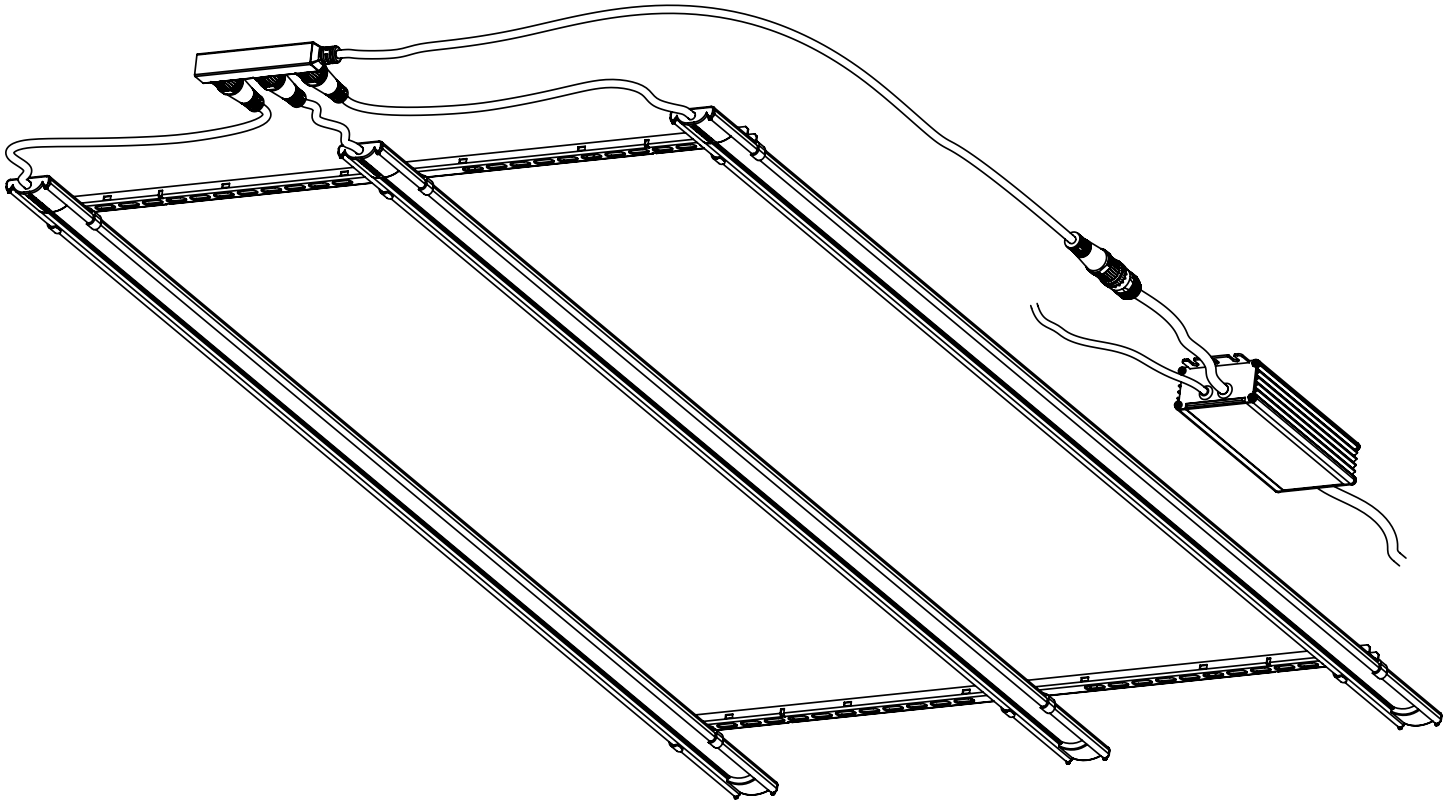
VALOYA

LL-CV Series

LL60-CV
LL90-CV
LL120-CV
LL150-CV



INSTALLATION GUIDE | LL-CV Series

ENGLISH

CAUTION!

Inappropriate installation may cause injury to persons and damage to the lamp.

DEUTSCH

VORSICHT!

Unsachgemäße Installation kann zu Personen- und Sachschäden führen.

NEDERLANDS

LET OP!

Onjuiste installatie kan schade aan personen of de lamp veroorzaken.

PORTUGUÊS

ATENÇÃO!

A instalação inapropriada pode causar danos na luminária e ferimentos nas pessoas.

ESPAÑOL

PELIGRO!

Una instalación inadecuada puede provocar lesiones o dañar la lámpara.

VLAAMS

LET OP!

Verkeerde aansluiting kan schade veroorzaken aan de lamp of leiden tot lichamelijk letsel aan personen.

FRANÇAIS

ATTENTION!

