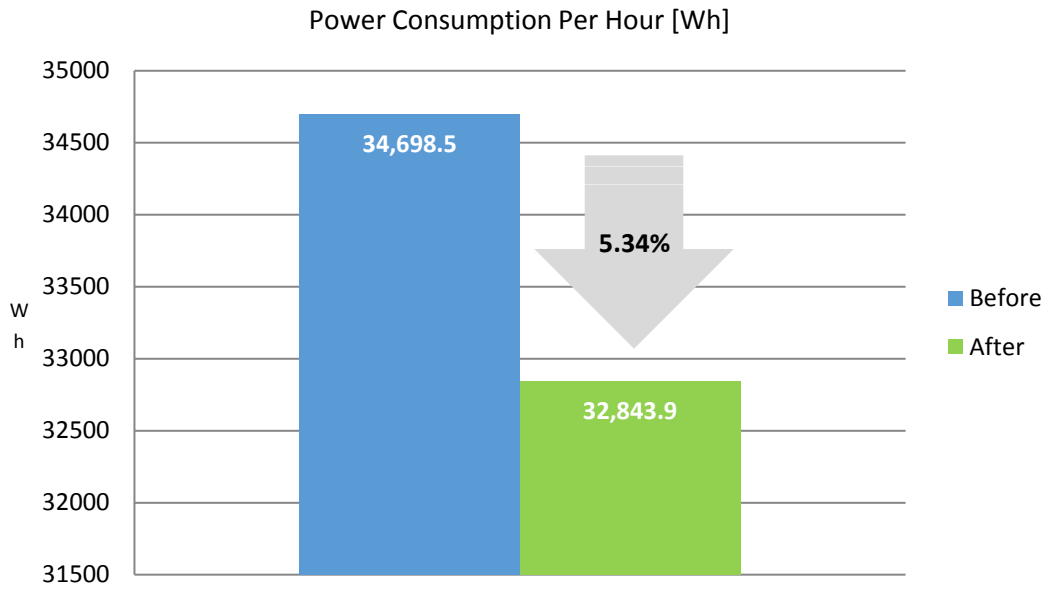
Classification	Total Time (Operating Period)		
	Total Accumulated Electric Energy[Wh]	Freezing Machine Operating Period	Electric Energy per hour [Wh]
Without ULTRA	121548702.3	3503	34698.5
With ULTRA	112556206.1	3427	32843.9
Saving Rate	–	–	**5.34%**

3. Before and After Installation Graph

1) 72 hours (Operation Period)



2) Total Time (Operation Period)



4. Result

1) Before and After, **Comparison of 72 hours and Total Operation Time**

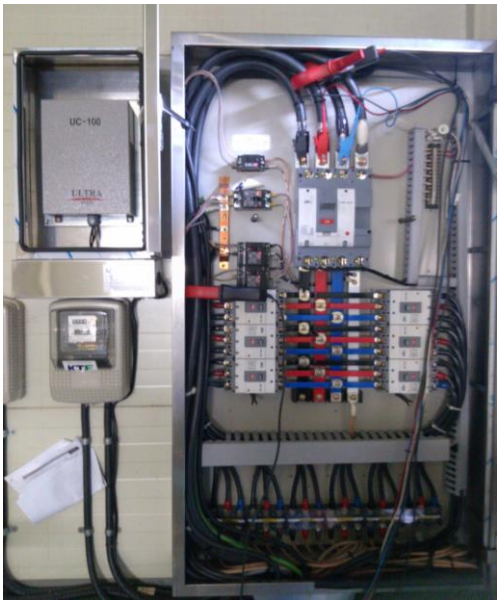
2) For objective verification we used 72 hours of operation period as a sample and compared No ULTRA to with ULTRA, the result shows 18.64% decrease in Accumulated Electric Energy.

3) **Additionally, we divided 'Accumulated Electric Energy during the testing period' and 'Total Operating Period' and compared 'Electric Energy per hour' of those two, we got the result which shows 5.34% decrease of 'Electric Energy per hour'**

4) **ULTRA** derived normal electric power saving effect in Inductive Load(Freezing Machine).

5. Installation Photo



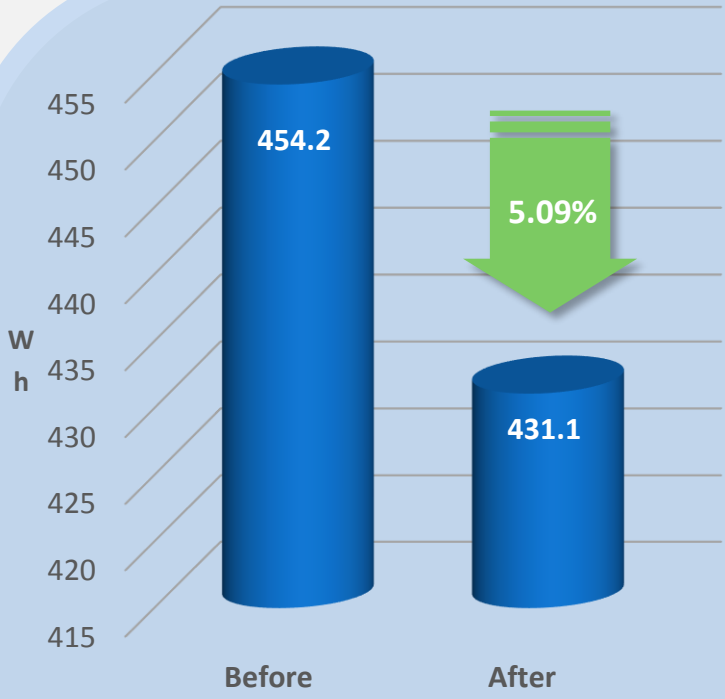


Induction Range Test

Test Overview

Load	Inductive Load
Saving	5.09%
Installation Site	Induction Range
Country	Korea
Installation Date	2009.08.24
Model	UM-2





This is a LAB Test conducted by induction range in KESECO.

UM-2 was installed into one of induction ranges only and it showed 431.1Wh of the power consumption while the other showed 454.2Wh.

As a result,
it showed **5.09%** of saving rate.

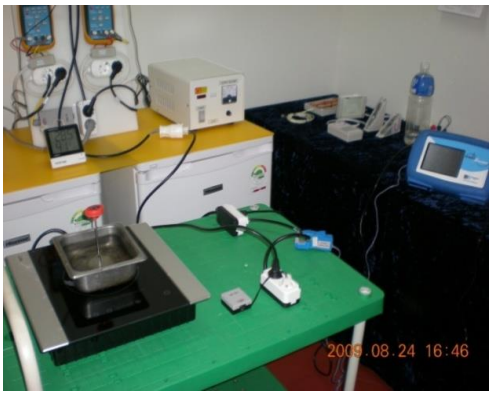


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< Induction Range Test Report >

1. The outline of the test about electric power source reduction unit
   1) The test date : 24th August 2009
   2) The way of test:
      ① Prepare the same induction range 2 units :
      ☞ 1 unit-With Ultra, 1 unit-Without Ultra
      ② Test them about 30 minutes each in the same temperature of a room, amount of water, water temperature, the force of the fire
      ③ Fist, test the induction heater which is not installed Ultra for 30 minute
      ④ then, test the induction heater which is installed Ultra in the same situation
      ⑤ measure the time to reach a **boiling point (100°c) and compare voltage**, **electric current**, **active power**, **apparent Power**, **accumulated power usage**
   3) Object of the test : induction range 2 units
      - The name of model:
      - rated voltage: single-phase **220V, 60Hz**
      - rated power consumption:
   4) Capacity of power saver: **Ultra (2KVA)**
   5) Instrumentation unit: **Power Analyzer**
      - The name of model: BMI EX5
      - Manufacturer: DRANETZ BMI
   6) Test attendant
      - Seongwoo, Jang Manager from VATEK
      - Ashley, Park and Jason, Choo from KESECO

2. The test process
   1) The same condition
      ① Room temperature: 28.5°c
      ② Amount of water: 500cc
      ③ Temperature of water: 26.9°c
   2) The picture of installation

Without Ultra.	With Ultra.
	

3. The result of test

1) The result of the measurement time to reach a boiling point(100°c)

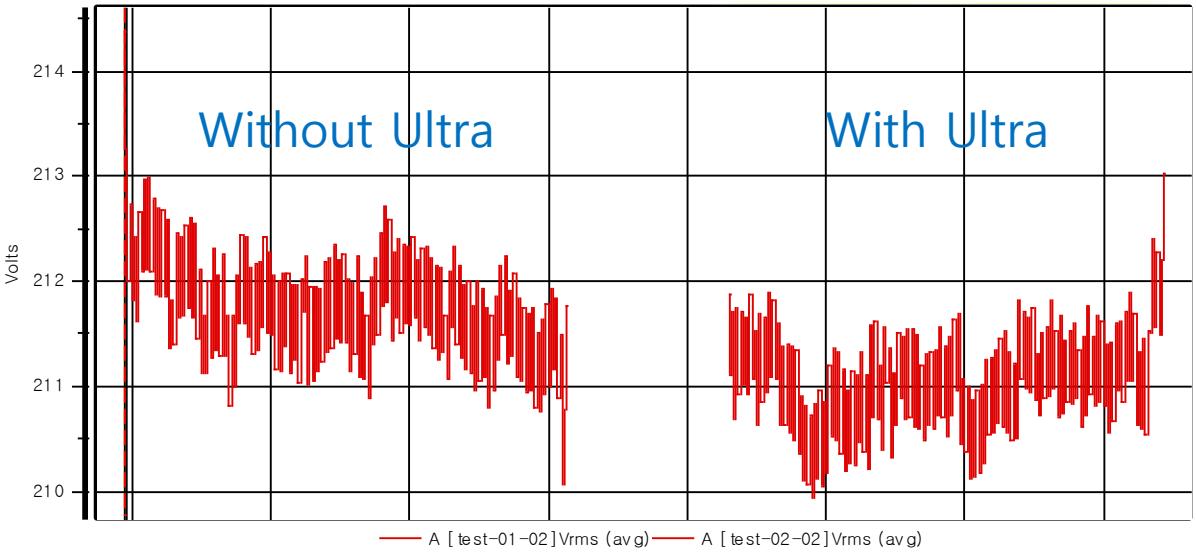
Without Ultra.	With Ultra.
	

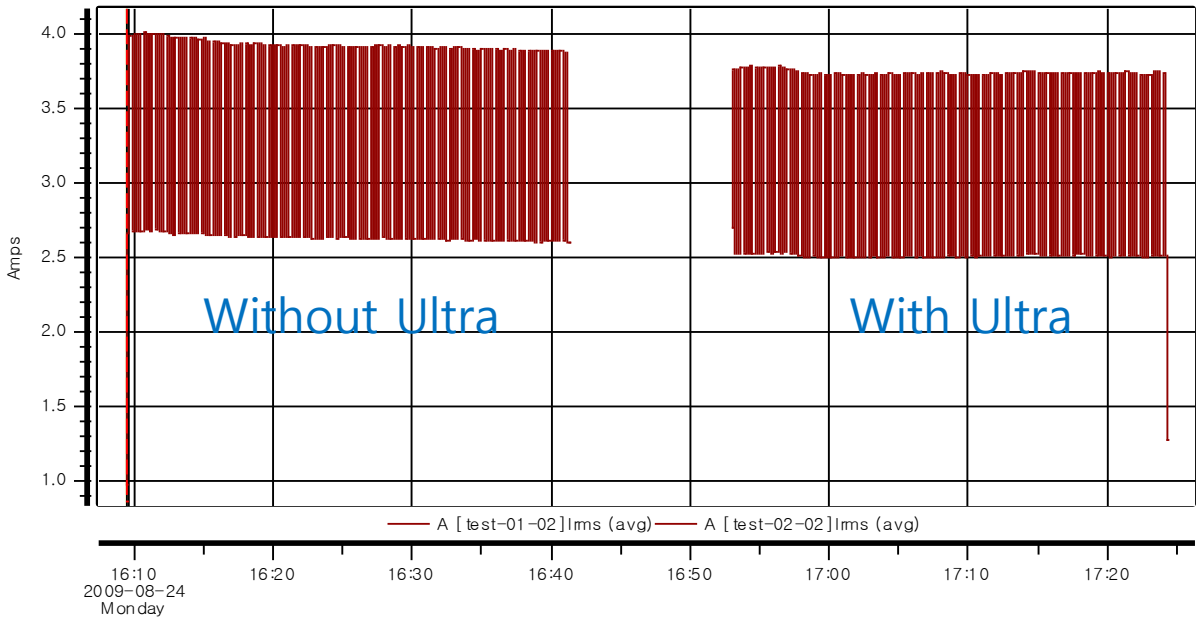
- We checked the time to reach a boiling point in the same situation before and after installation.
- As shown above, the place installed Ultra is faster 40 seconds than the place uninstalled Ultra.

	Without Ultra	With Ultra	Time gap
Time	6min 25sec	5min 45sec	40sec

2) The graph of voltage and current

- If you see the graph of voltage, voltage fluctuation is little bit lower in the place of installation of Ultra. There is no difference about mean value between the two.
- If you see the graph of current, you can find decrease the fluctuation between Min and Max. And it is shown 4.33% decrement rate.



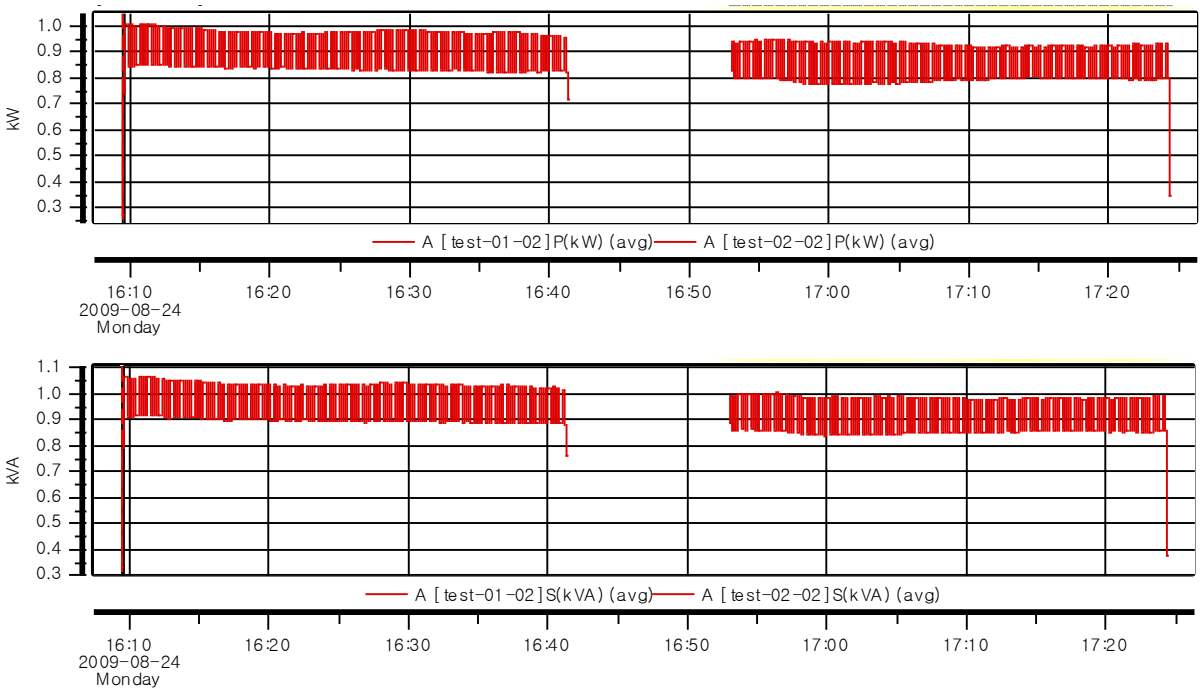


test-01-02	Min	Max	Avg
AVrms	210.1	214.4	211.8
AIrms	0.9720	4.005	3.259
test-02-02	Min	Max	Avg
AVrms	209.9	212.4	211.1
AIrms	2.489	3.781	3.118

Created with DranView 6.8.0

3) The graph of active power, Apparent Power, power factor

- On the first graph about active power, we can see the stabilization of the voltage fluctuation and 4.65% reduction rate at the place installed Ultra.
- On the second graph about Apparent Power, we can see the stabilization of the voltage fluctuation and 4.60% reduction rate at the place installed Ultra.

