

# VALUX

For Energy Savings



# ■ Valux, power variation synonymous with:

## ■ Comfort

Increased safety of lighted areas. Adjustment of lighting to various uses.

## ■ Flexibility

Programming of periods of use as desired by user. Integration into existing installations. Use with wide range of sources (fluorescent sphere, high pressure sodium, fluorescent tube with magnetic ballast).

## ■ Facility

Overall system easily integrated. Easy maintenance by valux design.

## ■ Economy

Reduction of 30 à 40 % power invoice thanks to decreased consumed power and smoothing of overvoltages. Extension of lamp life duration.

## ■ Extended fields of application

### ■ Valux with stepped levels

Designed for programming three lighting power levels of 50%, 75%, 100%.

#### Street lighting:

- Footpaths,
- Pedestrian areas,
- Public areas,
- Tunnels,
- Car parks.

#### Sports lighting:

- Sports grounds
- Sports rooms
- Tennis courts

Possibilité de moduler l'éclairage en fonction de l'activité.



Valux three-phase 36 kVA  
code **150605**

Cabinet for  
Three-phase Valux



Cabinet for  
Single-phase  
cabinet

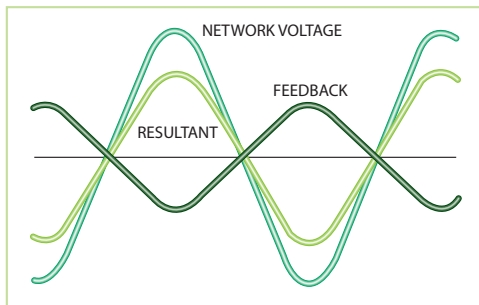


# Valux with levels

## Theory of operation

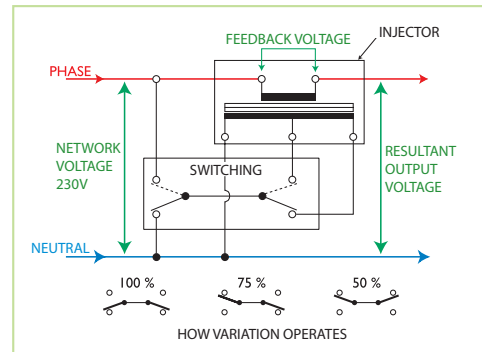
Variation is obtained by injecting a variable feedback voltage in series with the phase. This function is by a special transformer (injector)

The feedback voltage is phase-shifted by 180° with respect to the fundamental without any deformation of the sinusoid. This is a particularly reliable process because in the event of



a power cut on the variable control, the main line remains at the same voltage as the distribution network.

The system does not generate interference. The level type **valux**, in the basic version, ensures three power levels (50%, 75%, 100%) at times programmed by the user.



## Power control

It is a particularly good idea to install valux units for street lighting. The curve below shows the mean annual operation of street lighting in France and the time intervals during which power variations are possible. The balance works out as follows:

### Without variation

4 140 hours at 100 %,

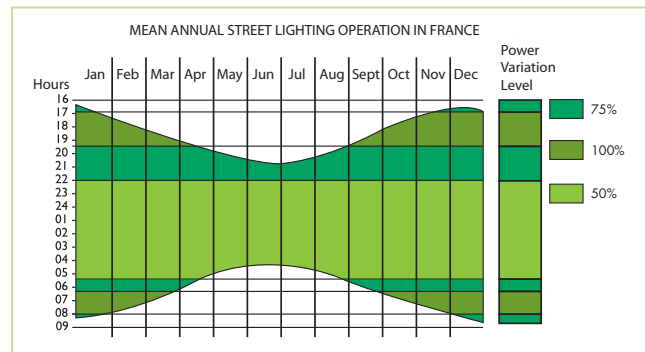
### With variation

550 hours for 100% level

950 hours for 75% level

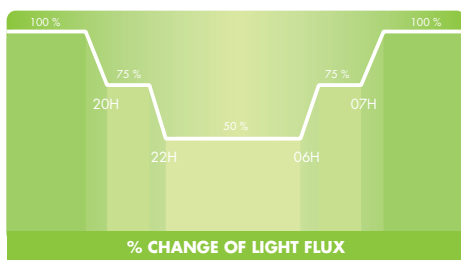
2 640 hours for 50 % level

thus a 30% savings on your power bill.



## Programming

Standard programming: see the following diagram.



Valux clock is set with the following program:

- 100 % until 8:00pm and from 7:00am to shut-off
- 75 % from 8:00pm to 10:00pm and from 6:00am to 7:00am
- 50 % from 10:00pm to 6:00am

This program may be changed at any time by the user.