Une mauvaise installation peut étre source de blessures corporelles et endommager les lampes.

SVENSKA

AKTA!

Felaktig installation kan leda till skador på personer och lampan.

SUOMI

HUOMIO!

Valaisimen huolimaton asennus voi johtaa henkilön loukkaantumiseen ja valaisimen vioittumiseen.

РУССКИЙ

ОСТОРОЖНО!

Ненадлежащий монтаж может привести к серьезным травмам и повреждению лампы.

日本語

注意！

不適切な取り付けは人の傷害、およびランプの損傷の原因となる場合があります。

ITALIANO

ATTENZIONE!

L’installazione non corretta può causare lesioni alle persone e danni alla lampada.

BEFORE YOU BEGIN

1. Please read this manual thoroughly before use, and retain it for future reference.
2. Due to our continuous program of product development, data is subject to change without notice.
3. Unauthorized product tampering invalidates warranty & is a safety risk.
4. All electrical work must be carried out by qualified persons.
5. Always follow appropriate electrical codes. Connection devices with appropriate ratings and voltage must be used.
6. Disconnect mains power before product installation, connection, or disconnection.
7. Products are fixed luminaires for indoor use (i.e. Install out of reach / Only movable using tools).
8. LED-modules are non-replaceable light sources.
9. Do not use luminaires without LED Drivers (power units) connected
10. Connect LED drivers to electrical branch circuits (ensure suitable strain relief is fitted).
11. Products with an earth connection must be earthed for safety.
12. Installation of additional electrical circuit protection devices is strongly advised:
    - Type C MCB's (Miniature Circuit Breakers).
    - RCD (Residual Current Device).
    - ICL (Inrush Current Limiter).
    - SPD (Surge Protection Device).
13. Do not high voltage test.
14. Install LED drivers against a flat surface to ensure optimal heat dissipation and lifetime.
15. Do not connect products installed on different mains phases to the same dimming device (dimmable products only).
16. Observe published product temperature specifications and limits.
17. Product surface temperature may become hot to the touch during use.
18. Do not stare directly at any bright light source.
19. As a precaution, use suitable eye protection if working for long periods under high intensity lighting.
20. Dispose of all waste in accordance with local regulations.
21. The external flexible cable of the luminaire is only replaceable by Valoya.
22. For luminaries supplied with open-end supply cables:

    a. Cables should not be concealed or extended through parts of the building structure.

    b. Cables should not be located above a suspended/dropped ceiling, or permanently fixed to the building structure.

    c. Cables must be visible over their full length, not strained, and protected from physical damage.

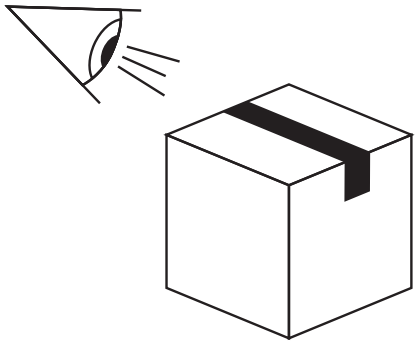
    d. Cables must be used within their electrical ratings at the maximum temperature of the installed environment.

IMPORTANT

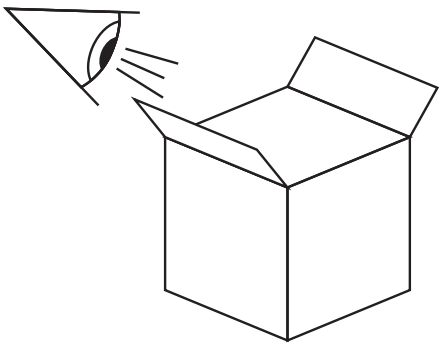
Installation must be carried out by qualified persons, and according to the electrical safety rules & regulations applicable in your country!

DELIVERY CHECK

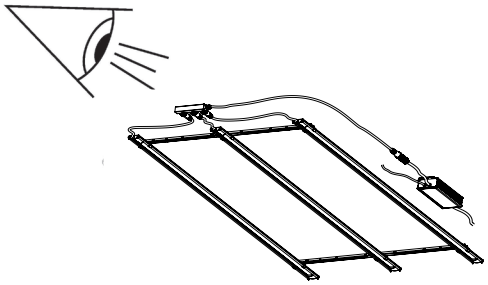
- Please inspect the goods upon receipt to ensure that your delivery is complete.'
- If you detect any damage to the packaging, please notify the carrier immediately and ask them to note that "the delivery was not delivered in good condition".
- If the packaging shows no damage but the goods inside are either missing, defective, or show other signs of damage, please contact us.
- In all cases please take pictures as evidence and contact us as soon as possible by phone or e-mail.