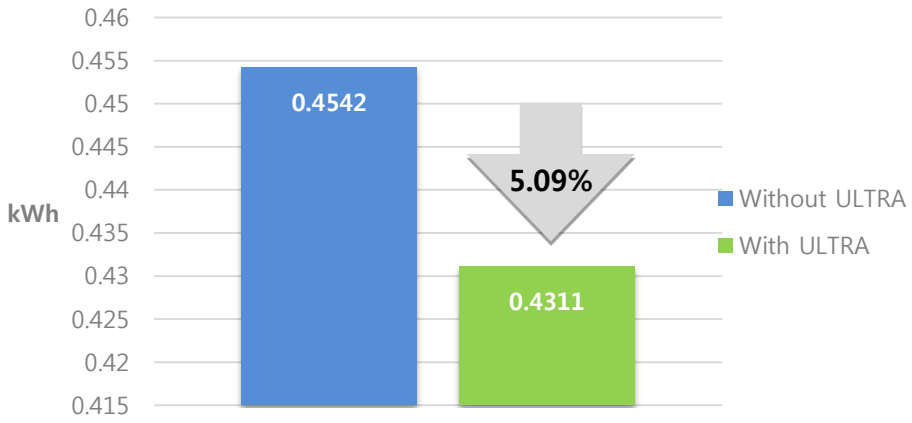


	Min	Max	Avg
AP(kW)	0.2728	1.007	0.9029
AS(kVA)	0.3317	1.066	0.9630
APF	-0.9957	0.9969	0.1715

	Min	Max	Avg
AP(kW)	0.7763	0.9505	0.8609
AS(kVA)	0.8394	1.004	0.9187
APF	-0.9988	0.9982	0.1255

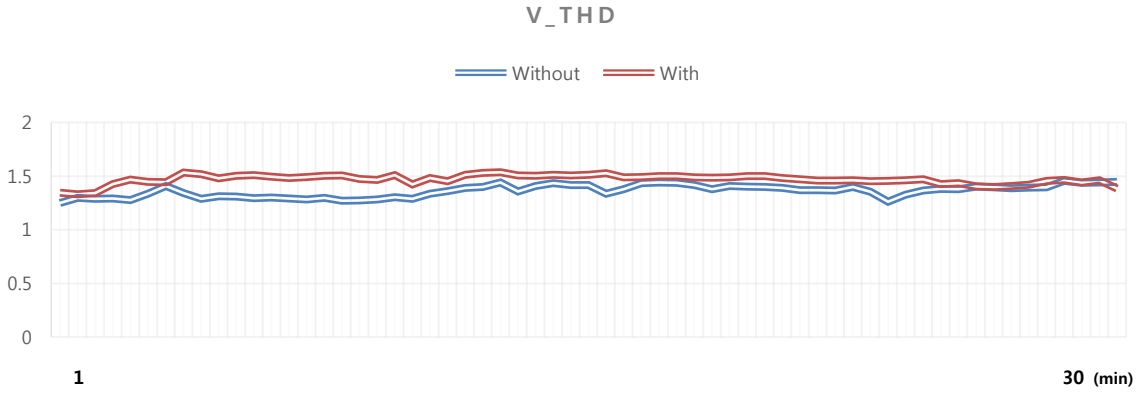
4) Graph of **accumulated power**

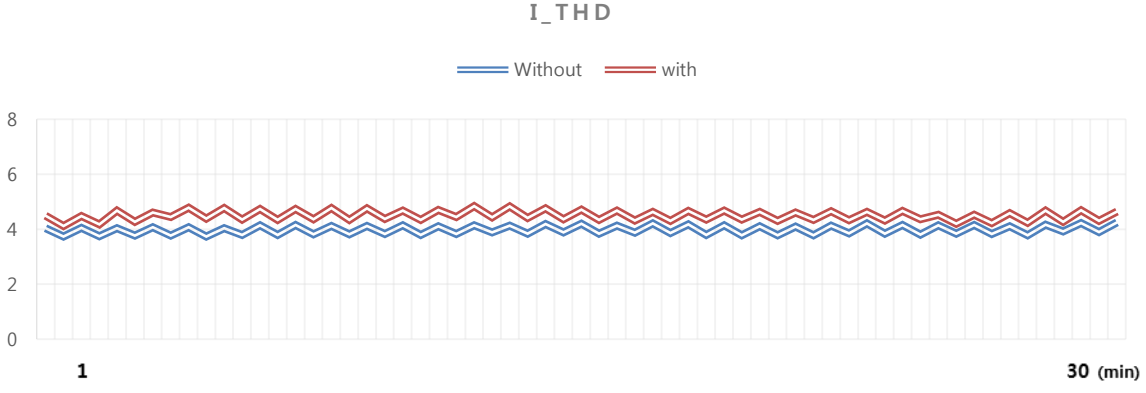
- measuring result for 30 min: the power saving rate is **5.09 %**



5) The graph of harmonic

- Permitted limit of harmonics: within 5%
- After checking voltage and current harmonic, it is shown below 5% within limit gauge both before and after installation Ultra.
- After installation Ultra, it didn't influence on harmonic.





4. Conclusion

1) It works stabilization of the Fluctuation as Identified the graphs of voltage, electric current, active power, and apparent power.

2) It is shown that power saving rate **5.09%** is as verified the graph of accumulated power.
   *** The power saving rate should be calculated by the value of accumulated power because actual charged electricity is based on the accumulated power. (So, power saving rate is more than 4.33 %)**

3) It didn't influence on harmonic as identified the graph of harmonic.

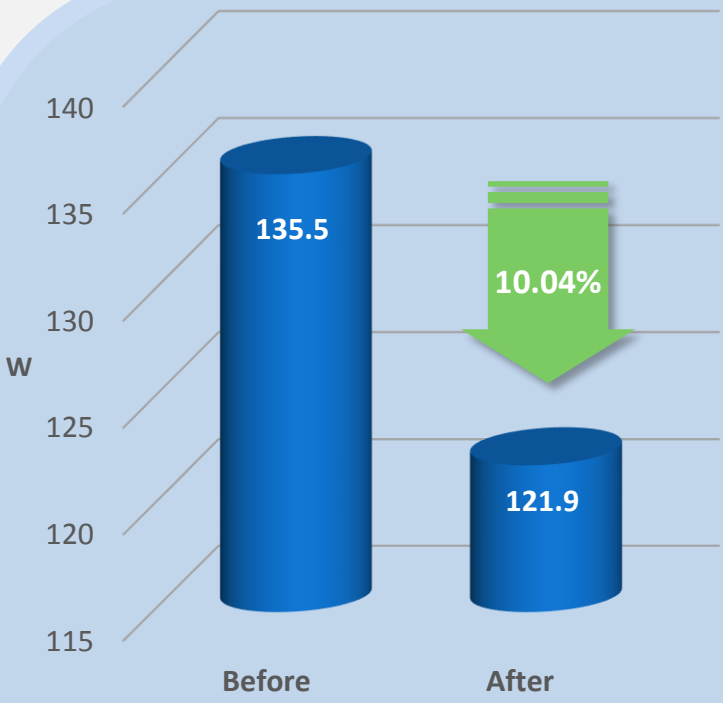
4) After installation Ultra, the noise of Induction heater is definitely decreased.

Refrigerator Test

Test Overview

Load	Inductive Load
Saving	10.04%
Installation Site	Refrigerator
Country	Korea
Installation Date	2009.07.29
Model	UM-0.5





This is a LAB Test conducted by refrigerators in KESECO.

UM-0.5 was installed in one of refrigerators only and it showed 121.9W of the instantaneous power while the other showed 135.5W.

As a result,
it showed **10.04%** of saving rate.



■ Refrigerator Test Report

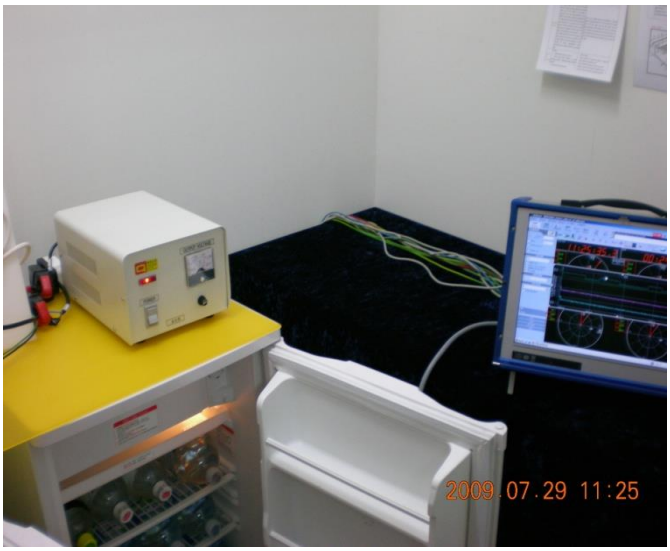
1. Power saving device test outline
   1) Test Date: 2009, 7, 29
   2) Test method: There are **2 same refrigerators and one is installed with Ultra** and **the other one is not** and after working for a long time then **compare the difference with 2 refrigerators.**
   3) Test Subject: 2 Refrigerators for Demo.
   - Model: Hisense HFS-118CW
   - Rated Voltage: Single Phase 220V 60Hz
   - Rated Power Consumption: 115W
   - Capacity: 118ℓ

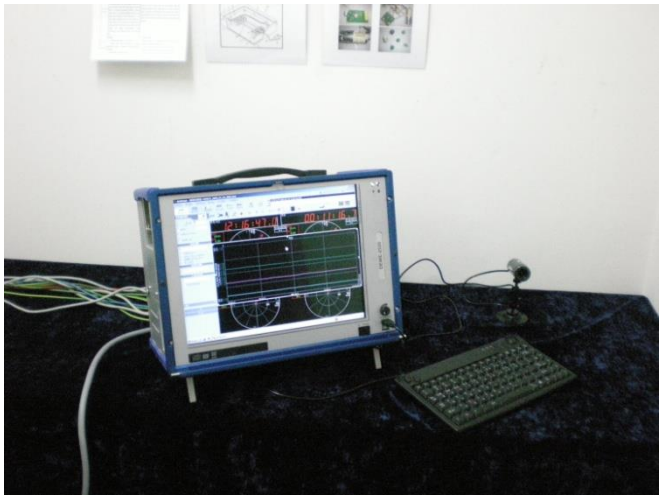
   4) measured equipment: **Power Analysis Device**
   - Model: DEWE-2520
   - Manufacturer: DEWETRON Co., Ltd

   5) Test Attendee
   - Samsung CNT Deputy-Manager Na, Sungki, PD&C 3 staffs including Executive Director Kim, Kichung
   - DEWETRON 2 Engineers
   - KESECO 2 Engineers

   6) Test Process









◆ Summary (Below graphs by DEWESoft 6.62)

1. **Voltage(V)** Graph (Picture-1)

   Upper curve is Without Ultra state and lower curve is With Ultra state on the graph.

   As you can see the graph, the curve with Ultra is **more stable than without Ultra.**

2. **Current (A)** Graph (Picture -1)

   Upper curve is Without Ultra state and lower curve is With Ultra state on the graph.

   As you can see the graph, the current usage with Ultra is decreased compare to Without Ultra.

   It is verified the percentage of **reduction is 12% on average.**

3. **Active Power (W)** Graph (Picture -2)

   Upper curve is Without Ultra state and lower curve is With Ultra state on the graph.

   The power usage with Ultra is decreased compare to Without Ultra. It is verified the percentage of **reduction is 10% on average.**

4. **Reactive Power (Var)** Graph (Picture -2)

   Upper curve is Without Ultra state and lower curve is With Ultra state on the graph.

   The Reactive Power usage With Ultra is decreased and also very stable state.

   It is verified the percentage of **reduction is 18% on average.**

5. **Apparent Power (Va)** Graph (Picture -3)

   Upper curve is Without Ultra state and lower curve is With Ultra state on the graph.

   As you can see, the Apparent Power usage with Ultra is decreased.

   It is verified the percentage of **reduction is 13% on average.**

6. **Power Factor (PF)** Graph (Picture -3)

   Upper curve is With Ultra state and lower curve is Without Ultra state on the graph.

   As you can see the graph, the power factor with Ultra is increased.

   It is verified the **increased gap is 3~4% on average.**

7. **Voltage Harmonics (THD_U)** Graph (Picture -4)

   It is hard to distinguish between Without Ultra and **With Ultra it means Ultra does not affect Harmonics occurrence.**

8. **Current Harmonics (THD_I)** Graph (Picture -4)

   Upper curve is With Ultra state and lower curve is Without Ultra state on the graph.

   There is a little difference compare to Voltage Harmonics however; **it is hard to say Ultra affect Harmonics occurrence.**

9. **Overall Graph**. (Picture-5)

   The **left upper** side graphs (**Voltage, Current, THD_U, THD_I**) is completed by the continuous data from the begging to the end and the **Power Factor (PF)** Graph in the **left lower** is also from the continuous data same as the left upper side graph.

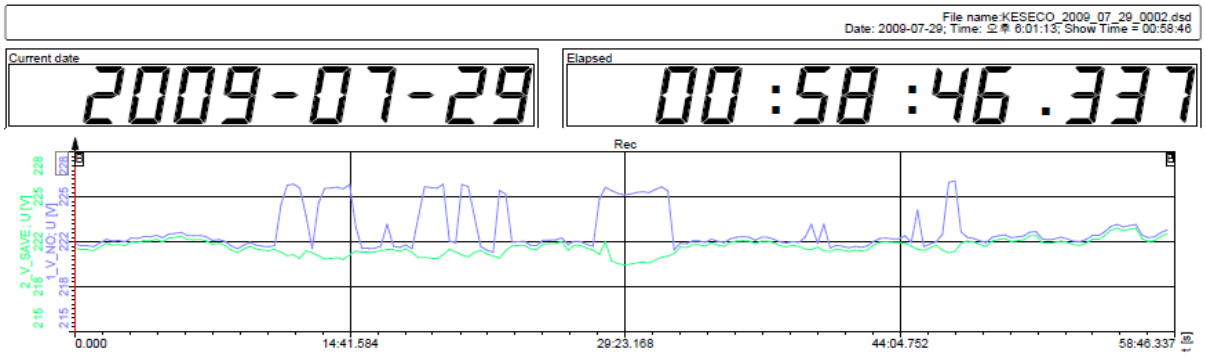
   The **Bar and circle graphs** are indicated **by the average value for checking the status** exactly.

7) Conclusion

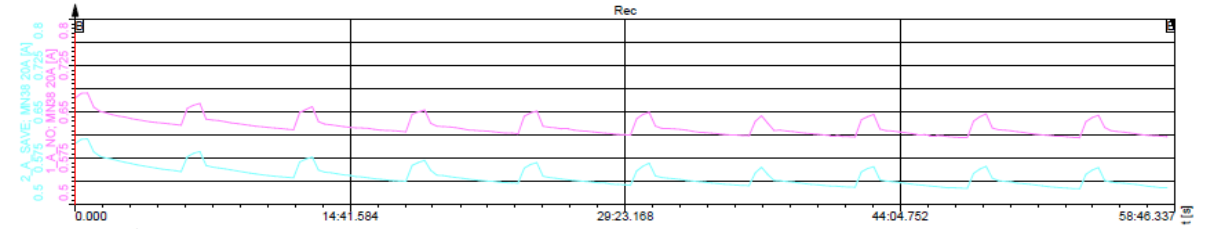
1. According to the **Voltage** Graph, there is the effect to **keep the voltage stable.**
2. According to the **Current and Power usage** Graph, it is verified the saving effect is **more than 10%.**
3. According to the **Harmonics** Graph, **Ultra does not have an effect on Harmonics.**

8) Attachment picture data

A. Picture – 1. Voltage, Current Graph [V, A]

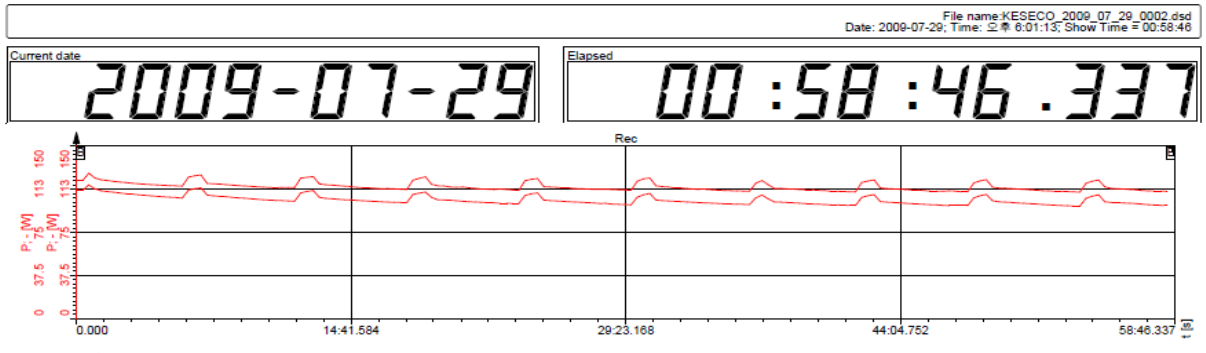


1.Voltage(V) Graph
Upper curve is Without ultra state and lower curve is With ultra state on the graph.
As you can see thr graph , the curve with ultra is stable than without ultra.

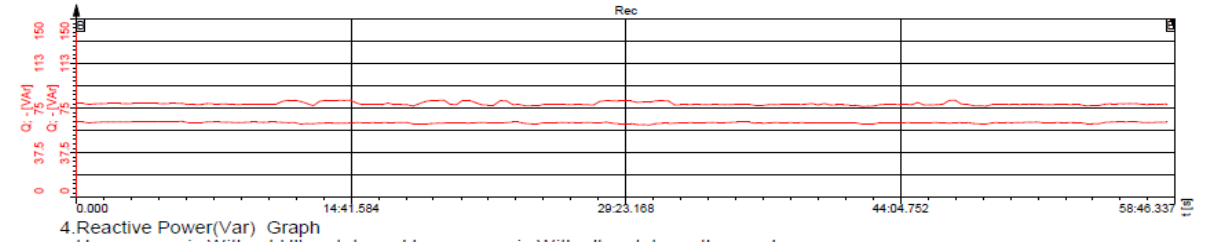


2.Current(A) Graph
Upper curve is Without Ultra state and lower curve is With ultra state on the graph.
As you can see the graph . the current usage with ultra is decreased compare to without ultra .It is verified the percentage of reduction is 12% on average.

