valo paa.

TEHTY SUOMESSA
MADE IN FINLAND

PRODUCT
CATALOGUE 2018

Valopaa Ltd. – intelligence to illumination

Valopaa Ltd is an experienced professional in LED lighting. The company develops lighting solutions to outdoor lighting and industrial lighting for demanding conditions. Valopaa professionals also support their customers in procuring great solutions, deployment stage and maintenance.

Valopaa products have been in use in demanding conditions since 2009. The products have proven to be reliable and easy to maintain. All Valopaa products are designed and manufactured in Finland, and have been granted the Finnish Key Flag origin mark.

CUSTOMER SUPPORT

Valopaa supports their customers throughout the product lifecycle. We help you design appropriate lighting sights, find financing for your procurement, maintain your luminaires, as well as deploy, use and maintain your intelligent lighting solutions.

STRONG R&D KNOW-HOW

The R&D team of Valopaa has world class know-how in lighting technologies, products and R&D processes. In-house R&D ensures high energy efficiency, great lighting capabilities and reliable long use time within the desired application. Our local highly professional business network supports us in R&D activities when needed. Valopaa cooperates with VTT Technical Research Centre of Finland and Finnish universities.

The Valopaa luminaires are built from high-quality LEDs and LED modules, drivers, optics and other components from well-known manufacturers. The wireless control technology for intelligent lighting has been developed in-house by Valopaa R&D.

PRODUCTION AND COOPERATION NETWORK

The Valopaa products are assembled, tested and packaged in Oulu, Finland. All Valopaa processes have been audited by SGS Fimko, according to official luminaire production requirements. Our management system is ISO9001:2015 and ISO14001:2015 certified.

Our cooperation network is mainly based in Finland, and all our partners are ISO9001 certified.

Luminaires and all components used in them can be traced subsequently based on their serial number.

COST EFFICIENCY OVER LIFECYCLE WITH INTELLIGENCE

Our product philosophy is to create solutions to our customers with the most economic cost for the entire product lifecycle.

Intelligent lighting control typically halves energy usage compared to a fixed system with the same lighting technology. Wireless control doesn't require control cables, control devices in the electricity grid or physical installation work when applying changes in control settings.

CERTIFIED LED LUMINAIRES

Valopaa endows all products with a CE marking, indicating that the products fulfill all required standards. Valopaa LED modules and part of Valopaa luminaires have been approved by SGS Fimko and they have been granted FI markings. Part of Valopaa street and bridge luminaires have qualification approval from the Finnish Transport Agency. In addition, all of the drivers have been certified.

Contents

High quality, reliable and long-lasting LED luminaires

Valopaa strives to provide energy efficient luminaires with spot on light output that are reliable and maintainable for the entire product lifecycle. The most important subassemblies and parts in a LED luminaire are the LEDs, optics, drivers and surge protection, adjustability and intelligence, as well as thermal management and mechanics. Good lighting design and calculation are an essential part to good illumination.

LED COMPONENTS
Valopaa selects the best LEDs from western manufacturers Cree, Lumileds and Osram. These LED components have high energy efficiency, low scale and well-known lumen depreciation, very low percentage of failure, good selection of features, feature stability, and comprehensive documentation based on extensive testing. We carefully decide on specifications for LEDs and LED component structures used in Valopaa luminaires, and therefore, we can always guarantee competitive LED luminaires.

OPTICS
Most Valopaa luminaires use LEDiL optics that are well perceived and provide wide range of choices to create good illumination. We also use Valopaa optic lenses that are developed in-house in part of our luminaires, which use equivalent materials to LEDiL optics.

LED DRIVERS AND SURGE PROTECTION
Valopaa uses certified LED drivers that have operating temperature from -40 ˚C. We select the drivers from well-known manufacturers. Typically high quality modern drivers have sufficient surge protection, but where needed it can be improved with supplement surge protection.

ADJUSTABILITY AND INTELLIGENCE
Almost all Valopaa luminaires have DALI drivers that make it possible for customers to request dimming to a constant level to improve payback time for their purchase (requested at time of order). The intelligent versions (the i-models) are equipped with our intelligent wireless control technology that enables the best energy efficiency and other features when the iLUMNET system is used. RGBW luminaires can be controlled with either the iLUMNET system or DMX system. Both DALI and iLUMNET capable luminaires have automatic compensation of LED lumen depreciation. Lifetime and reliability data is available for all the drivers.

LUMINAIRE STRUCTURES
Heat control is an essential factor in reliability of a luminaire. Failure rate of LEDs, drivers and all electronics typically doubles when the temperature of the luminaires increases by 10 ˚C.

Produced heat is transferred to the ambient air through the aluminium structures of the Valopaa luminaires. The luminaires are designed in a way to ensure their temperature staying low enough throughout their lifetime. Part of the Valopaa luminaires are designed to an operating temperature as high as 55 ˚C. Requirements for moisture and dust prevention, as well as against vandalism, have all been paid attention to with the luminaire structures.