Check package



Check content



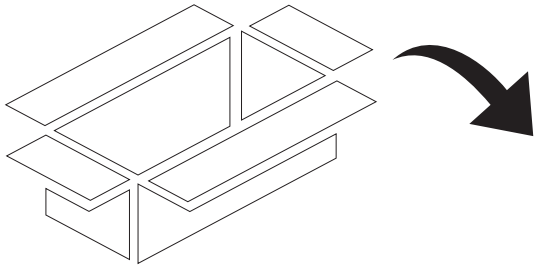
Check operation

If problems, contact us

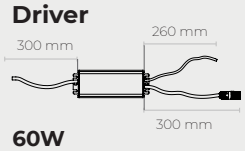
PART IDENTIFICATION

Note: This product consists of different parts enabling different installation combinations.

Please check package content against the picking list.



Driver

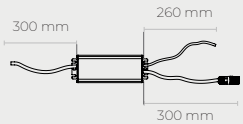


60W
LL_DRV_CV_60W

240W
LL_DRV_CV_240W

320W
LL_DRV_CV_320W

600W
LL_DRV_CV_600W



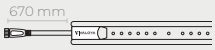
Ext. Cable
GL0059

Nodes *LED fixtures plug directly into the nodes based on the number needed.*

2-node
GL0050

3-node
GL0047

4-node
GL0048



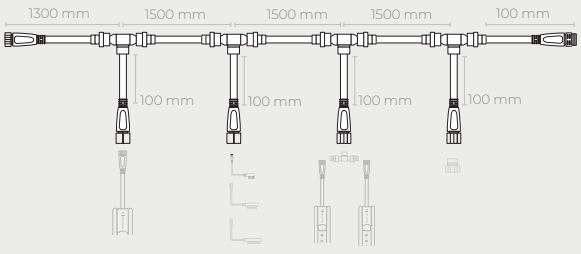
LL-CV Series fixture

Node Endcap
GL0061

T-connector
GL0060

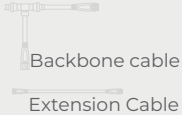
Backbone Cable *Endcap mandatory on cable end.*

GL0058



Backbone Cable Endcap
GL0065

Extension options



Fixtures Node T-connector Node Endcap

Endcaps are mandatory at the end of each backbone cable. Extension cables or additional backbone cables are optional for continuation.

Fixing options

A. Mounting Rail

Mounting Rail Kit Option: Includes 2 rails and hangers tailored for the selected number of fixtures.

Mounting Rail Kit Hanger
GL0011

Mounting Rail
GL0012

2-bar Kit
LLFIX_K2

3-bar Kit
LLFIX_K3

4-bar Kit
LLFIX_K4

B. Standard Clip

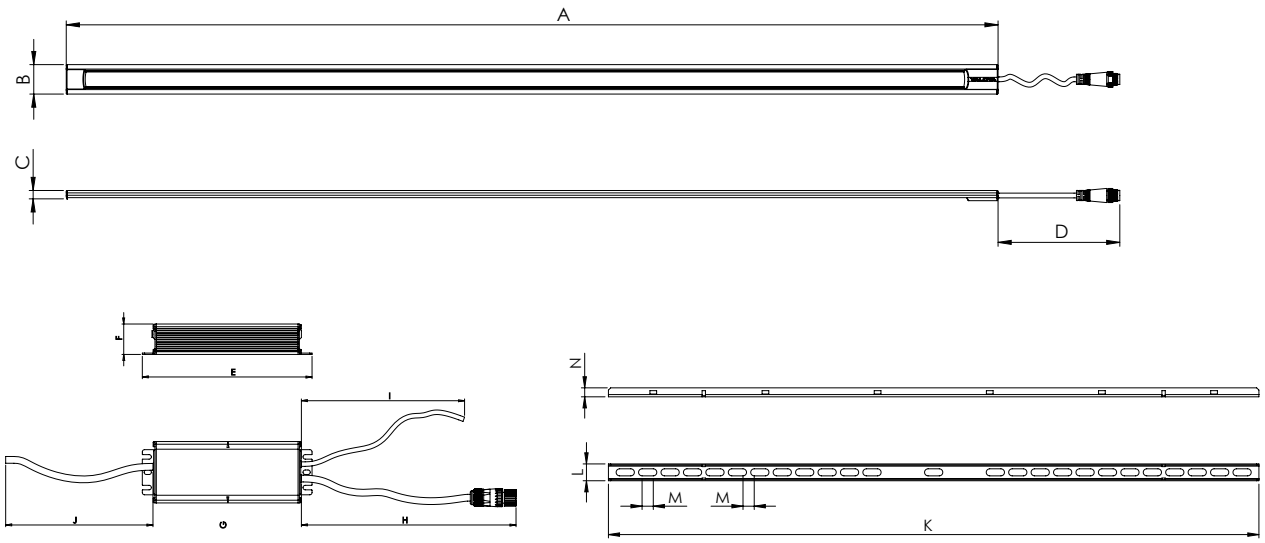
Hanger
GL0010

Hangers can be installed using screws or zip ties.

