Accrue Energy & Power Inc

Electrical Engineering Solutions

Lighting Cost Saving System..
Decrease your bills by over
25% or more...

ACCRUE GROUP

MEKKOUDI AUTOMATION
ENTREPRISE DE DISTRIBUTION ET DE TRAVAUX ELECTRIQUES

COST SAVING LUMINOUS FLUX REGULATORS FOR LIGHTING IN PUBLIC AND PRIVATE LIGHTING SYSTEMS…

Presented by:

ACCRUE ENERGY INC

In partnership with:

MEKKOUDI AUTOMATION

ACCRUE GROUP

MEKKOUDI AUTOMATION
ENTREPRISE DE DISTRIBUTION ET DE TRAVAUX ELECTRIQUES

- I – Technical and Economical Benefits
- II – Targeted sectors
- III – Luminous Flux Regulator

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I – Technical & economical Benefits

II – Targeted sectors

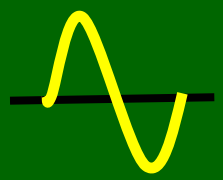
III - Stalvial Luminous Flux Regulator

ECONOMICAL BENEFITS

$

- ✓ Energy cost saving of 25% or more….
- ✓ Increases the service life of the lamps
- ✓ Savings on the maintenance of the facilities
- ✓ Fast return on Investment or Leasing fees..

TECHNICAL BENEFITS



- ✓ High quality of the energy supplied
- ✓ Uniform illumination
- ✓ Output voltage stabilization
- ✓ Does not reactive energy
- ✓ Visual control of the equipment status
- ✓ Equipement monitoring from any geographical point

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Public Lighting

- *Avenues / Streets*
- *Highways*
- *Roundabouts*
- *Bridges*
- *Parks*
- *Gardens*
- *Hospitals*
- *Airports*
- *Ports*
- *Trains stations*
- *many many more……..*

Targeted sectors

Private Lighting

- *Shopping centres*
- *Offices*
- *Sports facilites*
- *Parkings*
- *Hospitals*
- *Companies*
- *Warehouses*
- *Hotels*
- *Private Parks*
- *Private gardens*
- *Many many more……..*

The product range includes single and tri-phase installations with a range of powers from 3 KVA to 120 KVA or larger Multiplex capacities.

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Normal Operating Principle

1. ***LIGHTING UP – DURATION 4 MINUTES***

Lighting Up Voltage is Adjustable 205 V or 210 V.

2. ***NORMAL LIGHTING***

Voltage Is Adjustable 220 V or 230 V.