B. Picture – 2. Active Power, Reactive Power Graph [P (W), Q (Var)]

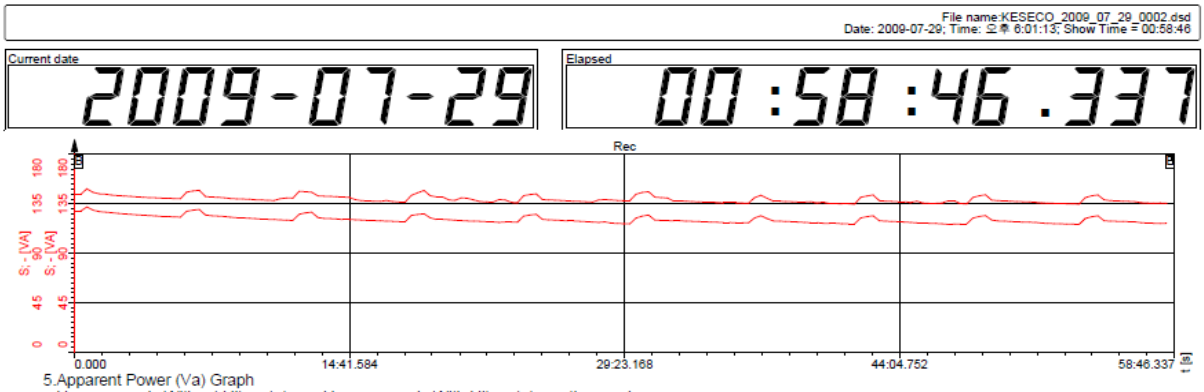


3.Active Power(W) Graph
Upper curve is Without ultra state and lower curve is With ultra state on the graph.
The power usage with ultra is decreased compare ro Without ultra.
It is verified the percentage of reduction is 10% on average.

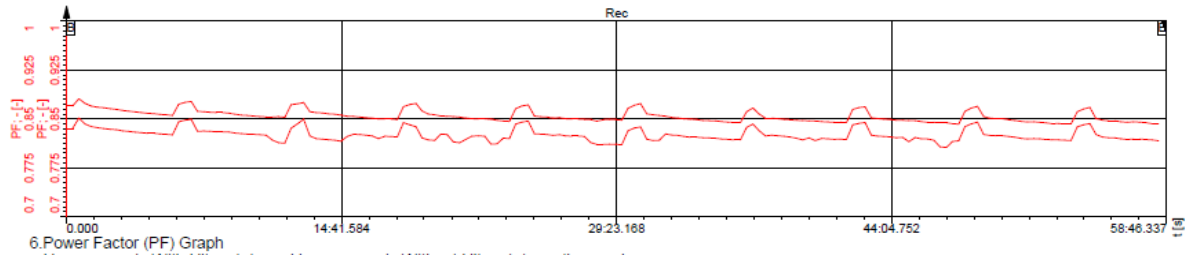


4.Reactive Power(Var) Graph
Upper curve is Without Ultra state and lower curve is With ultra state on the graph.
The reactive Power usage with ultra is decreased and also very stable state.
It is verified the percentage of reduction is 18% on average.

C. Picture – 3. Apparent Power, Power Factor Graph [S (VA), PF]

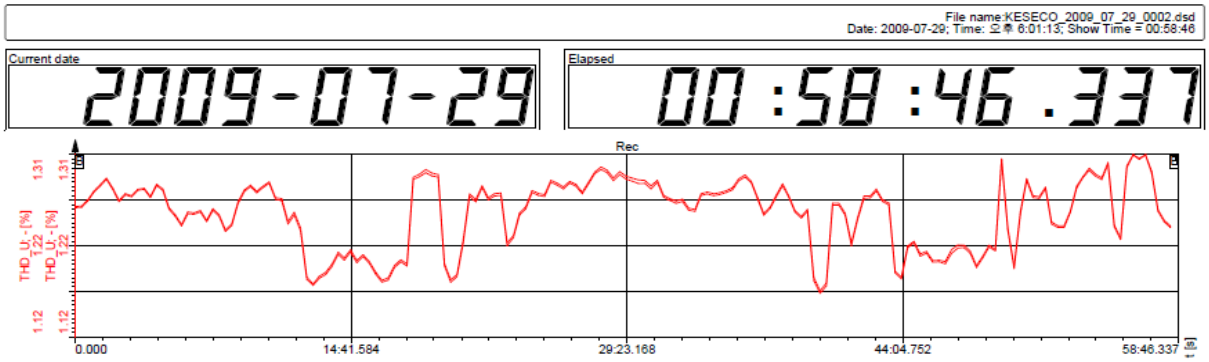


5.Apparent Power (Va) Graph
Upper curve is Without Ultra state and lower curve is With Ultra state on the graph.
As you can see, the Apparent Power usage with Ultra is decreased.
It is verified the percentage of reduction is 13% on average.

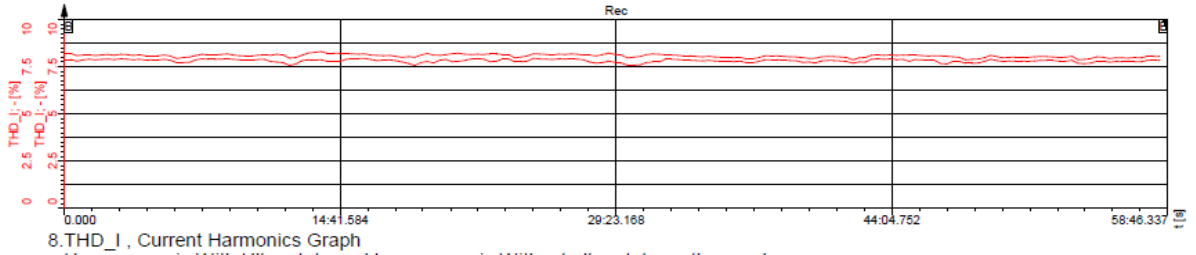


6.Power Factor (PF) Graph
Upper curve is With Ultra state and lower curve is Without Ultra state on the graph.
As you can see the graph, the power factor with Ultra is increased.
It is verified the increased gap is 3~4% on average.

D. Picture – 4. Voltage and Current Harmonics Graph [THD_U, THD_I]

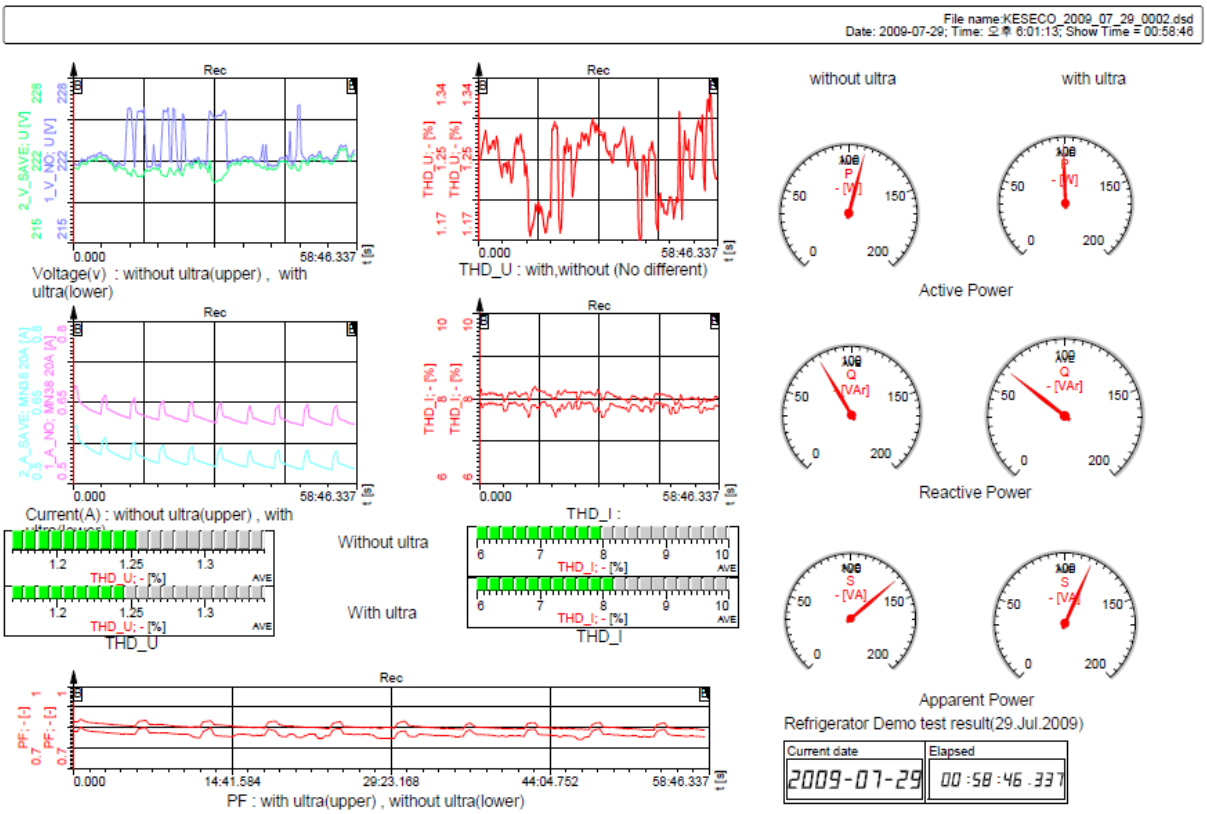


7.THD_U , Voltage Harmonics Graph
It is hard to distinguish between Without and With ultra it means Ultra does not affect the harmonics occurrence.



8.THD_I , Current Harmonics Graph
Upper curve is With Ultra state and lower curve is Without ultra state on the graph.
There is a difference compare to Voltage Harmonics however; it is hard to say Ultra affect the Harmonics occurrence.

E. Picture – 5. Overall Graph

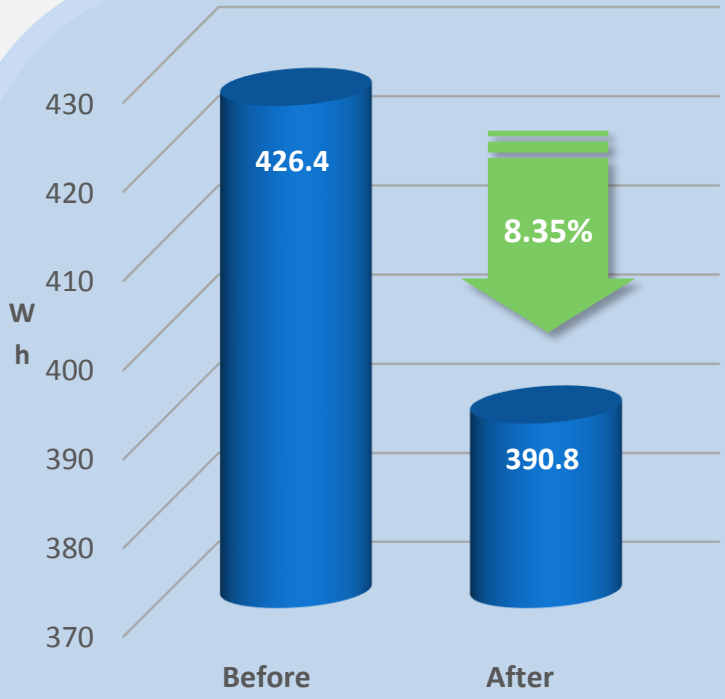


Refrigerator Test

Test Overview

Load	Inductive Load
Saving	8.35%
Installation Site	Refrigerator
Country	Ukraine
Installation Date	2009.07.05
Model	UM-0.5





This is a LAB Test conducted by refrigerators in Ukraine.

UM-0.5 was installed in only one of refrigerators and it showed 390.8Wh of the power consumption while the other showed 426.4Wh.

As a result,
it showed **8.35%** of saving rate.



INTERMO Co. LTD

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Code: 34323109

To: KESECO Co. LTD

Our Ref: 064
Date: 07.07.2009

Sub: TEST RESULT with one refrigerator

1. Technical specifications of the freezer test

a) Electricity: 220V, 50 Hz, 1 phase
b) Equipment for the test:
- refrigerator 111 L (freezing storage 17L, cold storage 94L) - “NORD” 403
- AVR - model SNAP-500
- DEMO KIT box with model ULTRA U-805
c) Dates of test:
- without ULTRA on 28.06.09
- with ULTRA on 05.07.09

2. Test procedure and results

2.1. Preparation for the test where was used the same refrigerator for both ways of measurement (without and with ULTRA) to except any differences.
- Filling of refrigerator with a water “Morshinskaya” with volume of 36 litres.
- Connection of the refrigerator to DEMO KIT in way without ULTRA.
- Turn on the refrigerator.
- 24 hours refrigerator worked with closed door.
- After this period the door of refrigerator was opened and it worked for 1 hour with open door.
- Start to record measurements after 1 hour (kept the door opened) during 3 hours: (1st hour - each 10 min, 2nd hour - each 20 min, 3rd hour - each 30 min).

2.2. Then door of the refrigerator was closed, refregirator was connected in a way with ULTRA and was working in such conditions during one week that ULTRA could influence to electrical network.

2.3. After one week the door of refrigerator was opened and measurements was done again like in p.2.1.

2.4. Temperature conditions (the same conditions in both ways of measurement)
- Temperature in the room was kept at +27±1°C
- Temperature in refrigerator was + 4°C when door was opened after 24 hours of working with closed door.
- Temperature in refrigerator was + 16°C at the last measurement with open door.

2.5. Result of measurements

Active energy used in 4 hours (without ULTRA)	- 426,4 Wh
Active energy used in 4 hours (with ULTRA)	- 390,8 Wh
Comparing power saving	- 8,35 %

Best regards,
Yuriy Khrapunov
Commercial director

Result of refrigirator test

Kiev, Ukraine, INTERMO LTD

	Equipment for test: 2 refrigirators 111 L (freezer 17 L, refrigerator 94 L) model, "NORD" 403, a voltage regulator SNAP-500, demo kit ULTRA)
	Date of test: 05.07.2009
	Pretreatment: refrigirators filled with 36 L of water. 24 hours a refrigerators worked with closed doors. After this time the refrigerator's doors were opened and within 1 hour worked with open doors. Further, during 3 hours were being measured readings.
	Temperature in the placement: +27±1°C
	Temperature in refrigirator after 24 hours of running (after doors opened): + 4°C

Number of measurements	**Time**	**with ULTRA**		**Time**	**without ULTRA**		**Power saving rate, %**
	Time of of measurements	Current (mA)	Power consumption (W/H)	Time of of measurements	Current (mA)	Power consumption (W/H)	
	MEASUREMENTS (with open doors)						
	First hour: each 10 minutes, Second hour: each 20 minutes, Third hour: each 30 minutes						
1	14:00	492,8	96,59	14:00	530,8	103,6	6,77
2	14:10	492,2	111,9	14:10	529,4	122,2	8,43
3	14:20	493,5	128,9	14:20	527,9	139,5	7,60
4	14:30	493,9	145,5	14:30	530,3	157,3	7,50
5	14:40	494,4	161,7	14:40	527,7	175,4	7,81
6	14:50	498,4	178,8	14:50	529,2	193,1	7,41
7	15:00	492,3	195,5	15:00	530,2	211,3	7,48
8	15:20	492,1	228,2	15:20	527,5	247,1	7,65
9	15:40	489,4	261,1	15:40	532,2	282,9	7,71
10	16:00	498,3	293,7	16:00	527,5	319,0	7,93
11	16:30	485,0	342,6	16:30	524,6	372,7	8,08
12	17:00	483,1	390,8	17:00	526,2	426,4	**8,35**





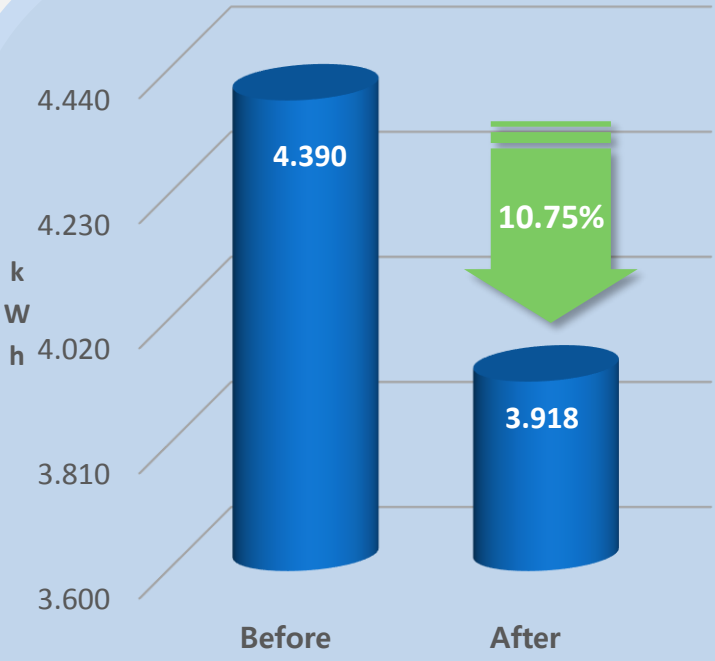
Test carried out by leading specialist Melnychuk T.R.
Test attendee: 2 engineers

Refrigerator Test

Test Overview

Load	Inductive Load
Saving	10.75%
Installation Site	Refrigerator
Country	Thailand
Installation Date	2010.05.07
Model	UM-1





This case is a result of PEA Lab Test which is a Provincial Electricity Authority in Thailand.

UM-1 was installed in a refrigerator, and the power consumption had been reduced from 4.390kWh to 3.918kWh.

As a result,
it showed **10.75%** of saving rate.