SPECIFICATIONS (TYPICAL)						
	Driver	LL CV 60W	LL CV 240W	LL CV 320W	LL CV 600W	LL CV 600W DALI
	Power (W)	60	240	320	600	600
	Input current (A)	0,31	1,1	1,5	3,1	3,1
	16A Type-C MCB load (max recommended.)	19	14	10	3	3
	Driver weight (kg / lb) 0.4 / 8.8	0,6	1,2	1,2	2,6	2,6
Electrical	Input voltage, nominal (VAC)	100 - 305 VAC				
	Frequency (Hz)	50 / 60				
	Power Factor	> 0.95				
	Dimmable (IEC 60929 Annex E)	0-10V/PWM (LED driver is a current source device)				
	AC mains plug fitted	No				
	Luminaire insulation class	Class I - For Fixed Installations				
	Minimum cable bending radius	5 X cable diameter				
	Maximum allowed Tc temperature (°C/°F)	+70 / +158				
Environmental **Luminaire only**	Operational ambient temperature range (°C/°F)	-20...+45 / -4...+113				
	Maximum Relative Humidity (%)	90 (non-condensing)				
	Storage temperature (°C/°F)	-20...+40/ -4...+104				
	Ingress Protection (IP) rating	IP66				
	Impact Protection (IK) rating	IK03				
	Cooling method	Passive cooled				
Regulations & Approvals	CE marked	Yes				
	RoHS Compliant	Yes				
	EMC directive compliant	Yes				
	Low Voltage Directive compliant	Yes				
	Eco-design (EuP) directive compliant	Yes				
	Photobiological safety classification	Risk Group 1				

PRODUCT DIMENSIONS

		LL60-CV	LL90-CV	LL120-CV	LL150-CV
A	Light Bar Length (mm)	572	872	1172	1472
B	Light Bar Width (mm)	37			
C	Light Bar Height (mm)	13			
D	Light Bar Cable (mm)	670			
Driver		**60W**	**240W**	**320W**	**600W**
E	LED Driver Length (w/o cables) (mm)	158	188	251	262
F	LED Driver Height (mm)	34	39	39	49
G	LED Driver Width (mm)	68	68	68	125
H	LED Driver Output Cable Length (mm)	300	300	300	300
I	LED Driver Dimming Cable Length (mm)	260	260	260	260
J	LED Driver Mains Cable Length (mm)	300	300	300	300
LLFIX_2 / LLFIX_3 / LLFIX_4					
K	Mounting Rail Length (mm)	580			
L	Mounting Rail Width (mm)	15			
M	Mounting Rail Height (mm)	8			
N	Mounting Rail Installation Slot Spacing (mm)	10			

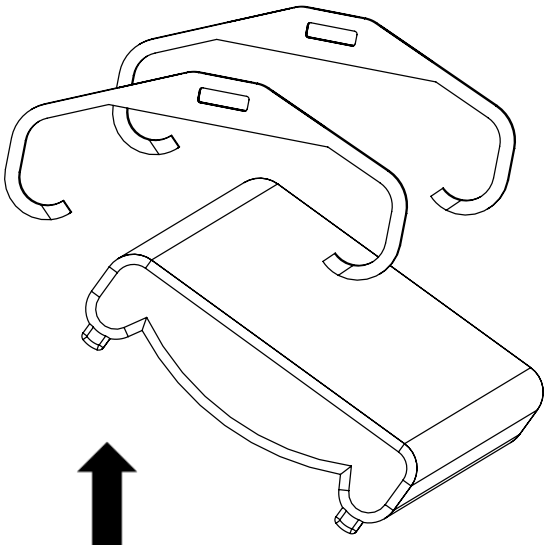


Notes:

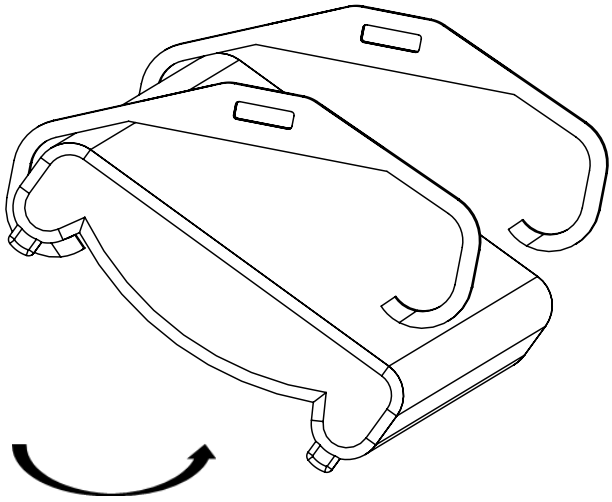
- Electrical values are typical nominal figures (variations may occur due to spectrum, component & production tolerances).
- Due to our continuous program of product development, specifications are subject to change without notice in order to improve spectra, function, performance & reliability.
- Due to manufacturing tolerances, slight variations are possible in cable lengths, weights & package dimensions.