The equipement remains in this status until it's ordered to reduce lighting

ORDER TO REDUCE LUMINOUS FLUX

Astronomical clock, programmer, remote control, etc…

3. ***LUMINOUS FLUX REDUCTION – Cost Saving Mode***

Reduced voltage *Adjustable :185 V, 190 V, 195 V or 200 V*

END OF ORDER FLOW RÉDUCTION

4. ***RETURN TO NORMAL LIGHTING***

I – Technical & economical Benefits

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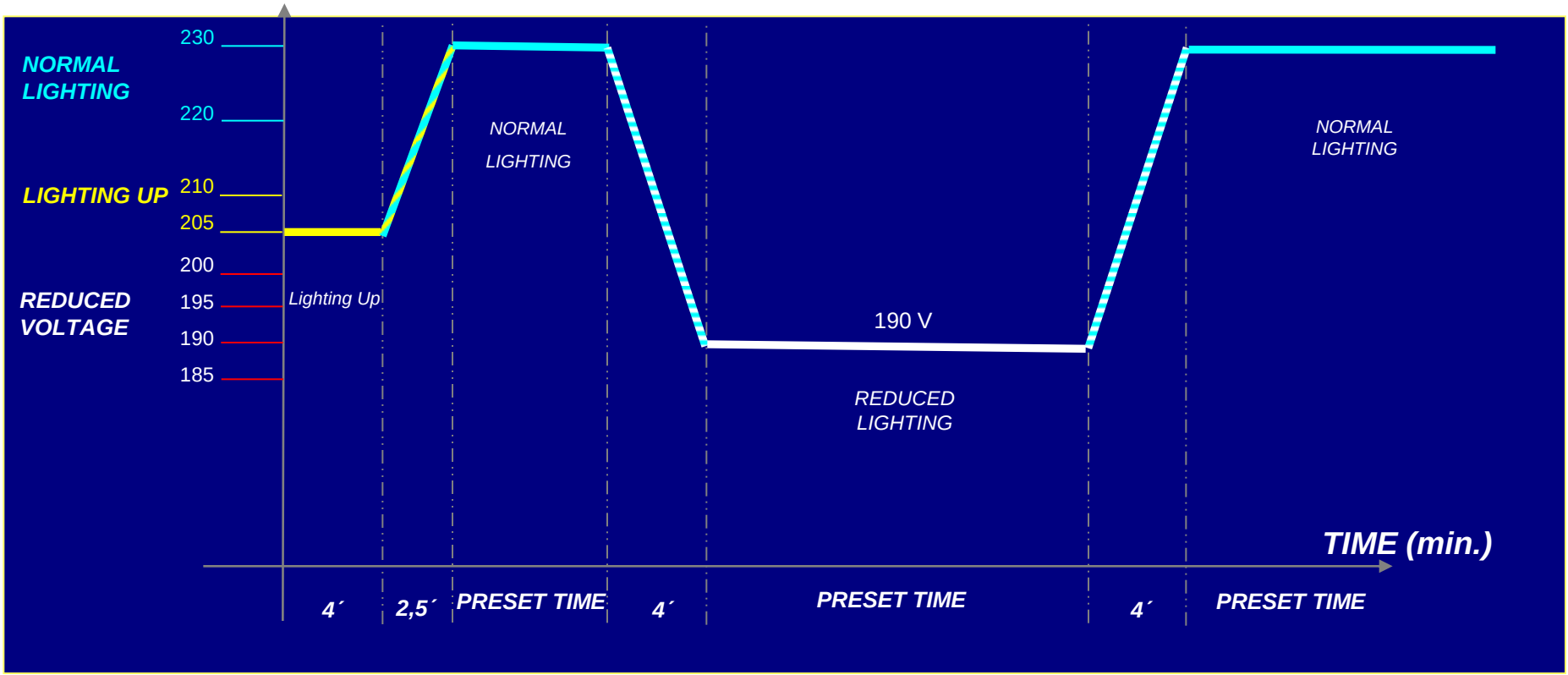
Operating Principle - Graph



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What is this equipment ?

COMPACT

✓ *SMALL*	*Small size allow's for easy location sites.*
✓ *Reliable*	*Reduced rate of failure or maintenance.*
✓ *ELEGANT*	*Design and Controls*
✓ *EASY*	*Easy and Fast to Install - Weight easy to handle*
✓ *MODULAR*	*Simple, concise and economic maintenance*
✓ *ELECTRONIC*	*Solid-state luminux flux regulation*
✓ *MODERN*	*Research & Design Systems*
✓ *INNOVATIVE*	*Latest technology*

Units are electrical networks friendly

- ✓ *Does not cause harmonic distorsion.*
- ✓ *Stabilize output voltage*
- ✓ *Protects against overvoltage*
- ✓ *Reduce the risk of failures*
- ✓ *Does not increase acoustic noise*
- ✓ *Does not increase reactive energy*

Luminous Flux Regulation is made electronically with a solid state switch and with no reactance.

Hence does not increase reactive energy.

Multi Capacity Units

The product range includes single or tri-phase installations with a range of powers from 3 KVA to 120 KVA.