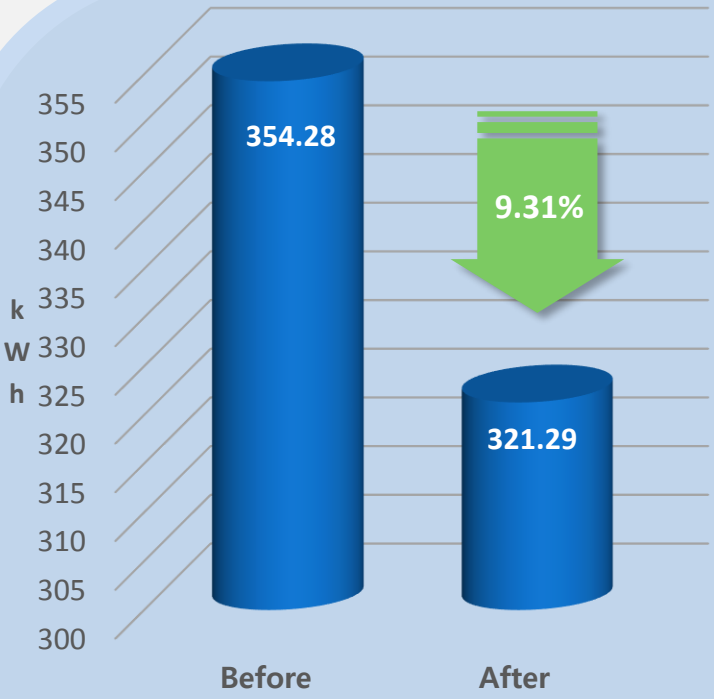


Thermo-hygrostat Test

Test Overview

Load	Inductive Load
Saving	9.31%
Installation Site	Thermo-hygrostat
Country	Korea
Installation Date	2015.05.19
Model	UR-30





This case is a result of installing ULTRA at a thermo-hygrostat in the base station.

UR-30 was installed at the load, and the daily average power consumption had been reduced from 354.28kWh to 321.29kWh.

As a result,
it showed **9.31%** of saving rate.

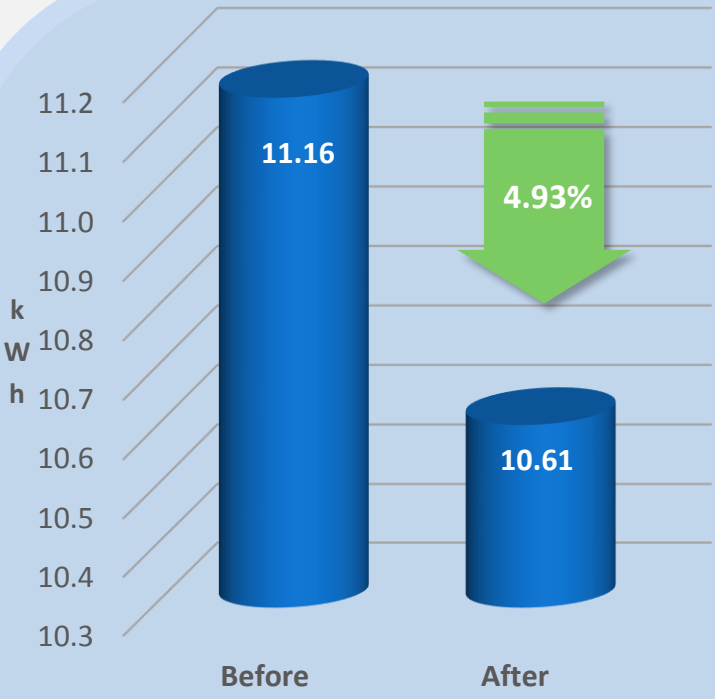


University Motor Test

Test Overview

Load	Inductive Load
Saving	4.93%
Installation Site	Motor
Country	Australia
Installation Date	2011.05.01
Model	UR-5





This is a LAB Test conducted by 5KVA motor at University located in Australia.

UR-5 was installed at the motor, and the power consumption had been reduced from 11.16kWh to 10.61kWh.

As a result, it showed **4.93%** of saving rate.



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Namyoung Digital Tower 8F, Seongsuil-ro 84, Seongdong-gu, Seoul, South Korea

University Compressor Test

Test Overview

Load	Inductive Load
Saving	6.36%
Installation Site	Compressor
Country	Australia
Installation Date	2011.05.01
Model	UR-10





This is a LAB Test conducted by 10KVA compressor at University located in Australia.

UR-10 was installed at the load, and the power consumption had been reduced from 58.33kWh to 54.62kWh.

As a result, it showed **6.36%** of saving rate.



Performance Testing of the ULTRA Device

SUMMARY

This paper is a summary of the reports prepared by the above authors on the 10th May 2011 and the 22nd December 2011.

The tests included two three phase tests with the ULTRA device. Two different loads (a 5KVA induction motor and a 5.8 KVA three phase compressor) were connected with and without the ULTRA device for the power consumption tests. The induction motor had no mechanical load added. The three phase compressor test was set to a 50% duty cycle. This means that the compressor runs for 2 minutes (ON condition) and stops for 2 minutes (OFF condition). The testing result of the Power Consumption with and without ULTRA device is under the room temperature and humidity condition. The energy saving was found to be 4.93% for the induction motor and 6.36 % for the three phase compressor respectively.

Performance Test 1 – Three Phase Motor

The three phase motor test block diagram is presented in Fig.1. Two tests were undertaken; the first one without the ULTRA device fitted and a second one with the ULTRA device connected as shown in Fig.2, including a 24 hour adaption. The dotted line in block diagram shows with and without conditions to the ULTRA device connected.

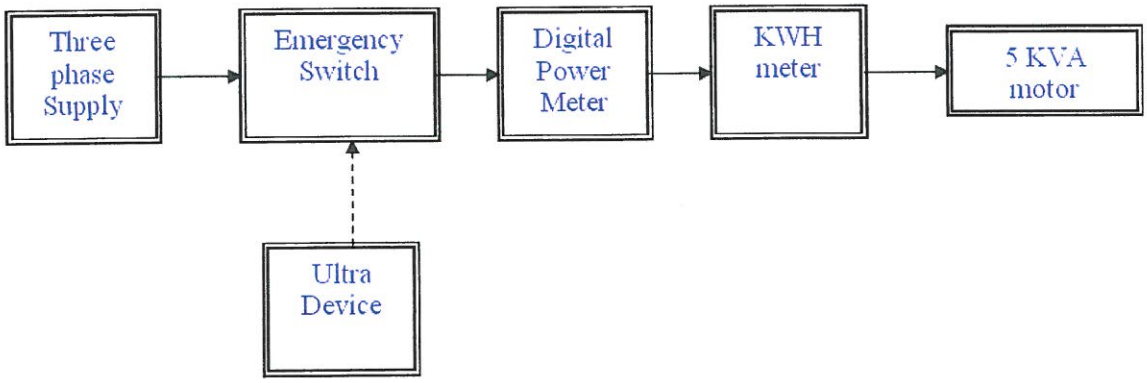


Fig.1 Measurement set-up for three phase test with & without 5KVA ULTRA device

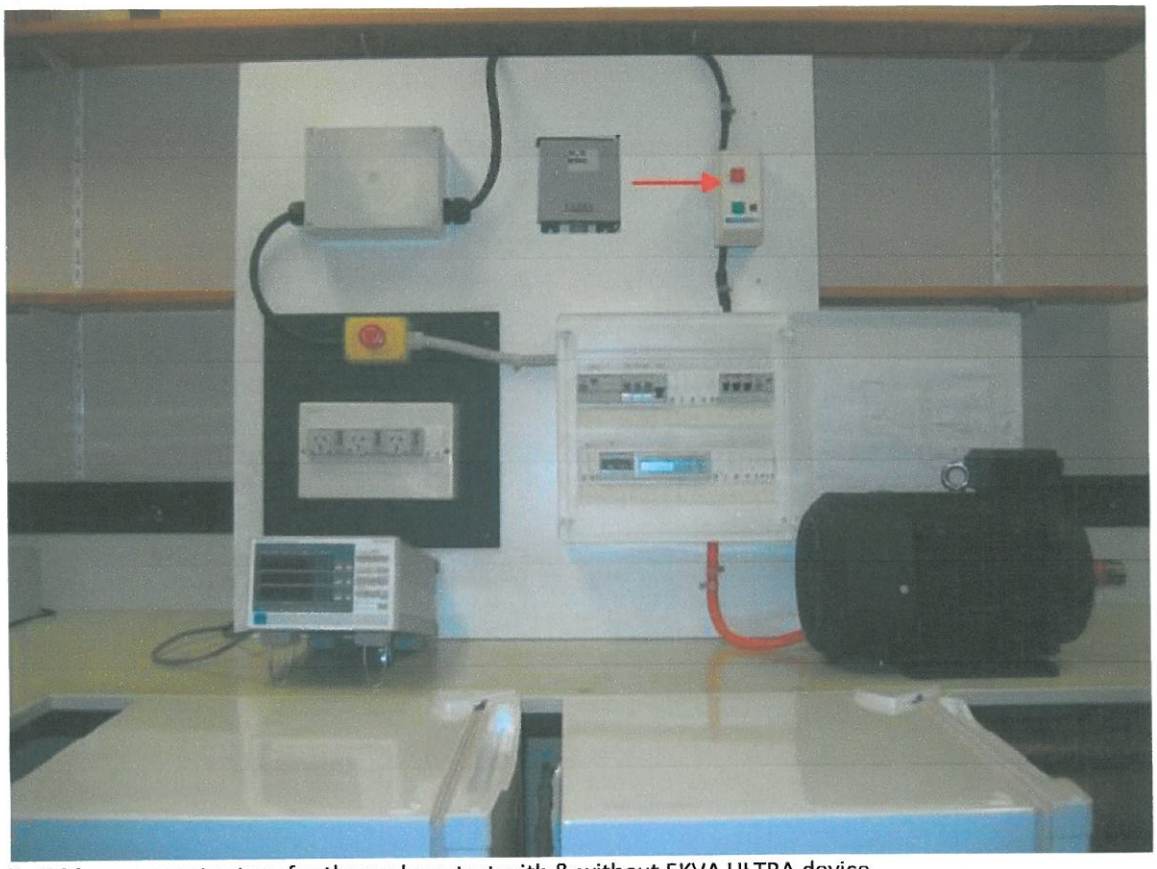


Fig.2 Measurement set-up for three phase test with & without 5KVA ULTRA device

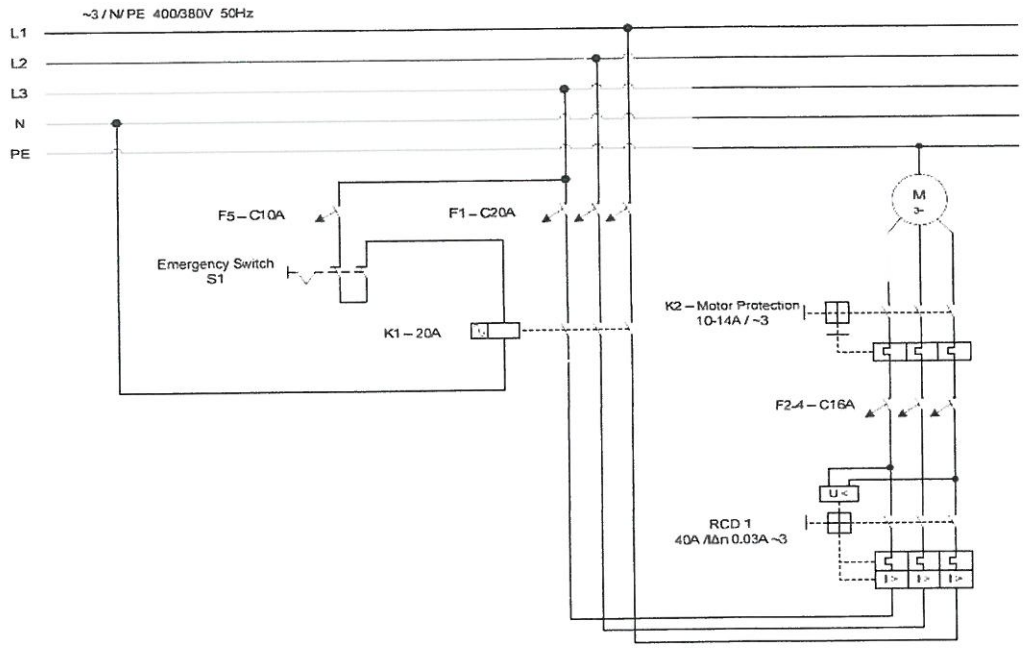


Fig. 3 Circuit diagram for three phase motor test

The three phase main source was connected to an emergency switch for safety reasons. The output was connected to a three phase digital power meter and the power consumption

recorded by the KWh meter. Fig. 3 shows the actual circuit diagram for the three phase motor test.

	Power Consumption (KWh	Average Room Temperature (Deg C)	Average Humidity (%)
No ULTRA	11.16	23.3	67.5
ULTRA	10.61	24.9	53.6
% saving	4.93		

Table 1: Results from the three phase motor test.

Voltage	Current	P	VA	VAR	PF	Angle	T	Humidity	KWh
422	1.50	.367k	.634k	.513k	0.59	G53.6	24.50	61	103.81
421	1.47	.353k	.623k	.510k	0.58	G54.5	22.10	67	104.12

Table 2(A): Results from three phase motor test without Ultra

- Total Power consumed power (KWh) = 104.12 - 103.81= 0.31 in 1 hour and 55 mins.
  72 hours = 11.16

Voltage	Current	P	VA	VAR	PF	Angle	T	Humidity	KWh
423	1.47	.363k	.620k	.503k	0.581	G54.6	25.40	55	79.65
419	1.47	.359k	.611k	.504k	0.575	G55.1	25.00	63	82.00
423	1.48	.374k	.621k	.497k	0.597	G53.0	25.10	57	82.28
420	1.56	.370k	.639k	.509k	0.590	G54.3	25.00	51	82.57
416	1.48	.368k	.612k	.493k	0.589	G54.0	24.60	50	82.85
423	1.47	.364k	.624k	.504k	0.600	G53.9	25.40	53	83.13
419	1.46	.370k	.621k	.498k	0.586	G54.7	24.20	51	85.46
418	1.45	.361k	.621k	.505k	0.586	G54.7	24.30	52	85.74
415	1.45	.356k	.600k	.485k	0.591	G53.8	23.60	49	86.02
419	1.49	.369k	.626k	.515k	0.584	G53.7	24.10	52	86.30
420	1.49	.363k	.622k	.513k	0.576	G54.2	23.40	50	86.58
419	1.46	.370k	.621k	.498k	0.586	G54.7	25.00	52	88.91
417	1.45	.358k	.610k	.502k	0.584	G55.1	26.20	55	89.19
422	1.49	.363k	.624k	.513k	0.565	G55.5	25.50	51	89.48
424	1.51	.369k	.632k	.515k	0.581	G54.8	25.30	52	89.77
426	1.48	.362k	.636k	.510k	0.574	G54.3	24.80	57	90.06
423	1.49	.362k	.635k	.511k	0.567	G54.1	25.30	60	90.26

Table 2(B) three phase motor measurement results with 5 KVA ULTRA

- Total Power consumed power (KWh) = 90.26 - 79.65= 10.61
- Calculated savings in Percentage = [(11.16-10.61)*100]/11.16= 4.9283%.

As shown in Fig.2 and Fig.3 a TECO 5 KVA induction motor was used in the three phase test, and each test consisted of three parts as mentioned in the introduction section. The three phase motor test is a no load case which means it runs without any mechanical load

connected. So it behaves like a constant reactive load with a low power factor. If the motor was loaded it is reasonable to expect the energy saving would be higher.

In a real world environment there would be some load added as the point of the motor is to work or drive a load. This would increase the reactive power relative to the apparent power. The ULTRA device performs best when it is used with reactive loads.

Performance Test 2 – Three Phase Compressor

The three phase motor test block diagram is presented in Fig.4. Again two tests were undertaken; the first one without the ULTRA device fitted and a second one with the ULTRA device connected, as shown in Fig.5, including a 24 hours adaption period. The dotted line in block diagram shows with and without conditions to the ULTRA device connected.