LIGHT BAR INSTALLATION CLIPS

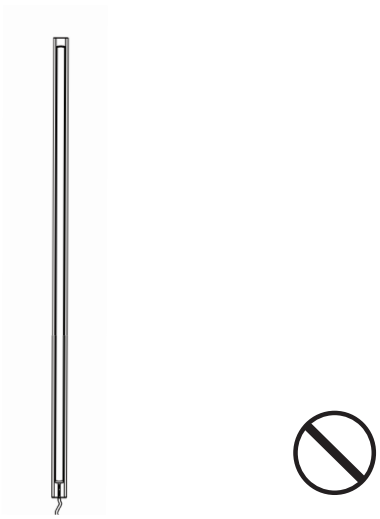
1.



2.



LUMINAIRE ORIENTATION

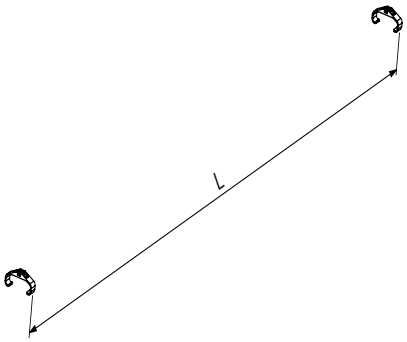


No other orientation is permitted

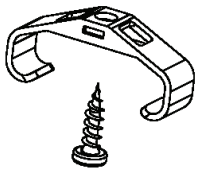
Notes:

- No other orientation permitted
- Not for intracanopy use.
- Ensure the maximum specified operational ambient temperature around a luminaire is not exceeded by utilizing appropriate electrical or mechanical ventilation or cooling systems on the installation as necessary.
- IP rating valid in horizontal mounting position.

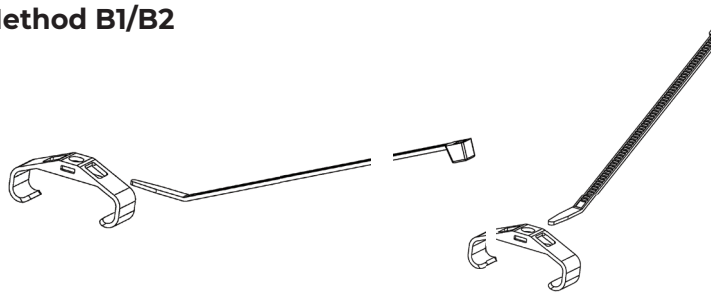
Spacing between fixing points (L) 250-500 mm (LL60-CV) / 400-800 mm (LL90-CV) / 500-1100 mm (LL120-CV) / 800-1400 mm (LL150-CV)



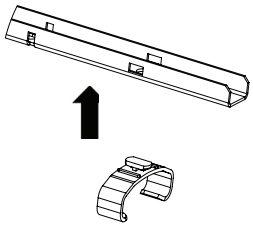
Method A

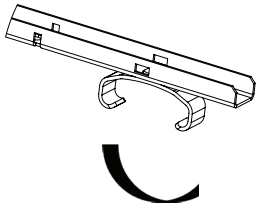


Method B1/B2



Method C (Optional Mounting Rail)



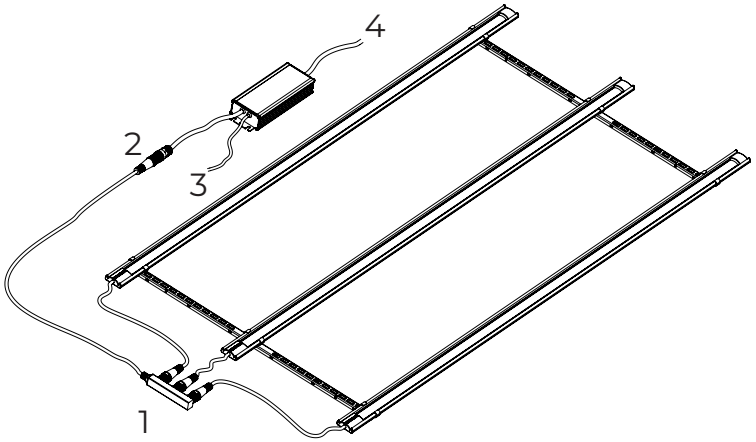


LUMINAIRE CONNECTION

Note! Never connect Mains before all Light Bars belonging to the set are connected.