IP44 - IP 54

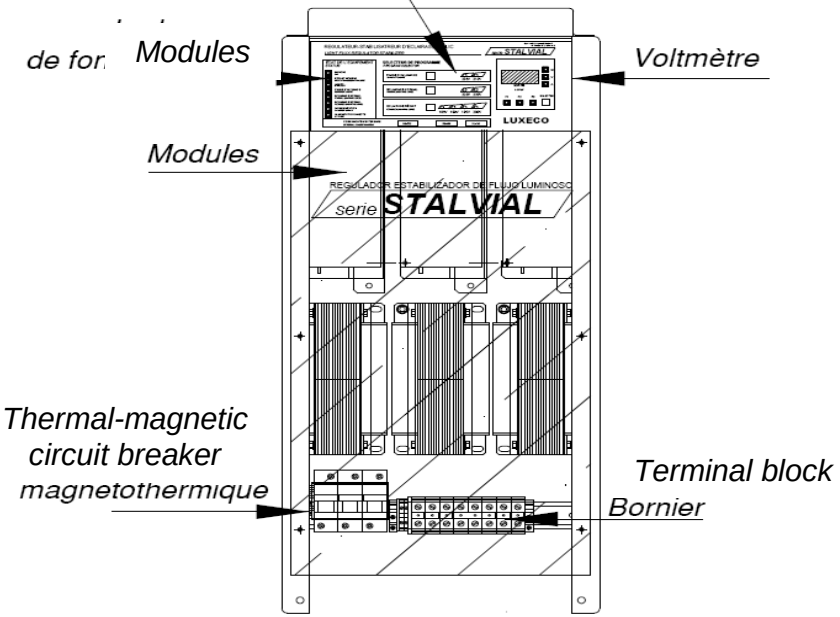
IP 20

100 - 120 KVA

60-80 KVA

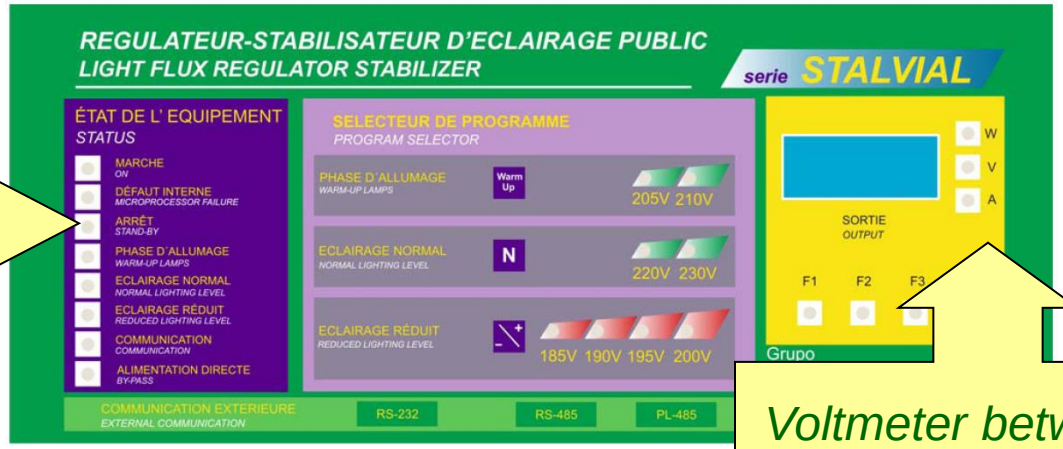
10-15-20
25-30-45 KVA

Unit Structure



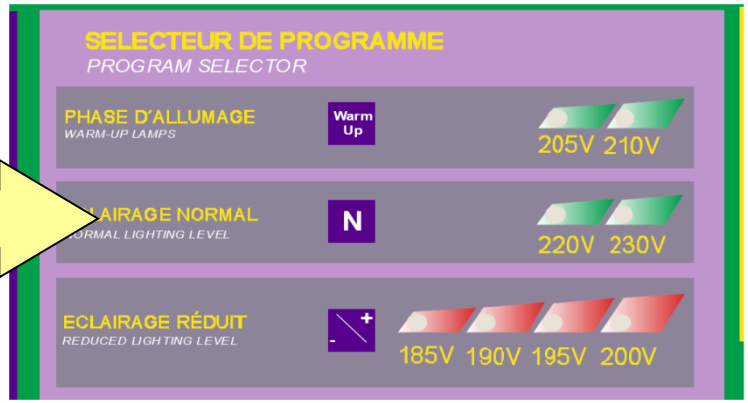
Unit Control Panel

Visual indication of equipment state by LED indicators



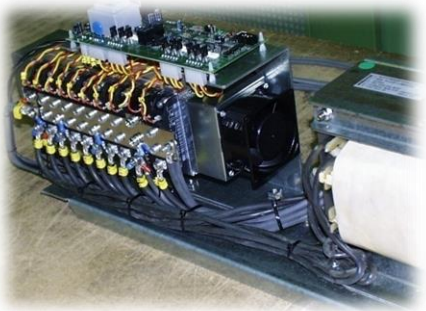
Voltmeter between phases & neutral - pushbutton selectable

Equipement setting by push-buttons



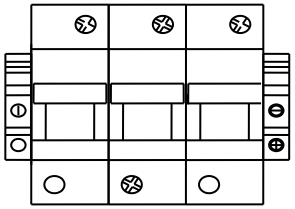