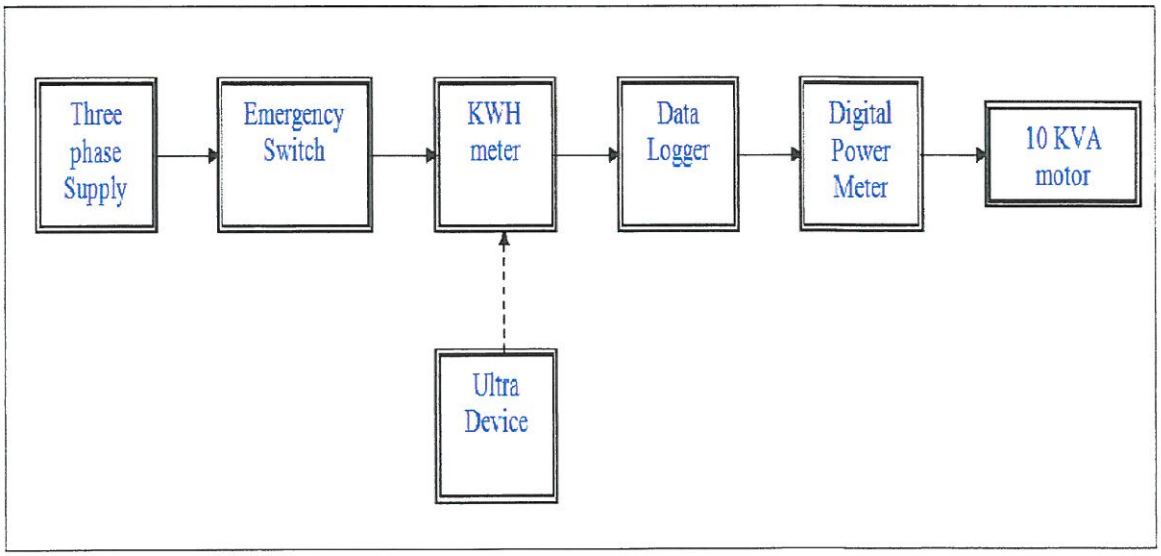


Fig.4 Measurement set-up for three phase test with & without 5KVA ULTRA device



Fig.5 Measurement set-up for three phase test with & without 10 KVA ULTRA device

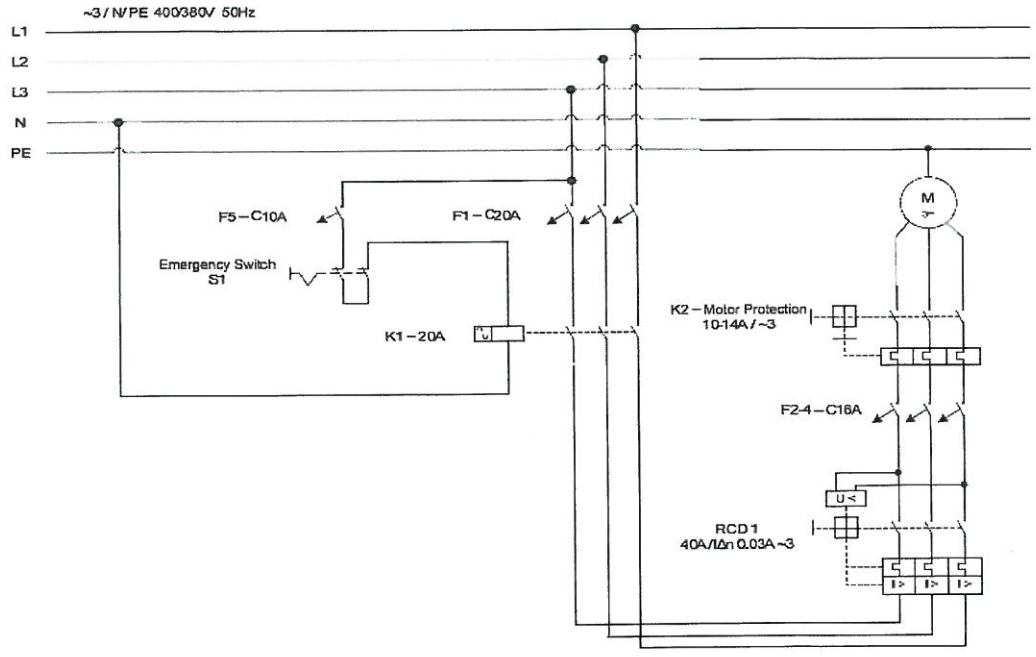


Fig.6 Circuit diagram for three phase compressor test

The three phase main source was connected to an emergency switch for safety reasons. The output was connected to a three phase data logger and then digital power meter and the power consumption recorded by the KWh meter. Fig. 6 shows the actual circuit diagram for the three phase compressor test.

Results

	Power Consumption (KWh)	Room Temperature (Deg C) [Min-Max]	Humidity (%) [Min-Max]
No ULTRA (48 hrs)	58.33	24.9 – 28.4	49 - 73
Adaption with ULTRA (24 hrs)	28.02	25.3-27.9	48- 69
ULTRA (48 hrs)	54.62	23.9-27.1	39 - 58
Energy Saving %	**6.36**		

Table 3. Results from the three phase compressor test.

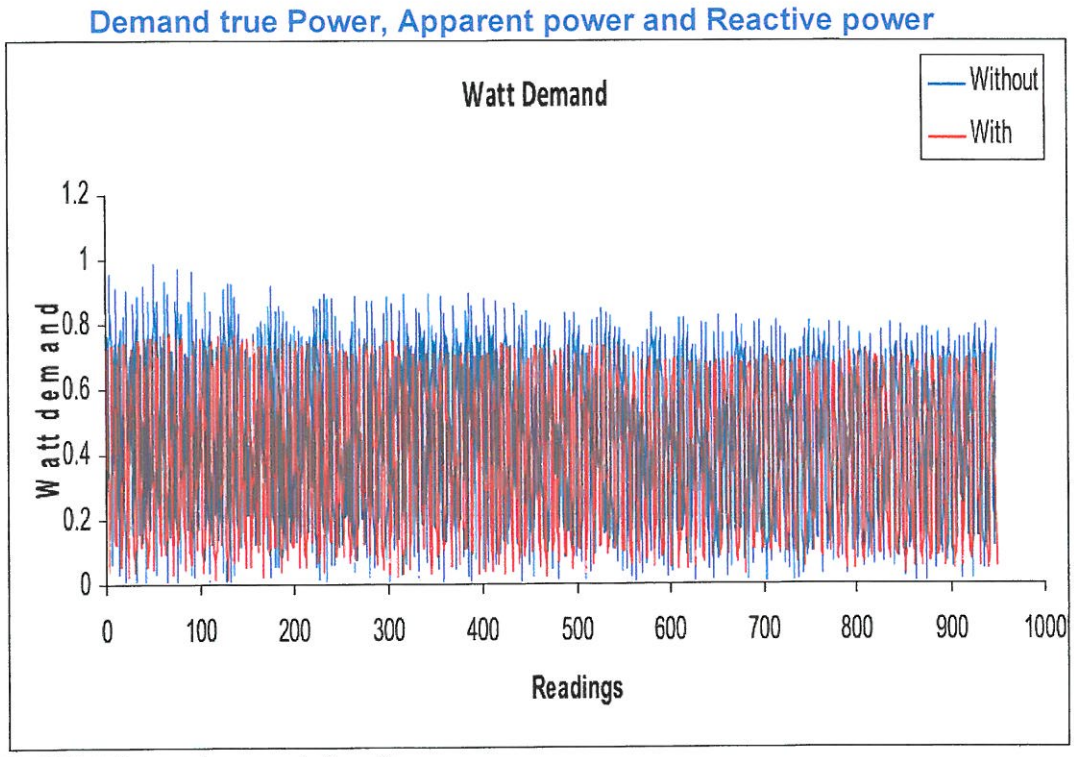


Fig.6 Watt Demand vs recorded reading

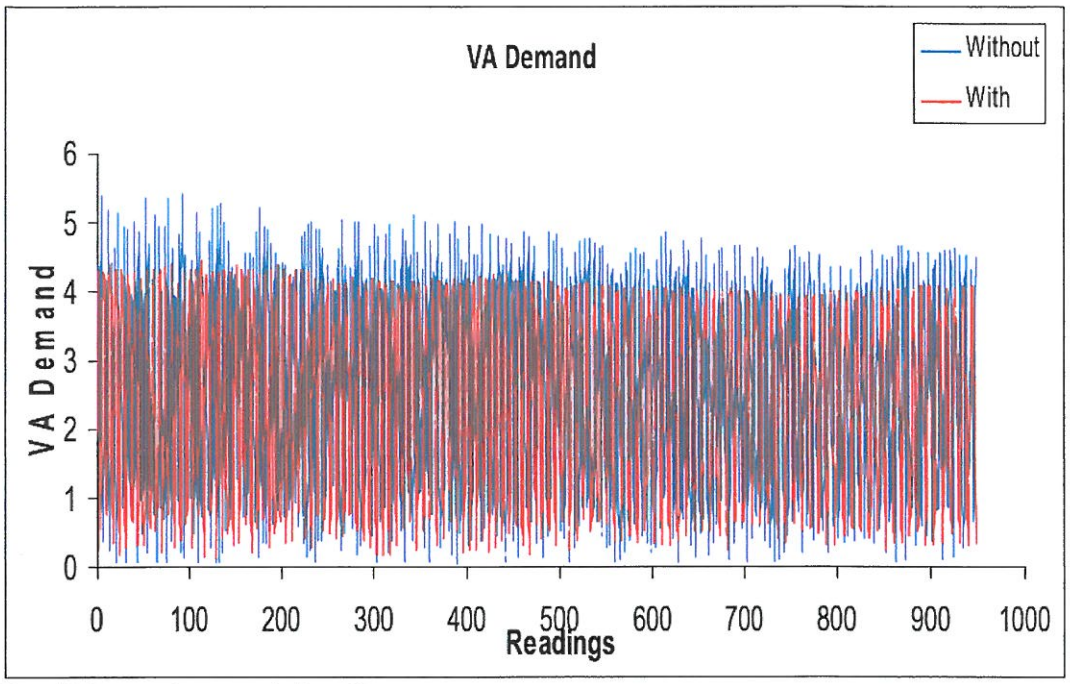


Fig.7 VA Demand vs recorded reading

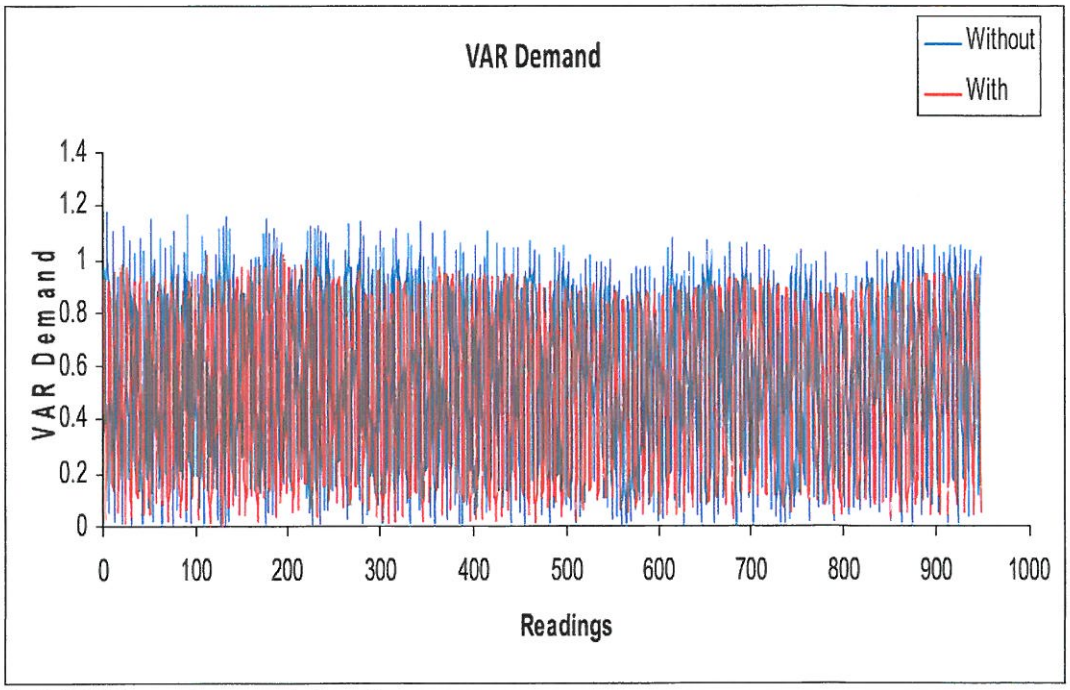


Fig.8 VAR Demand vs recorded reading

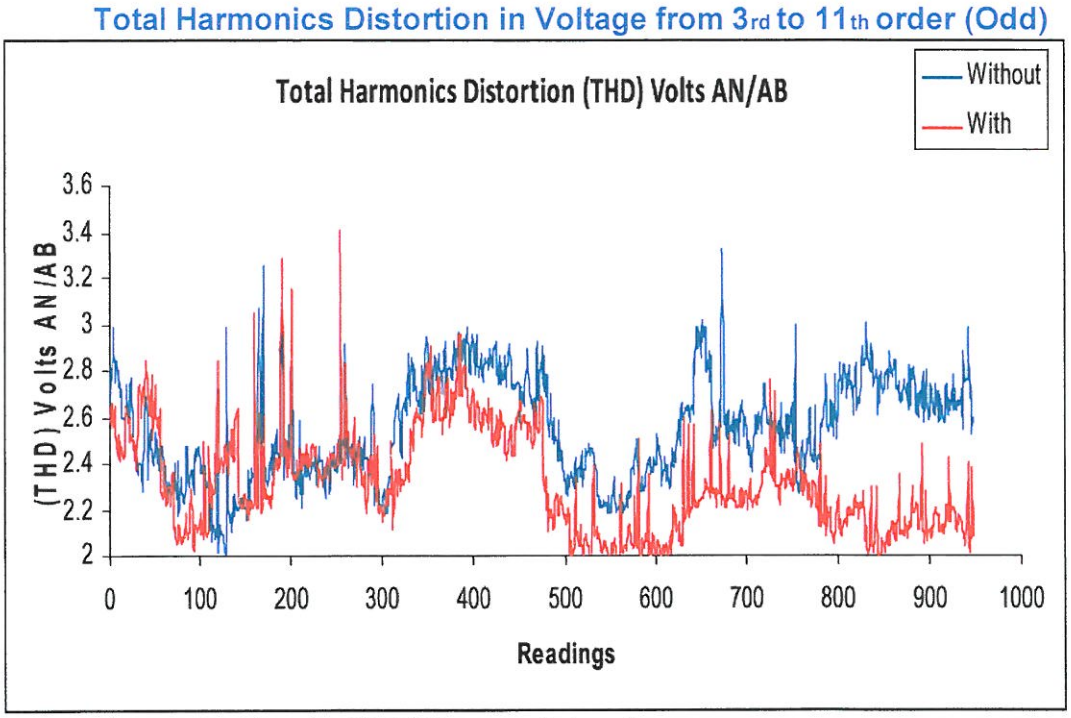


Fig.9 Total Harmonics Distortion V(AN/AB) vs recorded reading.

Discussion

As shown in Fig.5 a measurement arrangement was set-up to measure a 5.8 KVA three phase compressor (Appendix 1, Fig.A8) used in the three phase test, and each test consisted of three parts as mentioned in the introduction section. Three phase compressor was set-up on 50-50 cycle to put it under a moderate work load as Ultra suggested. It means that the three phase compressor runs in ON condition for 2 minutes and then OFF for 2 minutes while it releases the air. However, in a real world situation a compressor could conceivably put under significantly higher work load. In that instance it would be reasonable to expect the energy saving to be higher. Table 3 shows the results of the Power Consumed with and without ULTRA device under the room temperature condition and humidity. The energy saving was found to be 6.36 %, which is not a temperature or humidity dependent value. Fig. 6 through Fig.9 illustrate the instant power and electrical parameter readings without and with ultra device conditions. These are dynamic and the figures show there is some correlation between these instant power results.

Conclusions

The ULTRA device tests were both conducted on three phase circuits with inductive motors under two different loads. From the experiment result, it has been found that it can save 6.36 % as per our experimental results.

02 Certification

Republic of the Philippines
DEPARTMENT OF ENERGY

Product Energy Performance Test
Rendered to
KESECO Ultra Power Saver

GENERAL

This report gives the results for the electrical operating parameters of one (1) unit Keseco Ultra Power Saver tested using the combined incandescent, compact fluorescent lamps and refrigerator as a load.

The test were conducted on September 21, 2009 – October 6, 2009 at LATL in accordance with the procedures as agreed between the client and the laboratory.

GENERAL TEST CONDITIONS

Test Room

The test was carried out at an ambient room temperature of 25°C (±1°C).

Power Supply

Power supply to the measuring instruments and test unit was regulated by 12.5 KVA capacity voltage regulator which is capable of maintaining output voltage to ±2.0% volts.

TEST PROCEDURE

Measurement of electrical operating parameters

DISCUSSION/CONCLUSION

The comparison between the electrical operating parameters **with** and **without** the device. Results shows significant change 3.67% decreased of energy consumption for five (5) days with and without the device.

This Product Energy Performance Tests certificate issued this **13th** day of **October 2009** at **Taguig City, Metro Manila.**

DIR. MARIO C. MARASIGAN
OIC, Assistant Secretary

LATL Test Request Control No. ESD-072009-3001

Energy Center, Merritt Rd., Fort Bonifacio, Taguig, Metro Manila, 1632 Philippines
Tel. Nos.: Trunkline (632) 840-1401 to 21; Telefax (632) 840-2067; (632) 840-2138; (632) 840-4244; Hotline (632) 840-2130
Website: www.doe.gov.ph. E-mail: info@doe.gov.ph

Report of Reliability Assessment

Test No. : R - 1004008

Client Name : KESECO Co., Ltd.

Test Sample : Air Conditioner Filter

The above is to test result of the specimen provided by the applicant.

2010. 04. 20.

Korea Institute of Lighting Technology

The result shown in this test report refer only to the sample tested unless otherwise stated. This Test Report cannot be reproduced, except in full.

Daewoo Technopark A-403, #187-7 Dodang-dong, Wonmi-gu, Bucheon-City, Gyeonggido, Korea
Tel : 032-670-8888 Fax : 032-670-8889
www.kilt.re.kr (www.kiltreliability.re.kr)

Test Result

1. Client

Name	KESECOM Co., Ltd.		
Representative	EUN KOOK KIM		
Address	284-49, 2ga, Sung Su-Dong, Sung Dong-Gu, Seoul, Korea		
Test Sample	Air Conditioner Filter	Quantities	1 EA
Purpose of use	Research test		
Pages	5 page		

2. Condition and Result

Test Items	Input current, Temperature characteristics
Test Method	Standard at the client's request
Date of Test	2010. 04. 19 ~ 2010. 04. 20
Test Result Summary	The tests was carried out Air Conditioner Filter submitted by client. ※ Refer to Test Results

Test by	Approved by
HEE SUK, JEONG (Signature)	YOUNG JOO, LEE (Signature)

1. Summary

Electrical and Temperature Tests of Air Conditioner Filter

2. Client and Test Sample

2.1 Name

KESECOM Co., Ltd.

