

# REGULATOR Cd SERIES.

## Evolution In Lighting Technology

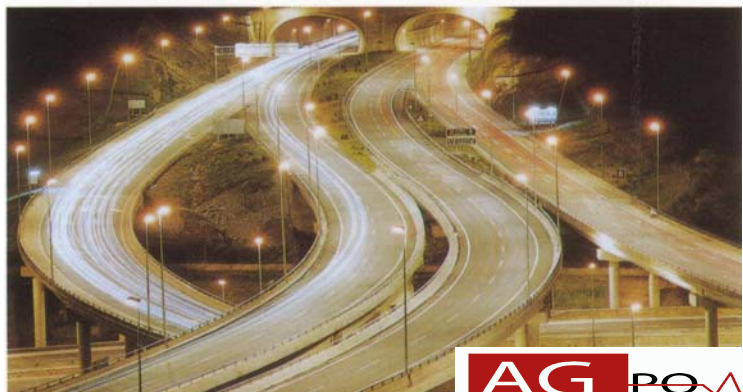


### INTRODUCTION

Lighting plants are connected to mains that are subject to voltage variations caused by both the distribution source and seasonal and daily load variations. Lamps, to operate correctly, should be fed with a voltage that does not exceed 5% of the nominal voltage. Very often while the plant is operating, much higher value occur. Voltage fluctuation, and especially over- voltages, are extremely critical for all lightning sources, limiting the use.



Therefore, to have the best performance Stabilizing is necessary, and this must be carried out with very reliable technologies having a high recovery rate on the mains variation. The Cd flux regulator for lightning plants is fruit of the automatic voltage stabilizer technology. When installed in a new or preexisting plants it enables line voltage stabilizing and also Regulation within the nominal value and a minimum Value compatible with the type of lamp used. The purposed of this is to reduce the power absorbed, thus cutting down the consumption by up to 50%. Besides increasing the life of the lamps install also drastically cuts maintenance and replacement costs.



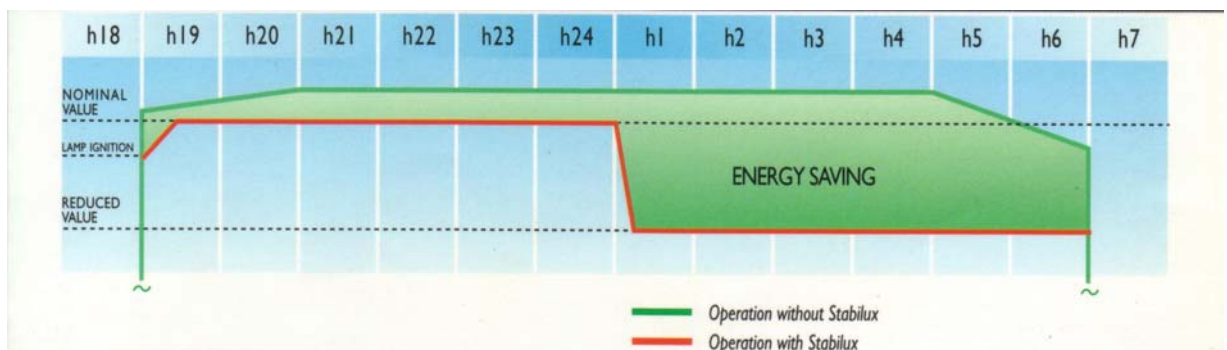
## OPERATION

The luminous flux regulation starts by automatically running the lamp ignition cycle at the voltage level programmed by the user. Subsequently Cd gradually reaches the nominal voltage value.

When for some reason (such as night-time for road lightning systems) the maximum illumination level is no longer necessary, Cd can power the lamps with a lower voltage, considerably saving energy.

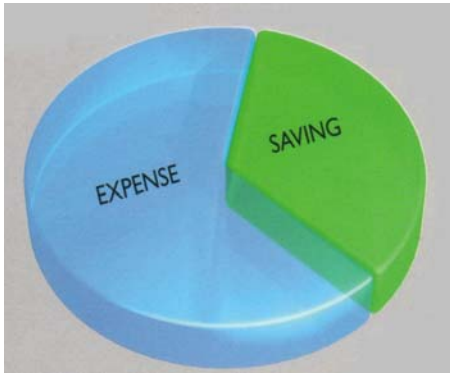
Also the change-over from nominal to reduced voltage and vice-versa takes place gradually. In every operating status the output voltage of the luminous flux regulator is kept constant within  $\pm 1\%$  in relation to the set value and with an input voltage variation of  $\pm 10\%$ .

In the case of a black-out, when mains power returns Cd repeats the lamp ignition cycle before bringing the voltage back to the programmed value.