Terminal Arrangement

Module (R-S-T)

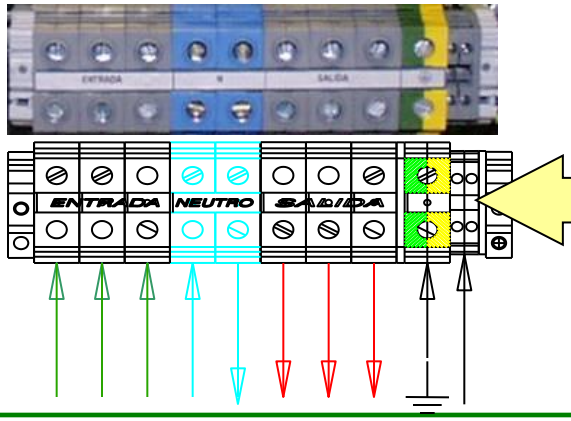


Each module has been electronically and mechanically designed to be highly efficient and easily maintained

Terminal Arrangement



Thermal-magnetic circuit breaker



Voltage-free contact to receive the order to reduce luminous flux

Dimensions –Three-Phase

Internal IP20

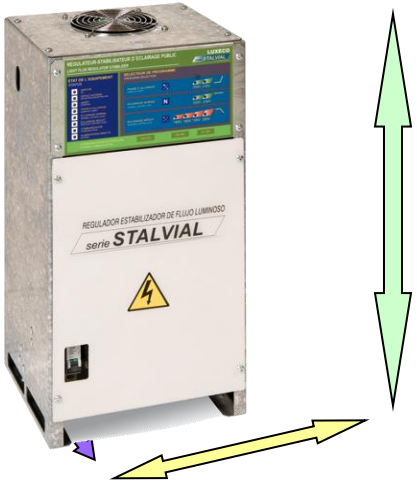
KVA	A	B	C
10 - 15 - 20 - 25 - 30 - 45	350	797	240
60 - 80	650	795	320
100 - 120	650	1045	320