2.2 Test Sample

Air Conditioner Filter

2.3 Purpose of product

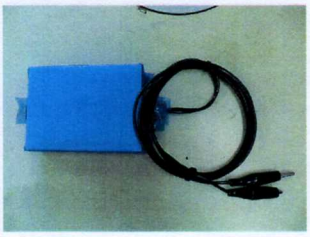
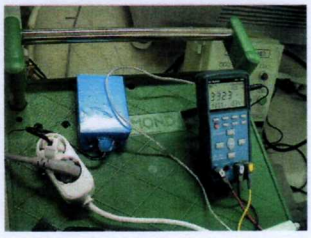
Air Conditioner

3. Specification

3.1 Specification of product

- U-804
- 220 Vac, 60Hz

3.2 Product and Test

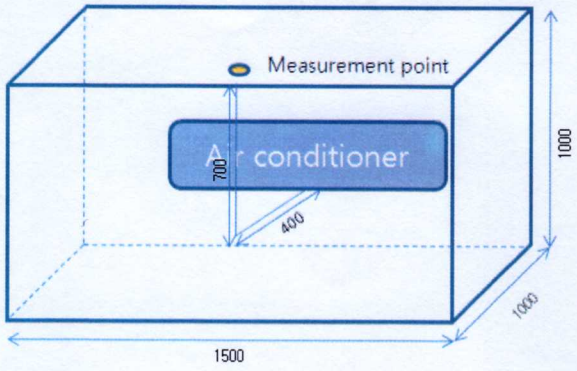
Product and Test		
		

4. Date of Test : 2010. 04. 19 ~ 2010. 04. 20

5. Quantities : 1 EA

6. Test Method and Result

6.1 Test Conditions



6.2 On-off test

Air Conditioner is installed inside the chamber and Air Handling Unit is installed outside the chamber. After the chamber temperature is stable at (40±2) ℃, it is measured input current with operating on and off each for 60 s/90 s/300 s. It is measured repeatedly that Air Conditioner Filter which submitted by client is installed.

Test Condition	Unit	Test Result(Input current)		Remark
		no filter	with filter	
60 s ON/OFF	A	1.89	1.80	average after operating 30s
		1.91	1.81	
		1.88	1.80	
		1.84	1.80	
		1.86	1.82	
		1.86	1.81	
		1.86	1.79	
		1.88	1.81	
		1.88	1.80	
		1.86	1.80	
		1.86	1.79	
		1.88	1.79	
		1.88	1.80	
		1.87	1.79	
		1.88	1.80	

Test Condition	Unit	Test Result(Input current)		Remark
		no filter	with filter	
90 s ON/OFF	A	1.92	1.80	average after operating 30s
		1.92	1.80	
		1.91	1.81	
		1.90	1.80	
		1.90	1.80	
		1.91	1.81	
		1.89	1.80	
		1.87	1.80	
		1.87	1.79	
		1.87	1.81	
300 s ON/OFF	A	1.92	1.82	average after operating 60s
		1.94	1.83	
		1.94	1.83	

6.3 Temperature Tests

Air Conditioner is installed inside the chamber and Air Handling Unit is installed outside the chamber. After the chamber temperature is stable at (40±2) ℃, the chamber is stopped and Air Conditioner is operated(set-up temperature 18 ℃). It is measured temperature and time at Air Conditioner auto stop. It is measured repeatedly that Air Conditioner Filter which submitted by client is installed.

Test items	Test Result(Input current)		Remark
	no filter	with filter	
Air Conditioner stop time	830 s	817 s	
Temperature	14.8 ℃	14.8 ℃	

TEST REPORT

Details of Applicant	Applicant	KESECO Co., Ltd.		
	Address	8F, Namyoung Bldg., 284-49 SungSuDong-2Ga, SungDong-Gu, Seoul, South Korea		
	Telephone No.	82-2-3409-1105	FAX No.	82-2-3409-2106
Details of Manufacturer	Kind of Product	Power Saving Device		
	Model Name	UC-50	Serial No.	N/A
	Manufacturer	KESECO Co., Ltd.		
	Address	8F, Namyoung Bldg., 284-49 SungSuDong-2Ga, SungDong-Gu, Seoul, South Korea		
Testing Laboratory	Test Report No.	F690501/RF-SAF004580		
	Name	SGS Korea Co., Ltd. (Gunpo Laboratory)		
	Address	18-34, Sanbon-dong, Gunpo-city, Gyeonggi-do, Korea		
	Telephone No.	82-31-428-5700	FAX No.	82-31-427-2373
	Date of Test(s)	2011. 09. 02 ~ 2011. 09. 05		
	Date of Issue	2011. 10. 04		
	Standard	Test Condition from applicant		
	Test Result	Complied		

Tested by Aaron Kang **Approved by** Yuta Kim

SGS Korea Co., Ltd.

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1. Test Environment

- Ambient Temperature: 25 ℃ - 30 ℃
- Relative Humidity: 40 % R.H. - 60 % R.H.

2. Test Instruments

Name of instruments	Model name	Serial No.	Manufacturer	Calibration Data
PRECISION POWER ANALYZER	PPA2510	247	KINETIQ	2011-01-07 ~ 2012-01-07
DIGITAL HYGRO-TERMOGRAPH	DHT-1	N/A	DAEYOON Corp.	2011-01-06 ~ 2012-01-06
STOP WATCH	W073-400	710378	SEIKO	2011-01-05 ~ 2013-01-05

3. Test Condition

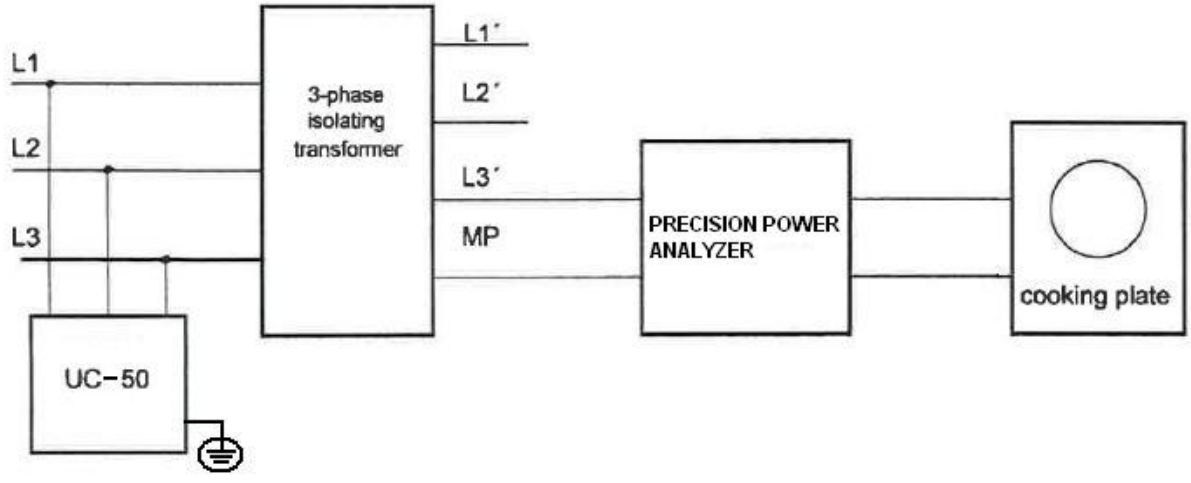
Process	Time	Remark
Pre-heating	(On:30min, Off:10min)* 1	120℃, 1000ml
Before	(On:30min, Off:10min)* 2	120℃, 1000ml
Install	10min	UC-50
Adaptation 1	more than 12 hours	120℃, 1000ml
Adaptation 2		
Adaptation 3		
Pre-heating	(On:30min, Off:10min)* 1	120℃, 1000ml
After	(On:30min, Off:10min)* 2	120℃, 1000ml

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4. Photograph of Product



5. Test Set-Up



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6. Test Result

6.1 Before installation

6.1.1 First measuring without UC-50

Time	V	Hz	A	Wh
PM 2:40:00	225.7	59.98	0.0	0
PM 2:45:00	217.5	59.95	4.3	76.40998331
PM 2:50:00	220.5	60.00	3.0	138.0598939
PM 2:55:00	226.5	59.99	0.0	182.1972804
PM 3:00:00	218.2	59.99	3.9	226.2257165
PM 3:05:00	226.3	59.99	0.0	268.7902074
PM 3:10:00	222.1	59.98	2.3	① 313.0049893

6.1.2 Second measuring without UC-50

Time	V	Hz	A	Wh
PM 3:20:00	227.5	59.99	0.0	0
PM 3:25:00	218.1	59.98	4.3	76.70668205
PM 3:30:00	219.8	59.96	3.5	142.5415251
PM 3:35:00	219.1	60.00	3.7	190.7165219
PM 3:40:00	225.6	59.98	1.7	239.873587
PM 3:45:00	224.9	59.98	2.1	289.535204
PM 3:50:00	217.1	59.99	4.3	② 338.2155585

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6.2 After installation

6.2.1 First measuring with UC-50

Time	V	Hz	A	Wh
PM 2:40:00	226.4	60.00	0.0	0
PM 2:45:00	218.1	60.00	4.3	76.53511744
PM 2:50:00	226.2	60.02	0.0	137.6314804
PM 2:55:00	218.6	60.02	3.9	179.2413911
PM 3:00:00	220.0	60.00	3.2	224.8650468
PM 3:05:00	226.4	60.02	0.0	265.7384133
PM 3:10:00	218.3	60.00	4.0	③ 308.2110326

6.2.2 Second measuring with UC-50

Time	V	Hz	A	Wh
PM 3:20:00	226.6	59.99	0.0	0
PM 3:25:00	218.0	59.99	4.3	76.04603694
PM 3:30:00	220.5	60.02	3.0	132.9507811
PM 3:35:00	221.6	60.00	2.5	174.5863011
PM 3:40:00	219.7	60.02	3.5	216.0700045
PM 3:45:00	221.8	60.00	2.5	257.4167623
PM 3:50:00	224.0	59.99	2.4	④ 299.0127759

6.3 Calculation

{(① + ②) − (③ + ④)} / (① + ②) x 100 % = 6.756042856 %

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report cannot be reproduced, except in full, without prior written permission of the Company.

7. Photograph under Test



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This report enfolded 8 pages.

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Elektrotechnik und Elektronik
FEDERAL INSTITUTE OF TECHNOLOGY
ELECTRICAL AND
ELECTRONIC ENGINEERING

MEASURING - REPORT

TGM – VA EE 33407A

Power measurement on
energy saving systems
Manufacturer: Keseco
Type: Ultra



Commissioned by:	...hartner GmbH & CoKG
Address:	...erstrasse 6...
	...g., Industriestraße 19
Order reached:	2...
Sign of order:	Hr. S. Nestler
Receiving of test sample(s):	3317 / 2010-06-15
Test period:	KW 24-26/2010
TGM-number:	515/10

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1200 Wien | Wexstraße 19-23 | t: +43 (0)1 331 26-434 | f: dw 632 | www.tgm.ac.at

Date of issue: 2010-10-20
This report enfolded 8 pages.

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Staatliche Versuchsanstalt
Elektrotechnik und Elektronik
FEDERAL INSTITUTE OF TECHNOLOGY
ELECTRICAL AND
ELECTRONIC ENGINEERING

MEASURING - REPORT

TGM – VA EE 33407A

Power measurement on
energy saving systems
Manufacturer: Keseco
Type: Ultra

Commissioned by:	Dodeka Ltd. / Elektro Schartner GmbH & CoKG
Address:	A-8045 Graz, Satteggerstrasse 60 / A-5600 St. Johann i. Pg., Industriestraße 19
Order reached:	2010-09-22
Sign of order:	Hr. S. Nestler
Receiving of test sample(s):	3317 / 2010-06-15
Test period:	KW 24-26/2010
TGM-number:	515/10

1 Test order

As ordered we carried out the power consumption and the performance of the energy saving system "Keseco Ultra" by measuring sample applications. The measurements were carried out on the same sample applications with- and without the energy saving system "Keseco Ultra".

2 Test item

Energy saving system: Keseco Ultra

Manufacturer: Keseco
8F, Namyoung Bldg., 284-49 Sung Su-Dong 2Ga, Sung Dong-Gu, Seoul, Korea

Type: U-803; U-804



Number of test samples: one per type

Ratings: U-803: nominal voltage: 100-600 V, 50/60 Hz
nominal power: 5 kVA
supply line length: 102 cm
serial number: H51004201K 107 N
dimensions: (140x90,3x40,6) mm
U-804: nominal voltage: 100-6000 V, 50/60 Hz
nominal power: 1 kVA
supply line length: 20 cm
serial number: M11006081K 049 N
dimensions: (111x80,5x32,5) mm

3 Test procedure

Every measurement was carried out under the same conditions with and without the energy saving system "Keseco Ultra" to compare the power consumption with and without the energy saving system. The energy saving system was activated with load cycles according to the manufacturers specifications (application time) before the measurement with the saving system was done.

Application 1: induction cooker – temperature controlled mode

Test assembly: the power supply (AC 230 V, 50 Hz) was connected to a voltage stabiliser and an isolating transformer. The measurement was carried out with a digital multimeter. During the measurement with the energy saving system, the energy saving system U-803 was installed parallel to the induction cooker. The test procedure and the switching cycles during the tests were specified by the manufacturer.

Load: induction cooker, manufacturer: CASO, type: Basic 2002, Art.Nr.: 2005

During every test the induction cooker was operated in the temperature control mode (reference value 120 °C).

Measurement 1: switching cycles: 4
On- / Off time: 10 min / 5 min

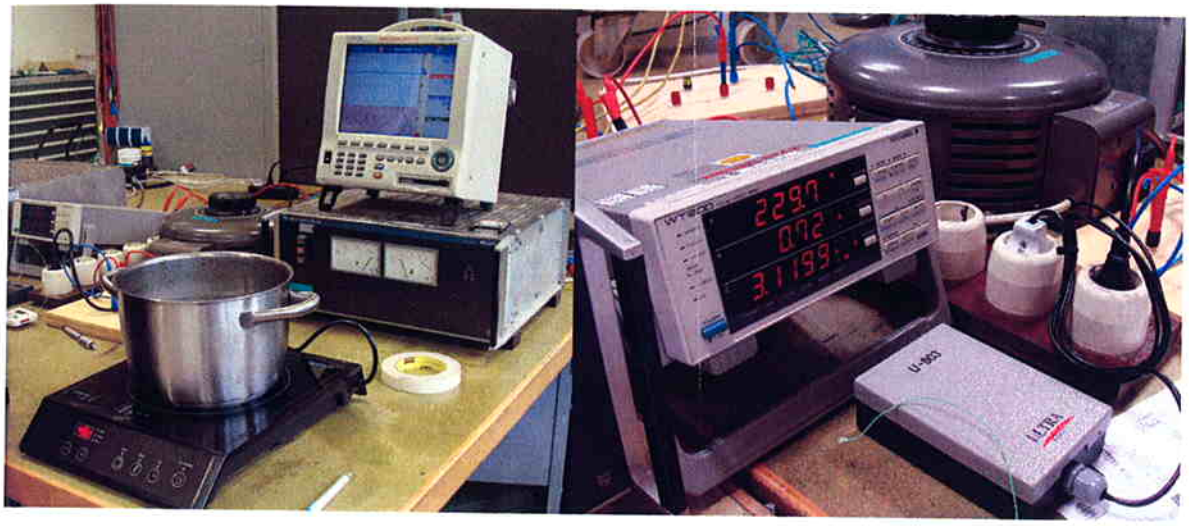
Measurement 2: switching cycles: 3
On- / Off time: 15 min / 5 min

Measurement 3: switching cycles: 3
On- / Off time: 30 min / 5 min

Measurement 1-3 was carried out without an interrupt. The water in the pot was changed after each switching cycle.

Ambient air temperature: 23±2 °C; amount of water: 2l

Application time: Ultra U-803: 7 h



Application 2.1: air conditioner– temperature controlled mode

Test assembly: the power supply (AC 230 V, 50 Hz) was connected to a voltage stabiliser and an isolating transformer. The measurement was carried out with a digital multimeter. During the measurement with the energy saving system, the energy saving system U-804 was installed parallel to the air conditioner. The test procedure and the switching cycles during the tests were specified by the manufacturer.

Load: air conditioner, manufacturer: ARTEL, type: HP09RL14R (module: indoor, outdoor)

During each test the air conditioner was operated in the temperature control mode (reference value 16 °C). The temperature in the test camber during the whole test was constant 35 °C.