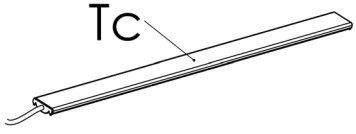
Connection order

1) Connect Light Bars mating connectors to Connection Cable
2) Connect Connection Cable mating connector to LED Driver
3) Connect LED Driver dimming to compatible current sink dimmer/controller (if used)
4) Connect the mains cable to the mains supply

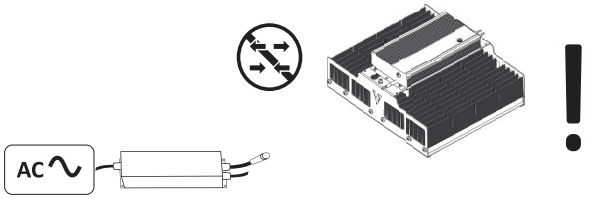


Maximum Tc point temperature of LL-CV Series

The Tc point is located on the backside of the luminaire body profile, at its center. The maximum permissible Tc temperature is +70°C. This value is a general specification that applies to all product variants of LL-CV Series.



Never connect or disconnect Light Bar(s) from the LED driver with the mains supply switched ON!
This may lead to failure of Light Bar(s) / LED Driver or Electric Shock.

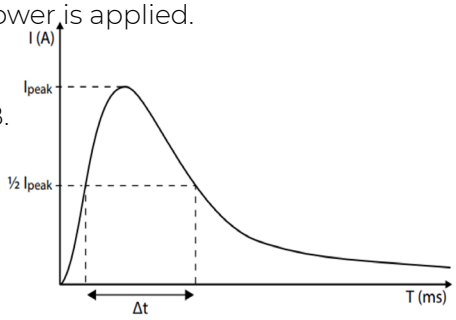


INRUSH CURRENT

This is the initial current surge drawn during product start-up. Total inrush current rises as the circuit load increases and is one factor that can contribute to nuisance tripping of circuit breakers (MCB's). Practical performance will be affected by the MCB load, MCB tripping characteristics, site wiring impedance, and the angle of the AC mainscycle at the specific moment power is applied.

Nuisance tripping issues may be improved by:

- Reducing the quantity of LED drivers connected to a single MCB.
- Re-distributing the load over multiple mains phases.
- Using an MCB with Type C (EN 60898) tripping characteristics.
- Installing additional inrush current limiting devices.
- Installing a zero crossing relay for powering up the LED drivers.



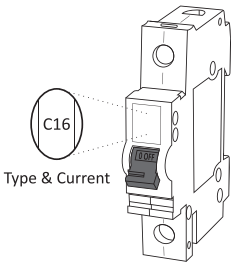
Example of a typical inrush current graph

MCBS (MINIATURE CIRCUIT BREAKERS)

Valoya only recommend using MCB's with "Type C" trip characteristics according to EN 60898.

The maximum quantity of Valoya products recommended for a 16A Type C MCB is stated on the product's technical specifications datasheet (page 6). This quantity is used as the 100% reference in the table below. The table is provided as a tool to enable calculation of the approximate maximum load for different MCB types and ratings. Installation wiring rating, impedances and mains switch-on angle variations may also influence the actual practical limit.

20A branch circuit is the maximum allowed per UL certification according to LED Drivers UL Conditions of Acceptability.



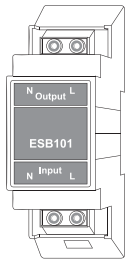
MCB example

MCB TYPE	Rating (A)	Relative quantity (%)
B	10	37
	16	60
	20	75

MCB TYPE	Rating (A)	Relative quantity (%)
C	10	62
	16	**100 (Ref.)**
	20	125

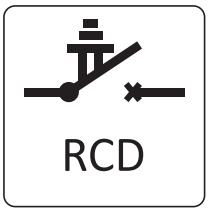
ICL (INRUSH CURRENT LIMITER)

An ICL can help avoid nuisance MCB tripping and can be installed between the MCB and the load. It also enables an increase the luminaire quantity up to the maximum RMS current limit of the Inrush Current Limiter.



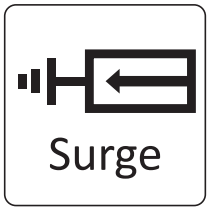
ICL example

RCDS (RESIDUAL CURRENT DEVICES)



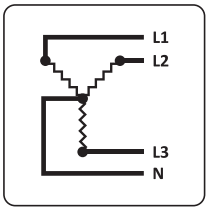
An RCD is a protective safety device used to automatically disconnect the electrical supply when an imbalance is detected between live conductors. Requirements for use, and the needed RCD rating, will vary depending on the type of installation. Valoya luminaires are designed to be installed in fixed electrical installations where no plug is permitted for connecting the luminaire to the mains supply.