## ■ Sources to be used

Power variation by level is well-suited for:

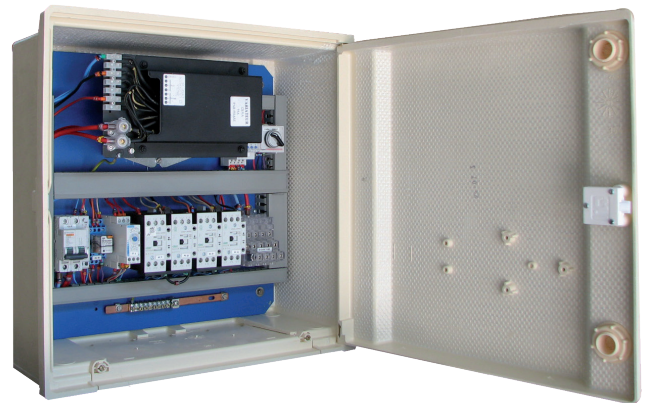
> High Pressure Sodium lamps: 70 W with external ingitor only and 100W to 1000W ovoid and tubular lamps.

## ■ Recommendations

### ■ Lamps

This variation technology by levels is not suited for:

- > Metal Halide (MH) and white sodium which are not made for variation.
- > Mercury vapor lamps and fluorescent tubes which show dropouts during variation.
- > Low Pressure Sodium lamps which, by their regulatory effect, offset voltage variations.



### ■ Electronic ballasts

The association of electronic ballasts and a voltage variator (Valux) is not recommended.

The regulating function of a luminaire equipped with an electronic ballast goes against the effects of variation.

There are no more savings.

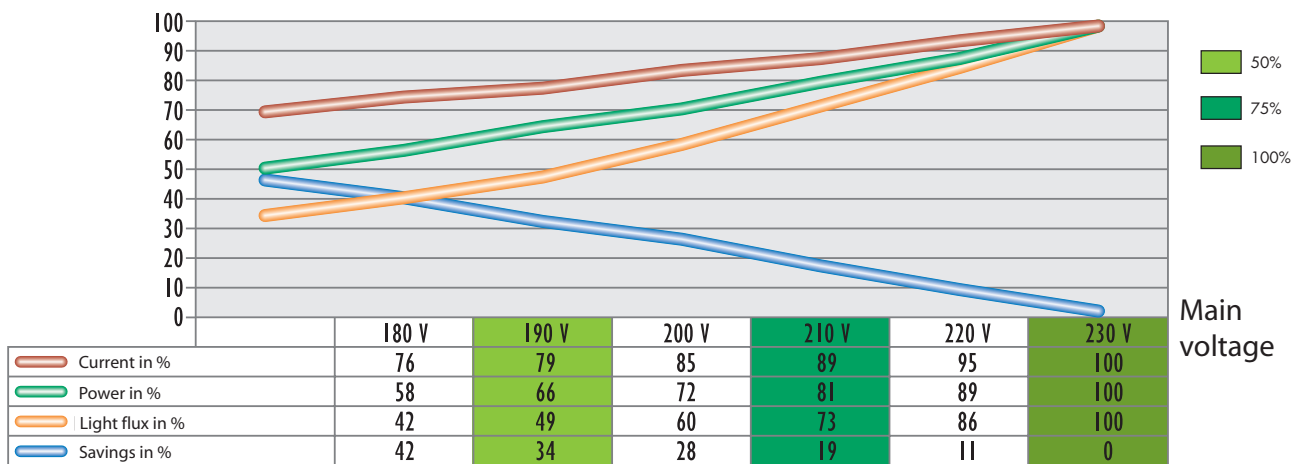
This can cause problems on streetlighting networks such as overcurrents with tripping of head protections, or the malfunction of electronic ballasts not provided for this purpose.

Note: Valux and altron® are however compatible. It is possible to associate a Valux head and some altron® (eg for metal halide lamps, without variation). In this case, please contact us to check the consistency of the project.





## ■ High Pressure Sodium lamps



## ■ Which Valux do I choose ?

To determine the valux power required in an installation, you need to know the following elements:

- > type of network  
(230 V single-phase - 400 V three-phase),
- > network current per phase,
- > type of sources used (sphere, fluo, HPS, ...)
- > source power,
- > number of light points.

The necessary current intensity (in amperes per phase) is then equal to:

$$I = \frac{\text{number of light points} \times \text{unit network current}}{K}$$

where K = 1 for a 230V single-phase network  
K = 3 for a 400V three-phase network

To facilitate the calculations, the following table indicates, depending on the type of source, the values that can be taken into account for the network current.

HPS				
100 W	150 W	250 W	400 W	1000 W
0,54 A	0,8 A	1,45 A	2,2 A	5,7 A

## ■ Example

400V three-phase installation with the 3 phases balanced, comprising 51 lamps of the HPS 150W type and 15 HPS 250W units.