Measurement 1: switching cycles: 3
On- / Off time: 5 min / 5 min

Measurement 2: switching cycles: 3
On- / Off time: 8 min / 8 min

Measurement 3: switching cycles: 4
On- / Off time: 10 min / 5 min

Application time: Ultra U-804: 5 h

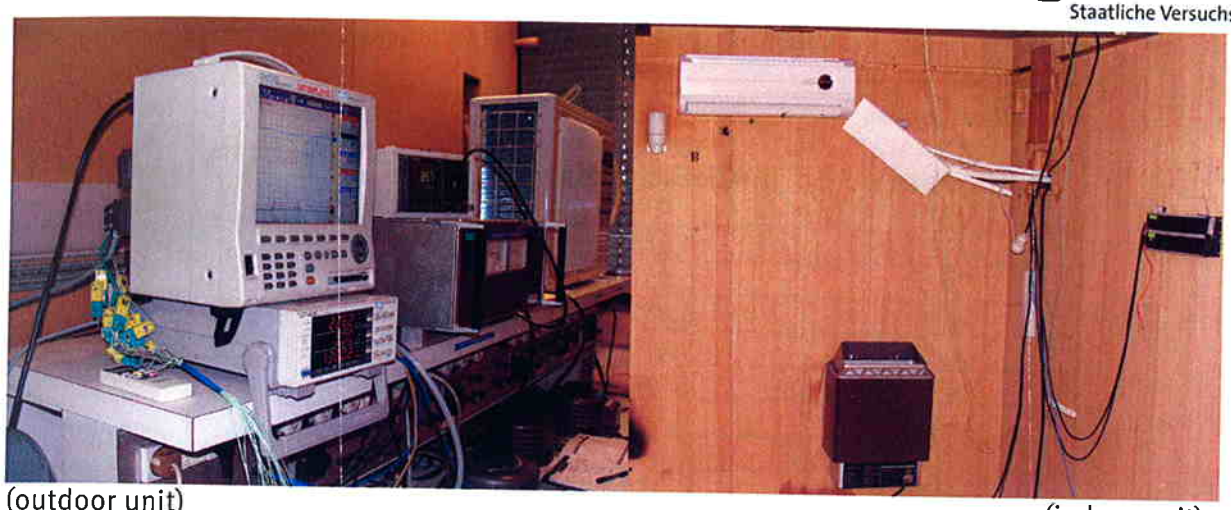
Application 2.2: air conditioner– cooling efficiency

Test assembly: the power supply (AC 230 V, 50 Hz) was connected to a voltage stabiliser and an isolating transformer. The measurement was carried out with a digital multimeter. During the measurement with the energy saving system, the energy saving system U-804 was installed parallel to the air conditioner. The test procedure and the switching cycles during the tests were specified by the manufacturer.

Load: air conditioner, manufacturer: ARTEL, type: HP09RL14R (module: indoor, outdoor)

During each test the air conditioner was operated in the temperature control mode (reference value 16 °C). The temperature in the test camber at the beginning of the test was 35 °C, the test room was not heated during the test.

Measurement : Operating time until the temperature of the test camber reached 16,8 °C.
Dimensions of the test room: (3850x2500x2100) mm



(outdoor unit) (indoor unit)

Test equipment:

designation	manufacturer	type	TGM-VA EE ID
stop watch	Quantum	440 9798	SW.00.633Ü
wattmeter	Yokogawa	WT 200	IL.11.024Ü IL.11.026Ü
recorder	Yokogawa	MV 210	IL.11.027Ü IL.11.025Ü
isolating transformer	Ben. & Jäger	W 32/13	HG.00.289H SW.00.606H
voltage stabiliser	Philips	PE 1611/00	IL.00.064H IL.11.023H
climate measuring instrument	Testo	635-2	SW.00.639Ü

4. Test result

Application 1: induction cooker – temperature controlled mode

Measurement without energy saving system:

measurement	cycle	energy consumption [Wh]	accumulated energy consumption [Wh]
1	1	225,8	225,8
	2	214,7	440,5
	3	223,4	663,9
	4	225,7	889,6
2	1	284,1	1173,7
	2	288,2	1461,9
	3	280,2	1742,1
3	1	493,0	2235,1
	2	471,7	2706,8
	3	487,2	3194,0

Measurement with energy saving system Ultra, U-803:

measurement	cycle	energy consumption [Wh]	accumulated energy consumption [Wh]
1	1	234,6	234,6
	2	224,3	458,9
	3	224,3	683,2
	4	219,7	902,9
2	1	289,5	1192,4
	2	281,6	1474,0
	3	276,2	1750,2
3	1	450,9	2201,1
	2	468,3	2669,4
	3	450,2	3119,6

Comparison:

measurement	energy consumption [Wh] without Ultra U-803	energy consumption [Wh] with Ultra U-803	comparison ΔE	
			[Wh]	[%]
1	889,6	902,9	13,3	1,50
2	852,5	847,1	-5,4	-0,63
3	1451,9	1369,4	-82,5	-5,68

Application 2.1: air conditioner– temperature controlled mode

Measurement without energy saving system:

measurement	cycle	energy consumption [Wh]	accumulated energy consumption [Wh]
1	1	26,73	26,73
	2	26,82	53,55
	3	27,02	80,57
2	1	66,87	147,44
	2	66,47	213,91
	3	66,10	280,00
3	1	91,60	371,60
	2	91,93	463,53
	3	91,53	555,06
	4	91,43	646,49

Measurement with energy saving system Ultra, U-804:

measurement	cycle	energy consumption [Wh]	accumulated energy consumption [Wh]
1	1	25,70	25,70
	2	25,64	51,34
	3	25,28	76,62
2	1	61,40	138,02
	2	61,35	199,37
	3	61,78	261,15
3	1	85,39	346,54
	2	86,02	432,56
	3	86,40	518,96
	4	88,35	607,31

Comparison:

measurement	energy consumption [Wh] without Ultra U-804	energy consumption [Wh] with Ultra U-804	comparison ΔE [Wh]	[%]
1	80,57	76,62	-3,95	-4,90
2	199,43	184,53	-14,9	-7,47
3	366,49	346,16	-20,33	-5,55

Application 2.2: air conditioner– cooling efficiency

Measurement without energy saving system:

operating time [min]	ambient temperature indoor – modul [°C]	ambient temperature outdoor – modul [°C]	energy consumption	
			energy consumption time interval [Wh]	accumulated energy consumption [Wh]
0	35,1	26,7	0	0
30	26,7	26,7	361	361
60	21,7	27,1	387	748
75	19,8	27,4	190	938
90	18,6	27,7	199	1137
105	17,8	27,6	163	1300
120	17,2	27,8	158	1458
135	17,1	27,6	123	1581
150	16,8	27,5	132	1713

Measurement with energy saving system Ultra, U-804:

operating time [min]	ambient temperature indoor – modul [°C]	ambient temperature outdoor – modul [°C]	energy consumption	
			energy consumption time interval [Wh]	accumulated energy consumption [Wh]
0	35,2	25,6	0	0
30	27,0	26,4	348	348
60	21,8	27,1	389	737
75	19,8	26,8	192	929
90	18,7	27,0	192	1121
105	17,5	27,5	193	1314
120	16,8	27,2	154	1468
135	16,8	27,1	125	1593
150	16,4	27,2	129	1722

Comparison:
The target temperature (16,8 °C) was reached 30 min earlier with the energy saving system U-804. The ambient temperature of the test camber after the whole operating time (150 min) was 16,4 °C. During the whole operating time the accumulated energy consumption with the energy saving system U-804 was 9 Wh (= 0,53%) higher.

5 Summary

Assuming the conditions described in clause 3 of this report, the following peak values of saved energy were measured:

- Application 1: induction cooker – temperature controlled mode:
  Peak value of saved energy at measurement 3 with Ultra U-803: 5,68%
- Application 2.1: air conditioner– temperature controlled mode
  Peak value of saved energy at measurement 2 with Ultra U-804: 7,47%
- Application 2.2: air conditioner– cooling efficiency:
  Target temperature was reached 30 min (20%) earlier, with a slightly higher energy consumption of 9 Wh (+0,53%).

The measured values are not applicable for interpretation of other load situations.

tgm Staatliche Versuchsanstalt

The present report

is including 8 Pages
0 Appendix(es) (with 0 pages)

Offical in charge: Ing. Dominic Litzka

Vienna, 2010-10-20

Rund-siegel

Prof. Dipl.-Ing. Dr. Wolfgang Nitsche
Head of Department

Dipl.-Ing. Karl Reischer
Principal

1. The test results recorded in this document refer exclusively to the test item described.
2. The documentation and material returned to the client have been marked when necessary by the Testing Institute as far as this is possible.
3. A third party will only be notified of the content of this document at the written agreement of the client.
4. The reproduction of excerpts from this document shall require the permission of the Testing Institute.

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Division:
Product Safety

Contact:
Ing. Johann Lipp
Telephon:
+43 (0)1 61091-6730
li@tuv.at t

TÜV ®

Company
DODEKA Ltd.

To the attention of Mr. Stefan Nestler

Statteggerstraße 60
A-8045 Graz

Vienna, 22.06.2011
dodw0209-LI

Regarding: Power consumption measurement with and without power saving device
(TÜV order no: 2011-PS/PZW-EX-0068)

REPORT

As per the order, TUV Austria carried out a comparative measurement of the power consumption of an induction hob with and without power saving device in June 2011.

Applicant:	**DODEKA Ltd.** Statteggerstraße 60 A-8045 Graz
Test object:	Power saving devices UC-50 and UR-7
Manufacturer:	KESECO CO., LTD. Korea

Testing Laboratory,
Inspection Body,
Certification Body,
Calibration Laboratory,
Gaugeing center

Notified Body 0408

Non-executive Board of Directors:
KR Dipl.-Ing. Johann MARIHART

Management:
Dipl.-Ing. Dr. Hugo EBERHARDT
Mag. Christoph WENNINGER

Registered Office:
Krugerstrasse 16
1015 Vienna/Austria

Branch Offices:
Dornbirn, Graz, Innsbruck, Klagenfurt, Linz, Salzburg, St. Pölten Wels, Vienna, Brixen (I) and Filderstadt (D)

Company Register Court / - Number:
Vienna / FN 288476 f

Bank Details:
UC BA 52949 001 066
IBAN
AT131200052949001066
BIC BKAUATWW
RZB 001-04.093.282
IBAN
AT153100000104093282
BIC RZBAATWW

VAT ATU63240488
DVR 3002476

Test object - Figures:

Power saving device UR-7



Specification plate:



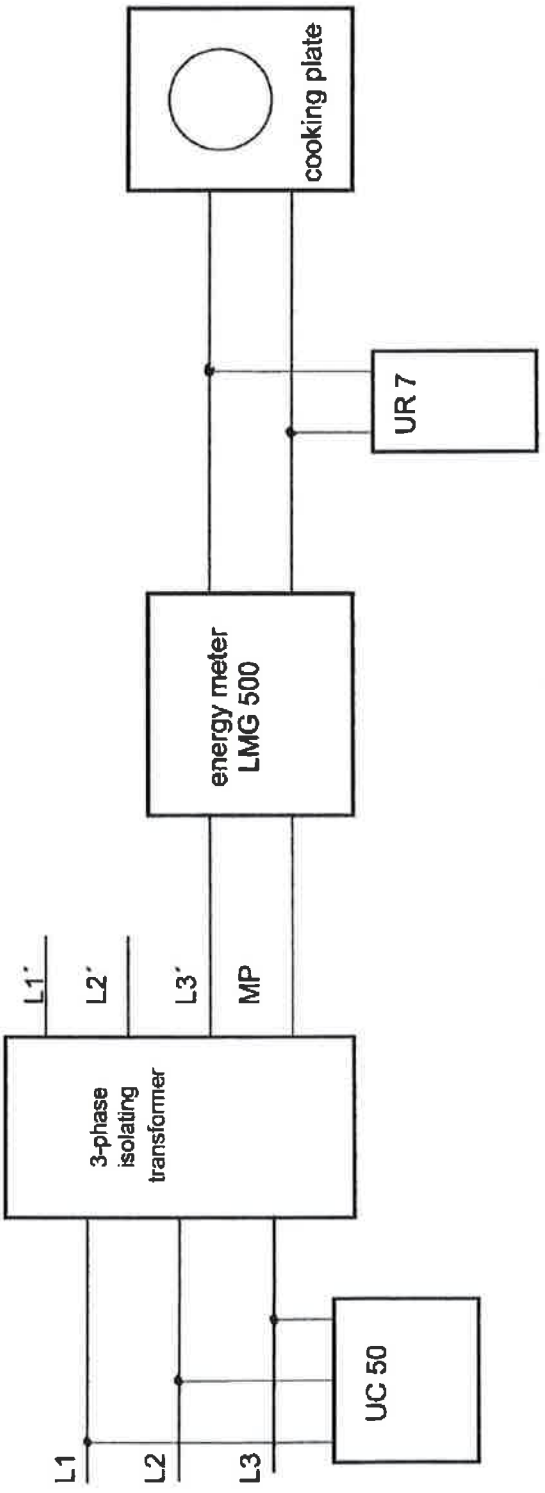
Power saving device UC-50



Specification plate:



Test setup:



UC 50.....3-phase energy saving appliance
UR 7.....1-phase energy saving appliance
3-phase isolating transformer...400V//400V/230V//3500VA
energie meter.....LMG 500, Zimmer Electronic Systems
cooking plate.....induction hob, CASO BASIC 2002, Mod. C20L

Figure Induction hob:



Specification plate of the induction hob:



Carrying out the test:

The power required for boiling 1 litre of water on a new induction hob was first measured without power saving devices.
The induction hob was used several times for boiling 1 litre of water for 30 minutes respectively before recording the power consumption values. Before recording the first power consumption value, it was ensured that the induction hob was cold. That is, the last boiling operation took place 30 minutes before recording the value.
The second and third power consumption measurements were carried out 10 minutes after the previous boiling operation. The temperature on the induction hob was set to 100 ° C.

One boiling operation lasted for 30 minutes, the water temperature was 21.5 °C at the start of each boiling operation, the amount of water used was 1 litre, and the ambient temperature was 25 °C during the boiling operation.

1) Measuring the power consumption without power saving devices:

1. Boiling operation: Average value of the operating voltage during the boiling operation:	228.5V
Time required for the water to reach 90 °C:	3 minutes 54.5 s
Power consumption for the water to reach 90 °C:	104.9 Wh
Power consumption for 30 minutes of boiling time:	680.0 Wh

2. Boiling operation: Average value of the operating voltage during the boiling operation:	228.5V
Time required for the water to reach 90 °C:	3 minutes 49.5 s
Power consumption for the water to reach 90 °C:	104.08 Wh
Power consumption for 30 minutes of boiling time:	656.2 Wh

3. Boiling operation: Average value of the operating voltage during the boiling operation:	229.4V
Time required for the water to reach 90 °C:	3 minutes 51.5 s
Power consumption for the water to reach 90 °C:	104.3 Wh
Power consumption for 30 minutes of boiling time:	641.85 Wh

Total power consumption for the 3 boiling operations each of 30 minutes without power saving devices:	**1978.05 Wh**

After measuring the power consumption without the power saving devices, the two power saving devices were installed in the test setup and an adaptation period of 2 days was followed during which the test setup was constantly connected to the mains power and several boiling operations were carried out with 1 litre of water each for 30 minutes. Before recording the first power consumption value, it was ensured that the induction hob was cold. That is, the last boiling operation took place 30 minutes before recording the value.
The second and third power consumption measurement with power saving devices were carried out 10 minutes after the previous boiling operation. The temperature on the induction hob was set to 100 ° C.

One boiling operation lasted for 30 minutes, the water temperature was 21.5 °C at the start of each boiling operation, the amount of water used was 1 litre, and the ambient temperature was 25 °C during the boiling operation.

2) Measuring the power consumption with power saving devices:

1. Boiling operation: Average value of the operating voltage during the boiling operation:	230.1V
Time required for the water to reach 90 °C:	3 minutes 54.0 s
Power consumption for the water to reach 90 °C:	104.9 Wh
Power consumption for 30 minutes of boiling time:	635.6 Wh

2. Boiling operation: Average value of the operating voltage during the boiling operation:	229.6V
Time required for the water to reach 90 °C:	3 minutes 51.5 s
Power consumption for the water to reach 90 °C:	104.08 Wh
Power consumption for 30 minutes of boiling time:	614.0 Wh

3. Boiling operation: Average value of the operating voltage during the boiling operation:	229.0V
Time required for the water to reach 90 °C:	3 minutes 48.5 s
Power consumption for the water to reach 90 °C:	104.3 Wh
Power consumption for 30 minutes of boiling time:	630.2 Wh

Total power consumption for the 3 boiling operations each of 30 minutes with power saving devices:	**1879.80 Wh**

Percentage difference between the power consumption for 3 boiling operations with and without power saving devices: 1879.80 Wh / 1978.05 Wh = 0.95 ⇒ Saving: 5.0%

Test result:

The comparative measurement of the power consumption of an induction hob with and without power saving devices UC-50 and UR-7 manufactured by KESECO CO., LTD. showed a saving of 5.0% of power consumption under the same conditions, without the rate of heating decreasing.

The measurement inaccuracy of the energy meter LMG 500 used is ± 0.5Wh.
The measurement inaccuracy of the temperature measuring device used (data logger HIOKI 8430-20 with thermocouples) is ± 0.50 °C.

We hope this information is of use to you.

TÜV AUSTRIA SERVICES GMBH

Engr. Johann Lipp
Senior expert Product Safety - Electrical

Engr. Zoltan Frakas
Technical expert - Electrical

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03 Letters

Adventure Whitsunday
RESORT CARAVAN PARK

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P: 07 4946 1166 F: 07 4946 1595
E: resort@whitsunday.net.au
www.adventurewhitsunday.com.au
ABN 49 506 427 769

23.04.12

Mr. David Hutchen,
Ultra Energy Australia
1 Peel Street
Mackay 4740

Dear David,

Just a short note to thank you and Ultra Energy for the Ultra UC- 200 that was installed in November 2010. Since the installation, we here at Big4 Adventure Whitsunday Resort have seen on average an 8.30% saving on our power bill and quiet often receive up to 11% savings. Our payback for the Ultra UC-200 should be around the 8 months which we are very happy about. The dollar saving and power saving are appreciated when expenses are continually going up.

Thanks for your help Dave, hopefully we can catch up next time your in town.