SURGE PROTECTORS



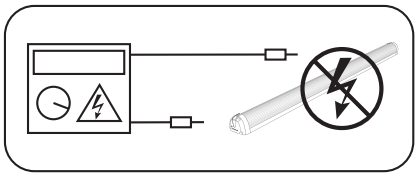
Valoya LED drivers have built-in surge protection. However, to protect against surge peaks above 4KV (e. g. Due to a lightning strike) we recommend the installation of transient voltage surge suppression.

3-PHASE SUPPLIES



- Do not apply power without the Neutral connected.
- Ensure the supply is off before disconnecting the Neutral.
- To avoid erratic dimming or possible product damage, do not connect the same dimmer or controller to luminaires supplied by different mains phases.

INSULATION RESISTANCE/ ELECTRIC STRENGTH TESTING

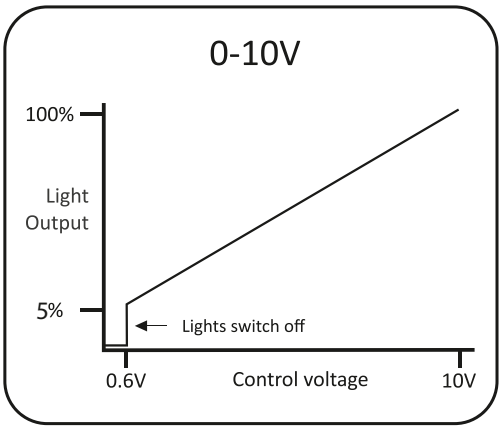


- Valoya products have been fully tested during manufacture. There is no need to test again.
- If the electrical site wiring must be tested, test with the luminaires and LED drivers disconnected from the mains supply.
- If luminaires and LED drivers are connected to the mains supply during the test, all Live phases and Neutral must be connected together before the test is carried out (Remember to check correct reconnection before reapplying the mains supply).

DIMMING METHODS

Differences in dimming methods exist depending on the LED driver (power unit) used by the Valoya luminaire.

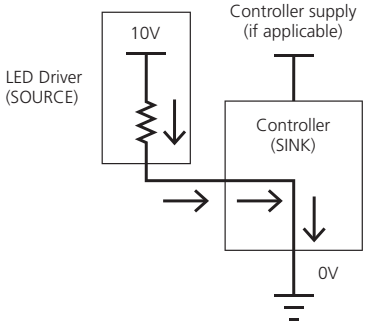
- 0-10V: Minimum dimmed light output is approximately 5% (Spectra dependent). Below this the light output is off without the need for mains switching.



Please keep in mind: if you're using an additional dimmer that cannot go below 10%, the fixture will also not be able to dim below 10%!

DIMMING CONTROL COMPATIBILITY

LED drivers used by Valoya comply with International standard for current sink controls; IEC 60929 Annex E. This specifies that the LED driver is a current source device. Compatible controls MUST be capable of sinking the current provided by the LED driver. Controls supplying a 10V signal ARE NOT compatible.



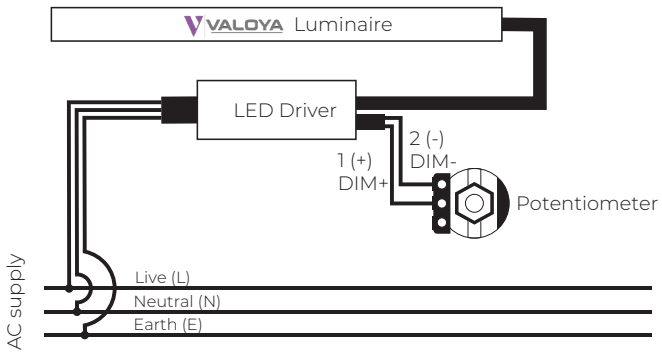
Important considerations when choosing a controller

- Please check with you controller provider regarding the specification of the device.
- The number of luminaires possible to connect to a single control device will depend its specification, specifically:
  - The dimming method (1-10V or 0-10V).
  - The control circuit current sink capability.

DIMMING CONNECTION EXAMPLES

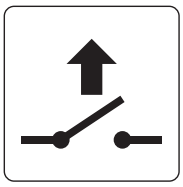
Using a simple potentiometer (1-10V / 0-10V)

One LED driver can be connected to a standard 100KOhm potentiometer. Note that connection of multiple LED drivers to one 100KOhm potentiometer is not recommended due to possibilities for erratic dimming performance

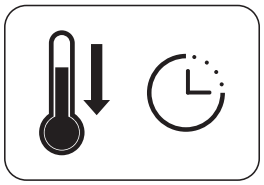


CLEANING

Switch the supply OFF



Allow to cool



Do not use detergent*

Clean with a soft brush

Wipe with soft clothes

Suitable for spray cleaning with water

*Isopropyl alcohol (IPA) can be used for the cleaning of LEDs. If other cleansing solutions to be used, their appropriateness must be tested beforehand. Cleansing solutions with CFCs (chlorofluoro-carbons) should not be used.
NOTE: Power supply must be switched off and luminaire must be in an unpowered state when spray or wet cleaning is used.