Exturnal IP44 - IP54

KVA	A	B	C
10 - 15 - 20 - 25 - 30 - 45	500	895	320
60 - 80	750	893	420
100 - 120	750	1143	420

Dimensions –Single-Phase

Inturnal IP20



LE PLUS PETIT DU MARCHÉ

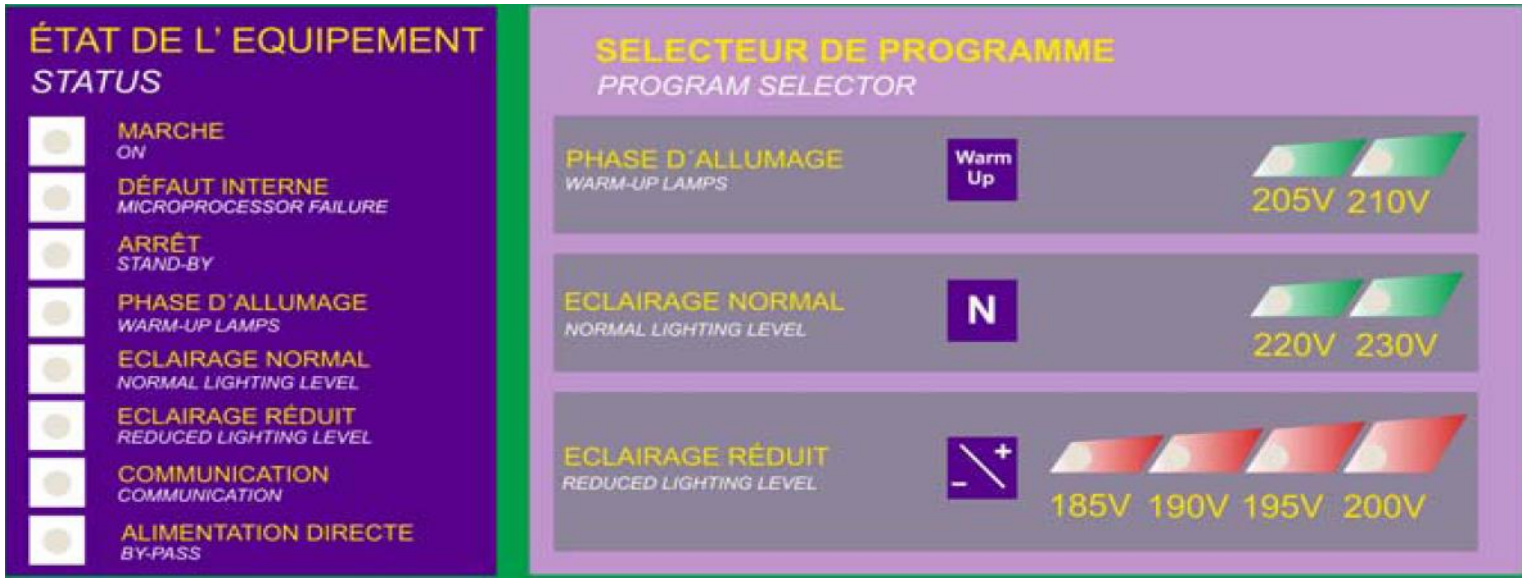
Empresa certificada por TÜVRheinland® CERT ISO 9001