In this case, the calculation gives us:

$$I = \frac{51 \times 0,8}{3} + \frac{15 \times 1,45}{3} = 20,8 \text{ A per phase.}$$

Accordingly, we will use a three-phase **valux 3 x 27A** (18 kVA).

Code 150603

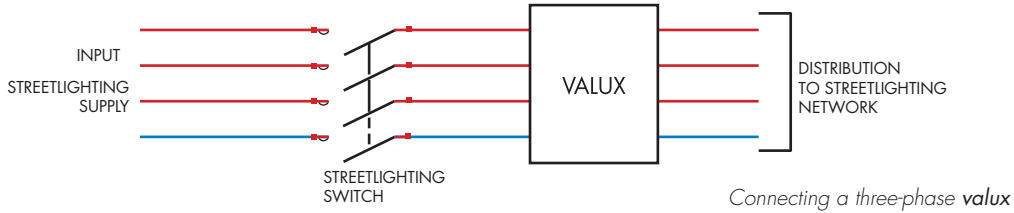
(see table page 9 for technical data)



VALUX  
A-5

# Connecting the valux

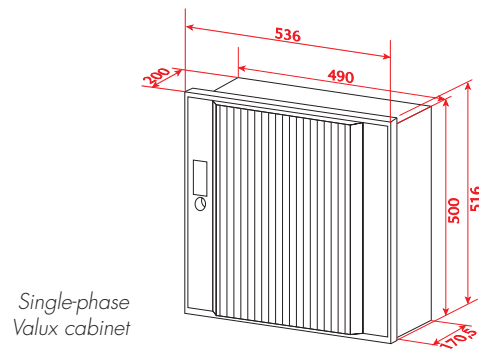
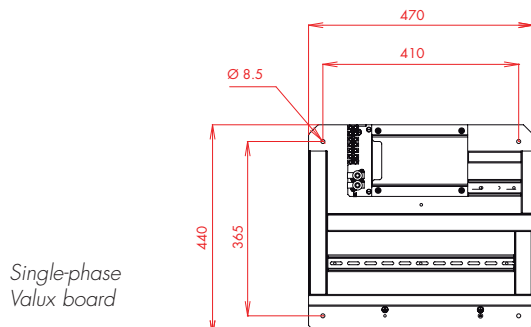
The valux is set in series behind the switch of the streetlighting network.



**Important:** The valux variator does not include any command or switch.

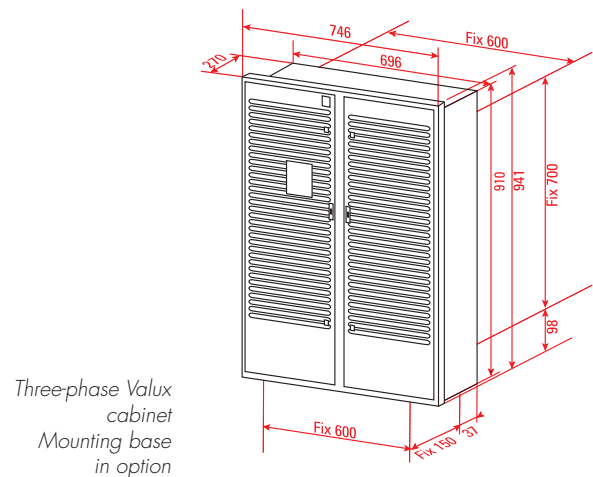
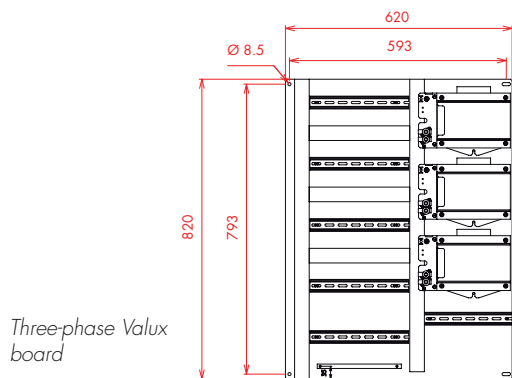
## Cabinet

### Ventilated single-phase cabinet



Fixing the single-phase Valux board in the cabinet by 4 screws.  
(No room available for additional hardware.)

### Ventilated three-phase cabinet



Fixing the three-phase Valux board in the cabinet by 4 screws.  
(Space available to install additional hardware, 2 DIN rails of 15 modules)



## Digital clock

The digital clock program allows different switching according to the day of the week. It authorizes a weekend cycle and a week cycle, for example.

It also includes the time change summer/winter.

It allows:

- > Manual programming by scroll-down menu or memory stick (optional)
- > Code PIN protection.
- > Manual switching
- > Choosing the menu language

Programming the clock is performed according to the table shown in the Valux operating instructions.