BASIC FAULT FINDING

Lighting faults can be due to a rare product defect, connection error, or other external issue. Faults are unlikely to affect both luminaire and the LED driver (power unit) together. If possible, please check if the issue is luminaire or LED driver related. This will speed problem resolution and minimize unnecessary shipping costs.

- Switch off the mains supply.
- Disconnect the luminaire from its LED driver.
- Connect the luminaire to an unpowered, working LED driver (if available).
- Connect the mains supply to the working LED driver.
- If the problem remains, then the luminaire may be damaged.
- If the luminaire now works, then the original LED driver, or mains supply to it may be at fault.
- Note details of the problem (product type, quantity, problem description...) and contact Valoya for further assistance.

If a problem reoccurs or affects many products at the same time, please contact Valoya **(www.valoya.com/support)** for further advice and assistance.

WARRANTY

Products are covered by a limited warranty. Warranty starts from date of installation, but latest 3 months from the delivery date.

The warranty offered is “Return-to-Base”, meaning suspected faulty items shall be returned to Valoya for fault and warranty validation before any repair or replacement can be agreed.

Valoya warrants that each Product will be free from defects in material and workmanship for the duration of the warranty period as long as the products are installed and used in accordance with our published specifications and recommendations.

Warranty shall be void in the event any repairs or alterations not duly authorized by Valoya in writing are made to the Product by any person.

CLAIMS

Before returning a suspected faulty item, please contact Valoya **(www.valoya.com/support)** to give details of the issue and obtain a Return Material Authorization (RMA) reference number. Please be prepared to provide the following information about the issue:

- Product model information (e.g. B200 NS1).
- Product serial number plus YF or XF code.
- Quantity showing problems.
- Detailed problem description.
- Photograph or video showing the issue (if possible).
- Installation / invoice date (if known).

After receiving an RMA number, Products should be suitably packed and the package or shipping paperwork clearly marked with the RMA number. Returns received without an RMA reference number may be rejected.

Valoya will inspect the returned items to validate fault and warranty validity. If Valoya determines to its satisfaction that warranty is valid, Valoya will repair or replace the Product with one of similar age. Where a warranty claim is justified, Valoya will pay for the return freight expenses for repaired or replaced items. Valoya reserve the right to invoice for returning Products that are not found to be defective, or do not comply with the terms of this warranty, together with associated freight, testing and handling costs.

*** Above is a summary of our warranty and claim policy. For full details please see: www.valoya.com/warranty.**

Standards applied (where applicable)**:**

EUROPE

EN60598-1: Luminaires. General requirements and tests.
EN60598-2-1: Luminaires. Part 2: Particular requirements. Section one – Fixed general purpose luminaires.
EN62031: LED modules for general lighting. Safety specifications.
EN 62493: Assessment of lighting equipment related to human exposure to electromagnetic fields.
EN55015: Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment.
EN61547: Equipment for general lighting purposes. EMC immunity requirements.
EN61000-3-2: Electromagnetic compatibility - Limits - Limits for harmonic current emissions.
EN61000-3-3: Electromagnetic compatibility – Limits - Limits for Voltage Fluctuations and Flicker.
IEC EN 61000-4-2: Electromagnetic compatibility (EMC)- Part 4-2: Testing and measurement techniques - electrostatic discharge immunity test.
IEC EN 61000-4-3: Electromagnetic compatibility (EMC)- Part 4-3: Testing and measurement techniques - radiated, radio-frequency, electromagnetic field immunity test.
IEC EN 61000-4-4: Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/ burst immunity test.
IEC EN 61000-4-5: Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test.
IEC EN 61000-4-6: Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields.
IEC EN 61000-4-8: Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test.
IEC EN 61000-4-11: Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests.
IEC 61347-2-13: Lamp controlgear. Particular requirements for d.c. or a.c. supplied electronic controlgear for LED modules.
IEC 61347-1: Lamp controlgear - Part 1: General and safety requirements.
IEC 62384: DC or AC supplied electronic control gear for LED modules. Performance requirements.
EN62471: Photobiological safety of lamps and lamp systems.
EN62560: Self-ballasted LED-lamps for general lighting services by voltage >50V - Safety specifications.
EN62776: Double-capped LED lamps designed to retrofit linear fluorescent lamps - Safety specifications.

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