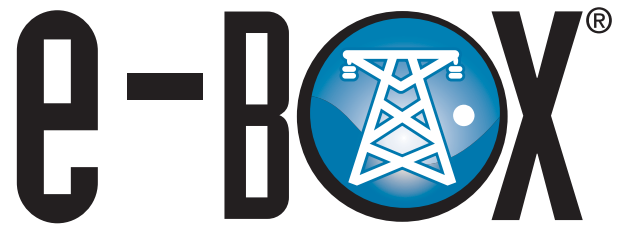


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energy systems

The Port of Felixstowe was an early adopter of Ebox in the UK and has been enjoying the benefit since February 2008.

## Case Study



'Blue Sky Thinking'

reducing your footprint...



## Case Study: Port of Felixstowe Light Tower

Port of Felixstowe, The Dock  
Felixstowe, IP11 3SY

8th February 2009

### The impORTance of shipping in savings

**Port of Felixstowe:** e-box energy systems installed on the 8th February 2008.

**The purpose:** To reduce energy consumption of illumination/light sources in areas as specified by Port of Felixstowe.

This document specifies the energy saving made by the e-box installation on the 8th February 2008 the e-box assembly being applied to an external Lighting Tower.

The survey of parameter readings are made by the power analyser 'Carlo Gavazzi', model WM14 installed inside the equipment. The analyser makes a continuous reading of the electrical consumption.

#### Photographs of the system:





## Business Case

### Benefits from installing the e-Box

Investment Required	
Capital Outlay	£2,250.00
Annual Saving Forecast	£1,097.00
Internal Rate of Return on the investment (ROI)	49%
Time to Recoup (in months)	25
Monthly positive cash flow after recouping investment	£91.00

Financing Structure	
Structure	N/A
Cash Requirement	N/A
P & L implication	£91.44

Electricity Bill Saving		
Kilowatt hours	from 49,866 down by 25%	12467
Cash Valuefrom	from £3,431.00 down by	£997.00

Additional Savings	
Bulb replacement and Disposal savings	£100.00

Carbon Trading and Environmental Issues	
CO2 SAVING PER YEAR (Kg)	6,233.00
Petrol Equivalent in metric tons	2.7

Annual Running Costs Changes	
Present Day Running Costs	£4,006.96
Forecast Running Costs with e-Box	£2,909.64
Percentage Saving	<b>27.39%</b>



## Calculation of the financial saving obtained

### We certify that:

On the 8th of February 2008, we installed N.1 cabinets model CE\_25\_25\_25\_IP44 at The Felixstowe Docks, Lighting Tower

### Description of the activity:

The system has been installed to manage the distribution board of the lighting tower. The measurements have been made by power analyzer: FLUKE 43, SIT certificated with the sytem working in by-pass first then in Saving mode for comparison.

Lamps type Sodium High Pressure 1000W

The lamps are over theri 60% - 65% ot their life span.

### Instant test survey parameters

'e-box' saving level set to	2L3 - 2L3 – 2L3
Medium absorbed power in saving mode	2,95 kW
Medium absorbed power in by-pass	4,00 kW
<b>Saving % calculation</b>	<b>26,25 ± 2%</b>

The e-box technology, apart from reducing drastically the energy consumption of the light sources, gives benefits for:

- Reduction of the maintenance costs by 30/40%;
- Reduction of the CO2 emission in the atmosphere, helping the preservation of the environment.

**By this project 6,233.00 Kg of CO2 emissions will be annually saved on just 1 Lighting Tower.**

Garziera Mattia  
(Energia Europa Srl)

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Cod. Fisc. 02065010230



## System description



### Quality Control

Data \_\_\_\_\_

Operator \_\_\_\_\_

### Test

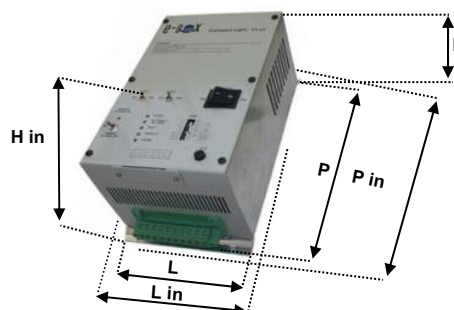
Data \_\_\_\_\_

Operator \_\_\_\_\_

Load Power	2800 VA
Current	12 A
Supply Voltage	230V 50 Hz Single Phase
Output Voltage	Selectable 8 Levels
Supply Voltage Waveform	Sinusoidal
Output Supply Voltage Waveform	Sinusoidal
Harmonic Distortion	Nobody
Power Factor	Cos $\phi > 0,5$
Load Variance	100 %
Manual By Pass	Standard
Automatic Forced By Pass	Standard
Warm Up	16 Levels ( Selectable )
Under Supply Voltage	5 Levels ( Selectable )
Under Supply Voltage Areas	2 ( Selectable )
Under Supply Voltage Exclusion	Standard
Function status Leds	
Automatic Thermic Protection	
Galvanic Insulation from the Net	
Testing of the Supply Power parameters	

Case	Metallic
Weight	8 Kg
Cooling System	Natural
Degree protection	IP 20 ( according IEC-529)
Work Area Temperature	da - 15 °C a + 50 °C
Humidity	0 - 97 %

Installation Dimension	H in	140 mm	Overall Dimensions	H	120 mm
	P in	310 mm		P	275 mm
	L in	165 mm		L	145 mm



### ACCESSORIES

Module CI2	Fault Signal + Automatic Forced By Pass
Module CR123	Electric Signals Collection coming from CI2 Module
Digital Power Supply Meter	