Exturnal IP44 - IP54

KVA	A	B	C
3,3 - 5 - 7,5 - 10 -15	260	502	220
20 - 26,6	305	795	320
33,3 - 40	305	1045	320

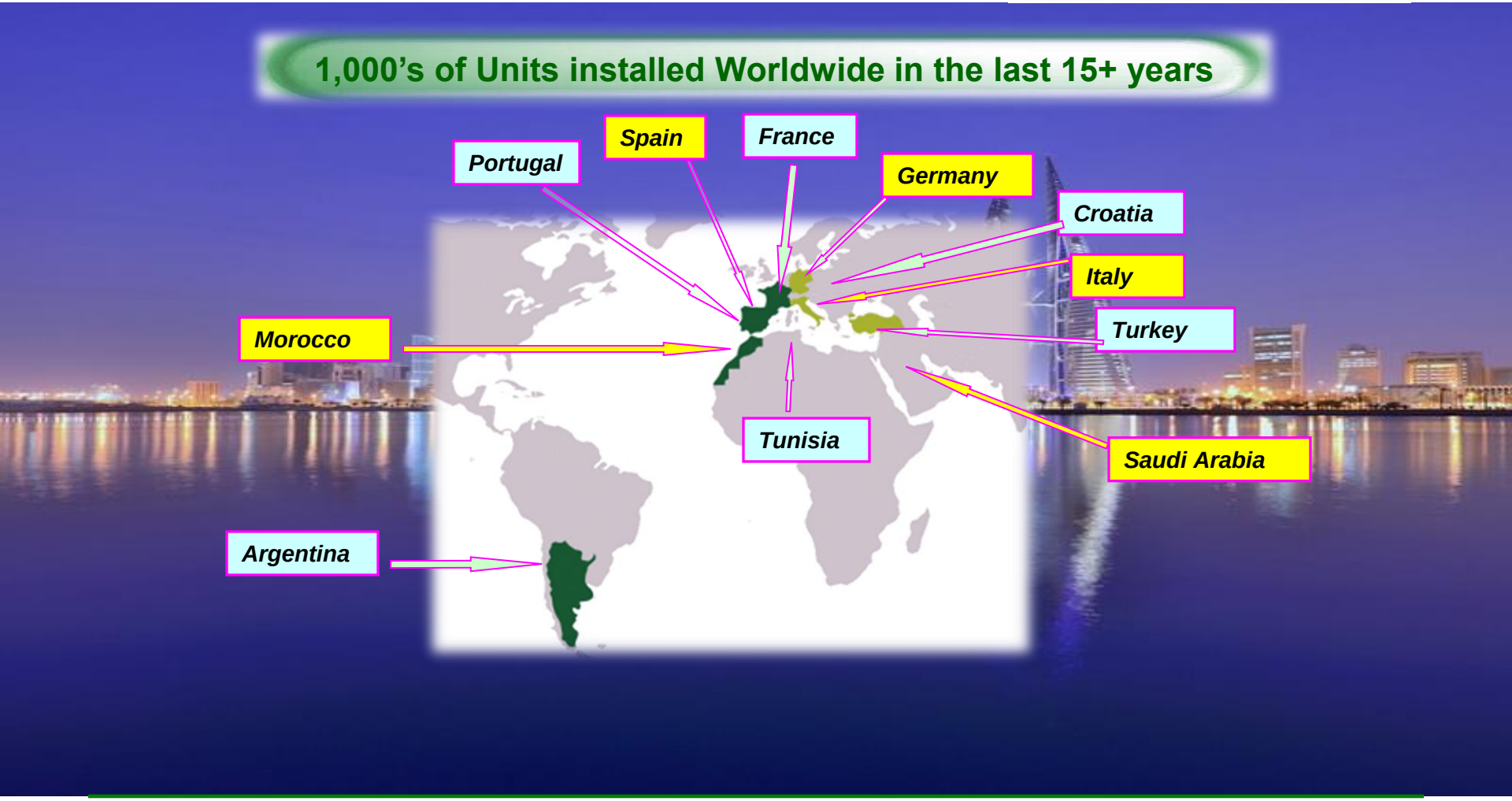
KVA	A	B	C
3,3 - 5 - 7,5 - 10 -15	500	645	320
20 - 26,6	500	893	420
33,3 - 40	500	1143	420

The Luminous flux regulator is made exclusively with solid state components. Hence the maintenance is simply a matter of a visual inspection of the front panel.*



* A maintenance contract can be offered according customer's requirements on (corrective, preventive, etc…)

1,000's of Units installed Worldwide in the last 15+ years



Unit locations installed in France

Nord-Pas-De-Calais
Arras
Calais
Divion
Isques
Saint-Sylvestre-Cappel

Haute-Normandie
Hondouville
Le Petit-Quevilly

La Bretagne
Lorient

Pays-De-La Loire
Les Herbiers

Poitou-Charentes
Celles-Sur-Belle
Les Gonds
La Rochelle
Périgny
Vouneuil-sous-Biard