Best Regards

Greg McKinnon

BIG4 HOLIDAY PARKS
AN INDEPENDENT MEMBER OF
BIG4 HOLIDAY PARKS OF AUSTRALIA PTY LTD

big4 airlie cove
RESORT & VAN PARK
BIG4 HOLIDAY PARKS
★★★★☆

14/9/11

MR.David Hutchen,

Ultra Energy Australia

1 Peel St.Mackay.4740

Dear David,

Thank you for sending the data analysis for the energy saving as a result of installing the Ultra UC-50 box.

We are very impressed with 12.1% reduction in electricity usage since the installation and even more with the 5.5 months payback on our investment.

The power saving and dollar benefit are much appreciated in these difficult times.

Thank you for all your help and assistance and I look forward to catching on your next visit to Airlie Beach.

Best Regards,

John Beaumont

Ph: 4946 6727 Fax: 4946 5526 Toll Free: 1800 653 445 www.airliecove.com.au
PO Box 820 Airlie Beach, Qld 4802. 2km through Airlie Beach on the way to Shute Harbour

Reefvine Pty Limited

Registered Office:
50 Starboard Circuit,
SHOAL POINT QLD 4750

Postal Address:
PO Box 10110
MT PLEASANT QLD 4740

ABN: 2811 8549 509

Phone: (07) 4954 6400
Fax: (07) 4954 8585
Email : admin@reefvine.com.au

18th March 2011

Dear Phillip,

RE: ULTRA ENERGY DEVICE

We installed a 100 KVA Ultra Energy Device around 13 months ago at my Bucasia Service Station, here are my findings:

I have assessed the power consumption at the site we installed the Ultra Energy Device. We have studied the consumption data over a 12-month period comparing the usage to the previous 12 months and the result is clearly at least a 10% reduction in electricity consumption, very clearly due to the introduction of the Ultra Energy Saver.

It is important to note that each of the other three sites that I own have increased in electricity consumption over the same period. Between all the sites I own, the only one that has shown reduced electricity consumption is the one that has the Ultra Device installed. It is my view that the conditions have been similar between all of the sites and therefore the reduction is due to the Ultra installation. Therefore, it should be consistent that the Bucasia site would also have increased in energy consumption in line with the other sites, it has not and indeed we can see a clear reduction of at least 10% over the previous year notwithstanding that the trend over the last few years across all sites has been increased consumption.

The figures I have used are a direct comparison to the previous 12 months energy usage and given that all other sites have increased, it is fair to state that the Ultra has made a significant difference, and on balance most likely has contributed to a greater saving than 10%.

I am looking forward to introducing the ULTRA to my other businesses as the investment in this technology both makes commercial sense and represents a very acceptable return on investment.

Thank you for introducing us to the ULTRA.

Sincerely,

B. N. Hollett

Bruce Hollett
Director Reefvine P/L

21 November 2012

To Whom It May Concern:

In early April 2012 I purchased an Ultra Energy device for Caltex WOW Waitara, which was installed on 19/4/2012.

The decision to purchase and invest in this technology was a commercial decision based on a guarantee provided by UEA that in the even that if I could not evaluate a result I would receive a refund.

The results are clearly demonstrated that the site has used 11.9% less KWh since the introduction of the Ultra over a 5 month period.

Whilst my energy bills have not actually decreased in $ terms this is because the price of energy has increased; so, had the Ultra not been installed my electricity bills would have been higher.

The Ultra has saved in excess of 11% energy consumption since install.

If you require any further information, please do not hesitate to contact me on 04 18 859 329

Yours faithfully



Emile Nader (AAIQS. BBE. JP)

Director

Dirección Ejecutiva

Avda. 15 No. 106-57 Piso 4º.
Santafé de Bogotá, D.C.
Tel.: (57.1) 657 97 97
Fax: (57.1) 523 03 44

Señores
Keseco Colombia Ltda..
La ciudad

Para Grandes Superficies de Colombia S.A. es gratificante poder contar con proveedores como ustedes, y en pro de que esta relación comercial continué fortaleciéndose, estamos inicialmente interesados en la adquisición de los equipos ULTRA para cuatro (4) de nuestras tiendas, sin embargo es de considerar que los tiempos de retorno de la inversión contemplados en el proyecto inicial, se verán afectados por los costos actuales de los equipos ULTRA.

Considerando que el proyecto de inversión sobre estos equipos continuara, solicitamos a ustedes un descuento del 7% sobre los precios inicialmente cotizados.

Atentamente,



Luis Alejandro Agudelo Rojas
Jefe Sección Central de Compras

cooleyshotel

8/11/2010

Mark,

Following the installation of an Ultra power saver in Cooleys Hotel, I am pleased to say we have seen a positive result.

We are always seeking ways to reduce electricity use and in turn reduce our carbon footprint and your product was presented to us with some impressive claims.

Since the installation of ultra we have recorded a reduction on power usage in excess of 10%. This translates in to a return on investment of around 11 months.

Based on our results, I would recommend ultra to any business looking to save on electricity.

I look forward to continued savings as we install in more of our businesses.

Best Regards,

Alexia Kalis

General Manager
Kalis Hotels Pty Ltd

49 Main Road Moonah, TAS 7009 P: 03 6282 6033 F: 03 6278 1972 E: cooleys.hotel@hotelcooleys.com.au

ศูนย์อนุรักษ์พลังงานแห่งประเทศไทย
ภายใต้การดำเนินงานของ สภาอุตสาหกรรมแห่งประเทศไทย
THE ENERGY CONSERVATION CENTER OF THAILAND
UNDER THE MANAGEMENT OF THE FEDERATION OF THAI INDUSTRIES

13 December 2011

Re: The results of energy saving equipment (ULTRA).

To: Executive Director of W.S.I. Co.

Letter from the W.S.I Co, Limited, dated 22 September 2011 for the donation of equipment, energy saving (ULTRA).

According to the result of the testing and measuring of the equipment. Energy saving device (ULTRA) which showed that the test results. Energy saving device (ULTRA) can save up the power usage to 13.35% and an average electricity cost savings of 8% from the electricity bill. The Energy Conservation Center of Thailand has been successfully tested it.

The Energy Conservation Center of Thailand. I certify that energy-efficient equipment (ULTRA) can actually save energy. The results prompted the company.

The Energy Conservation Center also would like to thank you for your courtesy and energy saving devices, ultra (ULTRA) version 30KVA/220 volt Model. UR-30(Serial No. KEU-H11008192K025N) to be used in the Energy Conservation Center of Thailand

Regards,

Poongjaroon Srisovanna

Director

08 Δεκεμβρίου, 2011

Βεβαίωση

Με βάση τα στοιχεία ενεργειακής μελέτης που πραγματοποιήθηκε από ανεξάρτητη εταιρία, σχετικά με την εγκατάσταση συστημάτων εξοικονόμησης ηλεκτρικής ενέργειας από την εταιρία Hellas Energy (Μυτιληνέλης Group of Companies) στα εγκαταστάσεις της H.M. Housemarket (Cyprus) Ltd (IKEA), πραγματοποιήθηκε συνολικά εξοικονόμηση ηλεκτρικής ενέργειας της τάξης του 13,5% κατά την περίοδο 01/09/2010-01/09/2011.

Η εξοικονόμηση επιτεύχθηκε με την εγκατάσταση συστημάτων ULTRA, τύπος U-1000 και U-500 (ισχύος 2000kVA) της εταιρείας Hellas Energy.

Για την H.M. Housemarket (Cyprus) Ltd (IKEA CYPRUS)

Κωνσταντίνος Μουρουζίδης
Διευθυντής

FOURLIS GROUP
.M. HOUSEMARKET (CYPRUS) LTD

CORRESPONDENCE ADDRESS:
P.O. Box 17068
2260 Nicosia, Cyprus

STORE ADDRESS:
1, Verginas Street
2025 Strovolos,
Nicosia, Cyprus

REGISTERED OFFICE:
12, Esperidon Street,
4th Floor
1087 Nicosia, Cyprus

Tel.: +357 22502500
Fax: +357 22502599
e-mail:
cs.cyprus@ikea.com.cy

IKEA

8 of December 2011

Certificate

Based on the energy study, which was conducted by an independent company, for the installation of energy saving system which was carried out by Hellas Energy Company (Mitilinelis Group of companies) at the premises of H.M. Housemarket (Cyprus) Ltd (IKEA), it was found out a total saving of 13,7% during the period 01/01/2011 - 31/08/2011.

This percentage of saving was achieved by the installation of Ultra devices, UC-1000 and UC-500 (total capacity 2000kva) from Hellas Energy Company.

For H.M Housemarket (Cyprus) Ltd (IKEA CYPRUS)

Konstantinos Mourouzidis
Director

MERCK

Fecha *(Date)*	2008/04/7
División / Dept.	FINANCIERA Y ADMINISTRATIVA
Teléfono *(Phone)*	4254770
Fax	4207821
e-Mail	Mcaceres@merck .com.co
Referencia *(Subject)*	CERTIFICADO.

Señores
Keseco Colombia Ltda
Dirección
Ciudad

Attn: **Sr. DAE-JUNG, KIM**
Gerente

Apreciado Sr. KIM.

Por medio de la presente queremos confirmarle, que los equipos Ahorradores de Energía Ultra Instalados por Keseco en las S/E que suministran el servicio de energía eléctrica a nuestro laboratorio, dieron como resultado un ahorro promedio del 10,2% comparado con los indicadores de producción de nuestra empresa.
Adicionalmente la instalación de Ultra fue sencilla y no afectó la calidad del servicio; es decir el ahorrador cumplió con nuestras expectativas y lo recomendamos como una excelente solución para planes de ahorro de energía eléctrica y un gran aporte en el mejoramiento del medio ambiente, que son unas de las preocupaciones más sentidas de nuestra Empresa .

Cordialmente

Manuel Cáceres
Coordinador de protección ambiental.
MERCK S.A

Merck S.A.
Carrera 65 No. 10 – 95 Bogotá D. C. Colombia
Apartado Aéreo 9896
PBX 57 1 4254770
Servicio al Cliente 01 8000 121200 / 11
Fax 57 1 4207818 / 19 / 20 / 21
Internet e-mail mesa@merck.com.co
Pagina Web www.merck.com.co

SPH

Sydney Park Hotel

ABN: 72 740 486 143

To Ultra Energy

Back on 30th of September 2011 Robert from In Power Electrical supplied and installed an Ultra Energy Saving Device model N: UR-30 into Sydney Park Hotel.

As we have been looking into saving energy with the electricity prices increasing and with the upcoming Carbon Tax we had nothing to lose as there results are guaranteed.

Since the installation of the Ultra Energy Saving Device within the first five months we have recorded an 8% in savings.

I would like to thank Robert and Ultra Energy for introducing me to this device and would be very happy to recommend it to other business out there.

Sincerely

Robyn Fotheringham

631 King Street Newtown NSW 2042 P: 02 9557 1188 F: 02 9517 1545



11th July, 2012

To Whom It May Concern

I have just recently installed an Ultra Energy Power Saver device at the Denison Hotel in Bowen and have achieved a remarkable result with a 10.2% saving in consumption.

I was originally dubious about the sales pitch on savings but as I have known the presenter Paul Hunt for most of his life and respect him as an individual I took the risk.

I have just instructed Paul to install a device in my other property the Merinda Hotel just outside of Bowen.

I am most impressed and can highly recommend this device.

Yours Faithfully

B J ALLEN

Director

Denison Hotel Pty Ltd

The Denison Hotel Pty Ltd
55 Powell Street Bowen 4805
Ph: 07 47861533 Fax: 07 47861668 www.thedenison.com.au

ABN: 75 757 650 316

11 Ιουνίου 2011

ΖΑΓΟΡΙ
φυσικό μεταλλικό νερό

ΧΗΤΟΣ Α.Β.Ε.Ε.
12° ΧΙΛ. ΙΩΑΝΝΙΝΩΝ ΚΟΝΙΤΣΑΣ
ΙΩΑΝΝΙΝΑ
Τηλ.: 26510 62781

ΒΕΒΑΙΩΣΗ

Με την παρούσα βεβαιώνουμε ότι η εταιρία **Hellas Energy (Δ. ΜΥΤΙΛΗΝΕΛΗΣ ΗΛΕΚΤΡΟΝΙΚΑ ΕΠΕ)**, εγκατέστησε την συσκευή εξοικονόμησης ηλεκτρικής ενέργειας **ULTRA**, τύπος **UC 200 3P 200 KVA**, σε υποπίνακα στο *Εργοστάσιο Εμφιάλωσης Νερού της Εταιρίας μας, στην* ***Κρανούλα Ιωαννίνων*** και πραγματοποίησε καταγραφή των φορτίων της εγκατάστασης και της κατανάλωσης σε kwh, για την περίοδο **8/4/2011 έως 5/5/2011**, από την οποία καταγραφή προκύπτει μείωση της κατανάλωσης ηλεκτρικής ενέργειας σε ποσοστό **12,75 %**.

Για την ΧΗΤΟΣ ΑΒΕΕ

ΜΑΝΤΖΟΥΚΑΣ ΠΑΥΛΟΣ
ΗΛΕΚΤΡΟΛΟΓΟΣ Τ. ΜΗΧΑΝΙΚΟΣ
ΤΕΧΝΙΚΟΣ ΠΡΟΪΣΤΑΜΕΝΟΣ
ΧΗΤΟΣ Α.Β.Ε.Ε.

Μαντζούκας Παύλος

Τεχνικός Διευθυντής

11th June 2011,

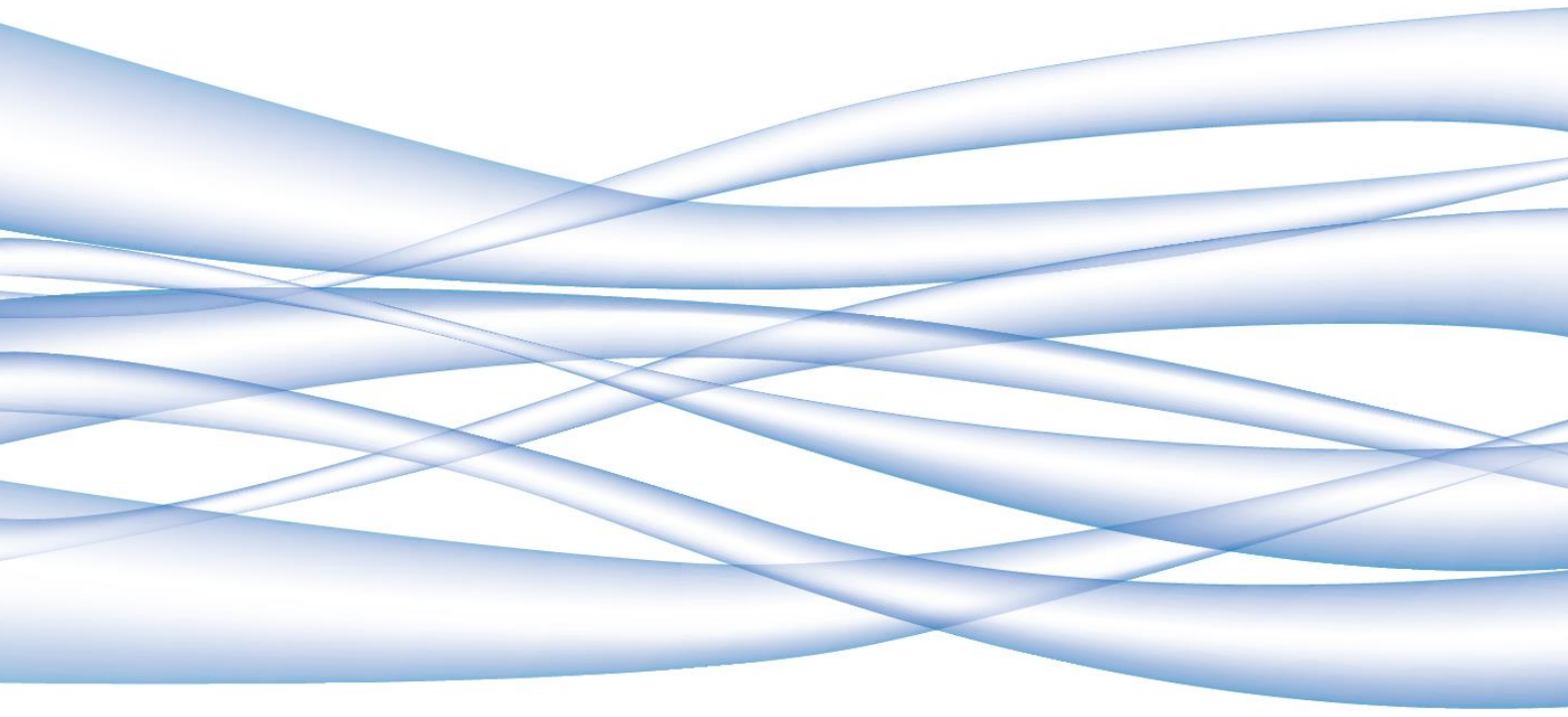
ZAGORI
CHITOS S.A.
12km IOANNINON –KONITSAS
IOANNINA
Tel. 26510 62781

Letter

With this letter, we would like to inform that HELLAS ENERGY (MYTILINELIS ELECTRONICS LTD) installed energy saving device ULTRA, UC 200, 3P 200 KVA, in sub-electric board in our water bottling factory in Kranoula Ioanninon, and measured our loads and consumption KWH for period 8/4/2011 until 5/5/2011. From these measurements resulting electricity energy saving rate 12,75 %.

Mantzoukas Paulos

Technical Director



KESECO

Namyoung Digital Tower 8F, Seongsuil-ro 84, Seongdong-gu, Seoul, South Korea 133-120
Office: +82-2-3409-1105 | Fax: +82-2-3409-2106
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