### Warnings:

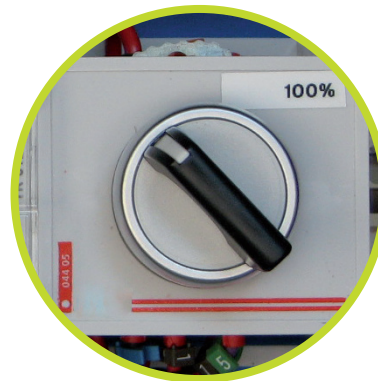
- To avoid stalling the lamps, two rules must be respected:
- > Do not go from a 100% level to a 50% level without implementing the 75% level.
  - > Maintain a minimum of 20 min time between 2 levels.



Digital clock

## Commands

- > By-pass command (forces the Valux to the 100% level)
- > 20-min delay at ignition or after a power outage that forces the Valux to the 75% level to support ignition of the lamps.
- > Manual switching performed using the buttons on the clock to change levels.



Bypass



# ■ Technical data

## ■ Norms

Safety NF EN 60439-1 - Installation C17-200  
Class I IP2X at front  
Scheme TT or TNS

## ■ Range / Power

> Single-phase 1,5 kVA to 12 kVA  
> Three-phase 4,5 kVA to 36 kVA  
Consumption according to table

## ■ Voltage

### > Input

Single-phase 230V - Three-phase 400V  
Operating range  $\pm 5\%$   
Frequency 50 - 60 Hz

### > Output

Harmonic distortions  $< 1\%$ .  
Level 100% - Input voltage  
Level 75%\* 210 - 211 - 212V selon prises n° 4 - 5 - 6  
Level 50%\* 192 - 195 - 197V selon prises n° 1 - 2 - 3

Le câblage des injecteurs est réalisé sur les prises n° 2 et 5.

\* A tension d'entrée 230 V

## ■ Protections

Curve C disconnecting circuitbreaker - 10 kVA - according to table.  
Optional: possibility of locking in the open position  
Grounding block:  
> 1 main connector up to 35 mm<sup>2</sup>  
> 3 second connectors 16 mm<sup>2</sup>  
> 9 secondary connectors 6 mm<sup>2</sup>  
> 7 secondary connectors 4 mm<sup>2</sup>

## ■ Connection capacity

See table.

## ■ Clock

> Drift: less than 3 minutes per year  
> Manual programming of the clock by drop-down menu or memory stick (optional)

## ■ Commands

By-pass switch

## ■ Environment

> Air temperature -25°C / +50°C  
> Relative humidity: 0 à 80 % uncondensed





## ■ Range

Determining the Valux power on page 5.

Network	Single-phase 230V						Three-phase 400V					
Power	1,5 kVA	2,5 kVA	4 kVA	6 kVA	8 kVA	12 kVA	4,5 kVA	7,5 kVA	12 kVA	18 kVA	24 kVA	36 kVA
Current	7 A	11 A	18 A	27 A	36 A	55 A	3x7 A	3x11 A	3x18 A	3x27 A	3x36 A	3x55 A
Dissipated power	33 W	38 W	46 W	49 W	52 W	65 W	99 W	114 W	138 W	147 W	158 W	168 W
Circuitbreaker	10 A + N	16 A + N	20 A + N	32 A + N	40 A + N	63 A + N	3x10 A+N	3x16A+N	3x20A+N	3x32A+N	3x40 A+N	3x63A+N
Section Max capacity Input	1 cable 2 x 25 mm <sup>2</sup>			1 cable 2 x 35 mm <sup>2</sup>			1 cable 4 x 25 mm <sup>2</sup>			1 cable 4 x 35 mm <sup>2</sup>		
Section Max capacity Output	3 cables 2 x 50 mm <sup>2</sup>						3 cables 4 x 50 mm <sup>2</sup>					
Dimensions	H x L x P (in mm) 516 x 536 x 200						H x L x P (in mm) 820 x 620 x 190					
Ventilated cabinets (upon request)	Cabinet Type S15 - code 150150						Cabinet S17 Type 3 - code 151865					
Weight in Kg	12	13	14	17	18	20	37	40	42	52	56	62
Reference	<b>150500</b>	<b>150501</b>	<b>150502</b>	<b>150503</b>	<b>150504</b>	<b>150505</b>	<b>150600</b>	<b>150601</b>	<b>150602</b>	<b>150603</b>	<b>150604</b>	<b>150605</b>

The codes in red colour designate standard products.

**Warning:** The circuit-breaker in the Valux does not exempt from having network protections, conforming to the C17-200 norm.

## ■ Options

Code

**151865** - Ventilated three-phase cabinet

**151863** - Mounting base for three-phase cabinet

**150150** - Ventilated single-phase cabinet

**151864** - Programming key for the clock with specific program set in factory.

> Circuit breaker locking accessory, single and three phase, please contact us.

> External command (without clock), please contact us.





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