Limousin
Limoges
Saint-Yrieix-la-Perche
Saint-Junien

Aquitaine
Ares
Biscarosse
Bordeaux
Cubzac-Les-Ponts
Morlaas
serre castet

Midi-Pyrénées
Frouzins

Languedoc-Roussillon
Arques
Fabrègues

Rhône Alpes
Saint-Étienne

Centre
Saint-Ay
Saint-Jean-de-Braye

Bourgogne
Cosne-Cours-sur-Loire

Franche-Comté
Audincourt
Montbéliard

Champagne-Ardenne
Rethel

Lorraine
Thionville

Picardie
Bresle
Beauvais
Maignelay-Montigny
Ressons-sur-Matz

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Examples of Units installed in France

EDF switchboards for public lighting with a single phase **unit**

EDF switchboards for public lighting with a three-phase unit

Unit locations installed in Spain

Zone North
Pamplona
Bilbao

North West
A Coruña
Bilbao
León

North East
Barcelone
Lérida
Tarragona
Girona
Valencia
Zaragoza
Teruel

Centre
Pozuelo de Alarcón
Villalvilla
Alacalá de Henares
Aranjuez
Madrid (Radiales)
Albacete

Balearic Islands
Palma de Mallorca
Menorca
Mahón

South
Mérida
Córdoba
Almería
Huelva
Sevilla

Canary Islands
Las palmas
Tenerife
Fuerteventura

I – Technical & economical Benefits

II – Targeted sectors

III - Stalvial Luminous Flux Regulator

Examples of some Units installed in Spain

These units are the only luminous flux regulator approved by **ENDESA* in Spain**

* ENDESA even include/endores the units on their trade Show events …

Advertising Switchboards for Public Lighting and Display Units

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Examples of some units installed in Morocco

Dimensions –Three-Phase Units

UNIT POWER RANGE & SIZE

K.V.A.	A	B	C	D	E	WATTS DISSIPATION WATTS	YIELD%
10	350	797	240	320	120	275	97,3
15	350	797	240	320	120	330	97,8
20	350	797	240	320	120	435	97,8
25	350	797	240	320	120	530	97,9
30	350	797	240	320	120	550	98,2
45	350	797	240	320	120	720	98,4
60	650	795	320	606	200	900	98,5
80	650	795	320	606	200	1250	98,5
100	650	1045	320	606	200	1355	98,7
120	650	1045	320	606	200	1550	98,7

Savings on CO2 emissions

*Example of a **45kVA** luminous flux regulator*

- *Average use 10h/ day*
- *Average saving 25%+*

FORMULA of energy saved

KW x h x 365 (day) x saving percentage

In our example:

45 kw x 10h x 365 x 0.25 = 41.061,00 kwh /year

CO2 emissions depend on the primary source used to get the energy. Let's take an average value of 500gr of CO_2 per KWH produced.

In our example, it's: 41.061,00 kwh /

20.5 tons of CO2 NOT RELEASED

In the European Energy Exchange market (EEX) :

- *1 CER « right to release CO_2" is worth 11,39 € on 11/03/2012*
- *Applied to our example:*

20,5 t x 11,39 € = 233,49 €

233,49 € saved / year

(for 1 luminous regulator of 45kVA)

We also make complete switchboards for public lighting systems

- It's the only switchboards for public lighting in the world with an intergrated luminous flux regulator
- Saves space in the transformer substation
- Complies with all EU standards
- A recognised high manufacturing quality.

Warranty, Installation and Maintenance …

All Equipment Warranties cover an initial 12 month period from date of installation.

Project Requirement Design and Unit Installation is carried out by our fully approved Installation Teams..

Long-term Maintenance Service Contracts are offered and available on request..

For additional information on our Warranties and Service contracts please forward your inquiry to our various authorised Agents and Representatives.

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Unit Controls..

other Electrical Power system equipment…

Various Power Transmission and Control Equipment such as Transformers and Power converters can be designed to clients requirements on request…

Project Management Service can also be provided by our in-house staff whom have many years of first hand design and installation experience in the units designed, used and manufactured by our team….

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Thank you for your attention

Any questions ?

Please contact our Agents..

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