## SAVING

Saving that can be obtained by stabilizing and regulation mainly depends on the condition of the plant and the type of lamp powered. All discharge lamps usually used in public or private lightning can be underpowered without causing any particular problems. However, it should be pointed out that under the same under powering conditions differences types of lamps give saving percentages that may differ considerably.

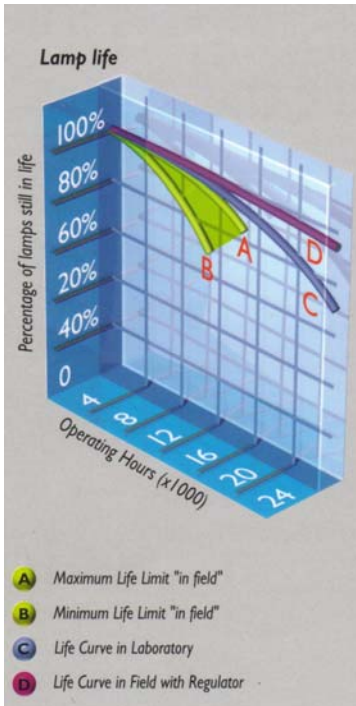
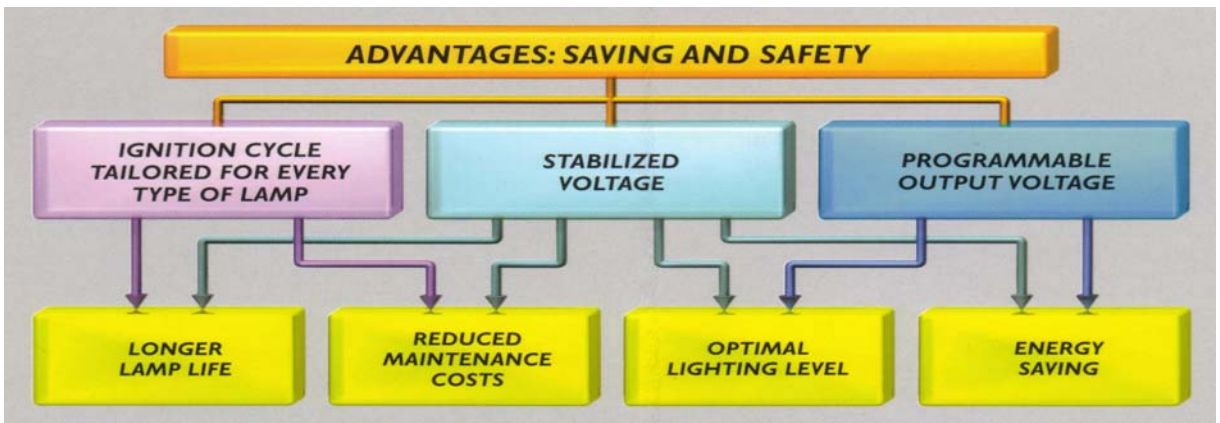


The energy saving value indicated in the table refer to nominal value powering with lamps that are not excessively deteriorated. Where LFR is applied for night lighting, when in fact the mains voltage has higher values (5-10%) over the nominal value, the saving is further increased. These different are determined by the physical-construction characteristic of the lamps and their use. In particular, mercury vapour lamps cannot be underpowered below certain values, and to have the maximum saving and Anti Switch-off Devices (ASD) is necessary.

Type of lamp	Allowed minimum voltage		Energy saving
	Without ASD	With ASD	
High pressure	183V		45-50%
Low pressure	190V		35%
Mercury vapours	200V	183V	26-30%, 32-40%
Metal halides	183V		40%
Fluorescent with standard control	190V		35-45%
Compact	190V		30-35%
Mixed lamps	190V		30%

### Power rating available in KVA:

3.5, 5, 6, 8, 10, 12, 15, 18, 21, 25, 30, 33, 35, 42, 50, 60, 65, 80, 100, 125, 150, and 180



## ADVANTAGES

- Ensures energy saving up to 50% thanks to the stabilized and regulated powering supplied to the lamps.
- Supplied the most suitable lightning level according to the user's real needs managing and maintaining the stabilized output voltage.
- Permits lightning cycles tailored for each type of lamp.
- Perfectly feeds sodium, mercury, metal halide and fluorescent lamp, keeping their original characteristic unvaried throughout time.
- Increase the lamp life, considerably reducing the need for replacement.
- Cuts down plant maintenance costs.
- Reconciles safety, saving and quality of lightning for roads, spurs motorways, squares, tunnels, parking areas, stadiums, harbors, airports, railway station, power plants, military barracks, prisons, industrial plants, wide distribution.
- Vigorously controls luminous pollution.
- Ensures driving safety with constant and uniform lightning, thus avoiding dangerous shadow cones caused by the switching off technique.