The mechanical parts of the luminaire are made of aluminum or stainless steel, that are strong enough and durable against time and hard environments.

MAINTAINABILITY
All Valopaa products are based on subassemblies and modules, which are changeable on-site or at depots depending on the product and the mechanic. The number of spare parts is low because of the modularity.

Essential features are traceable with the serial number of the product, and the compatibility of spare parts can be ensured.

iLUMNET - INTELLIGENT LIGHTING

With the iLUMNET intelligent lighting control system, lighting can be managed to create a safe environment where illumination is exactly as needed at that moment. The system enables easy expansion and changes to the luminaire control. The iLUMNET system grows with the customer's needs from intelligent luminaires, to groups pf luminaires and control devices, all the way to a remotely controlled entity.

Intelligent control typically halves energy consumption compared to non-controlled illumination the same lighting technology. Wireless control doesn't require control cables, control devices that are installed to the electricity grid, or physical installation change work.

INTELLIGENT LIGHTING SYSTEM

The intelligent Valopaa luminaires and the local control device iMASTER communicate wirelessly over a radio network. One iMASTER can manage multiple groups and hunderds of luminaires. In addition to managing street lighting, the iMASTER can manage simultaneously lighting of e.g. pedestrian ways, parks and playgrounds over an area of several kilometres.

In addition to intelligent Valopaa luminaires, adjustable DALI controlled luminaires from other manufacturers can be added to the system, as well as different sensors and switches. The local control device iMASTER and the intelligent luminaires are remotely controlled via cloud-based management interface LUMOSCOPE. The central management interface is used to group the luminaires and create control profiles to these groups.

The LUMOSCOPE interface has secure log in procedure and customer specific access rights, which are used to control all the lighting locations of that specific customer. The management interface and all the data are stored at a server located in Finland, managed 24/7 by a Finnish service provider, with high information security level. Our customers can control their lighting sites by themselves, or Valopaa can provide the control as a service.

INTELLIGENT LIGHTING

Improves energy efficiency of LED lighting.
Wireless control technology is often the most cost efficient way to implement lighting control and management.
Extends the reliable lifetime of luminaires.
Produces optimal and purposeful lighting i.e. lighting as needed.
Produces a pleasant living environment.
Produces device database with location data.
Develops continuously and can be extended to future requirements.

PLEASANT LIVING ENVIRONMENT

Optimizing lighting as needed creates a pleasant living environment for citizens.
Contributes to sustainable development and decreases the stress on the environment.

ENERGY EFFICIENT

Optimal lighting management brings energy savings that enable fast payback.
Optimization with the iLUMNET system brings approximately 50% energy savings compared to a fixed LED lighting system.

SMART CITY

The iLUMNET system can work as a smart city platform. The system can collect data that can be used in many applications.
On the other hand, the iLUMNET system can use data from other systems in lighting control.

WIRELESS IoT TECHNOLOGY

Efficient and flexible lighting system management.
Luminaires always online. Customized reporting.
Deployment and changes remotely via a web interface.

FUTURE PROOF

Easily expand and upgrade your system.
Add luminaires and control devices when needed, and expand your iLUMNET system as it grows.
Update your system and devices wirelessly. Future features can be wirelessly updated to your devices.

iLUMNET Makes lighting intelligent

INTELLIGENT LUMINAIRE
- The intelligent luminaire can be programmed to desired level at factory, and if needed, adjust the level during installation.
- Possible to later add the existing luminaires as part of intelligent lighting system.

LOCAL CONTROL
- Intelligent luminaires and sensors control the lighting locally (grouping, standby level, high level, duration of high level can be defined).
- Also other sensors and devices can be used.
- Application examples: Halls, canopies, yards, intersections, crosswalks and sport facilities.
- Possible to later add as part of the cloud managed system.

CLOUD SERVICE BASED CENTRAL MANAGEMENT
- Central management in cloud based service.
- Local control according to profiles and grouping with iMASTER.
- Reporting and fault notification
- More features
- External interfaces
- Device database in LUMOSCOPE interface

INTELLIGENT CONTROL WITH AN IoT-CAPABLE SYSTEM
The iLUMNET lighting system is an IoT system where luminaires can be controlled intelligently and individually.

Luminaires can be defined into single or several groups. The groups are controlled with lighting profiles based on the lighting requirements of the specific area by adjusting the lighting intensity to be suitable with the current conditions.

The system offers energy efficiency with area-specific lighting profiles which can reduce costs compared to lighting without intelligent control. The iLUMNET system makes it possible to save significantly in energy consumption as lighting level can be adjusted exactly to the need.

CENTRAL CONTROL
LUMOSCOPE, the cloud-based central control interface provides easy control and monitoring of your lighting systems. The LUMOSCOPE interface can be accessed through any device with a web browser, be it a desktop PC, a laptop, a tablet or a mobile device.

Area definitions, profile definitions and all changes to the control of the lighting system are performed with the LUMOSCOPE interface. System status and alarm indications are also provided along with various reports.
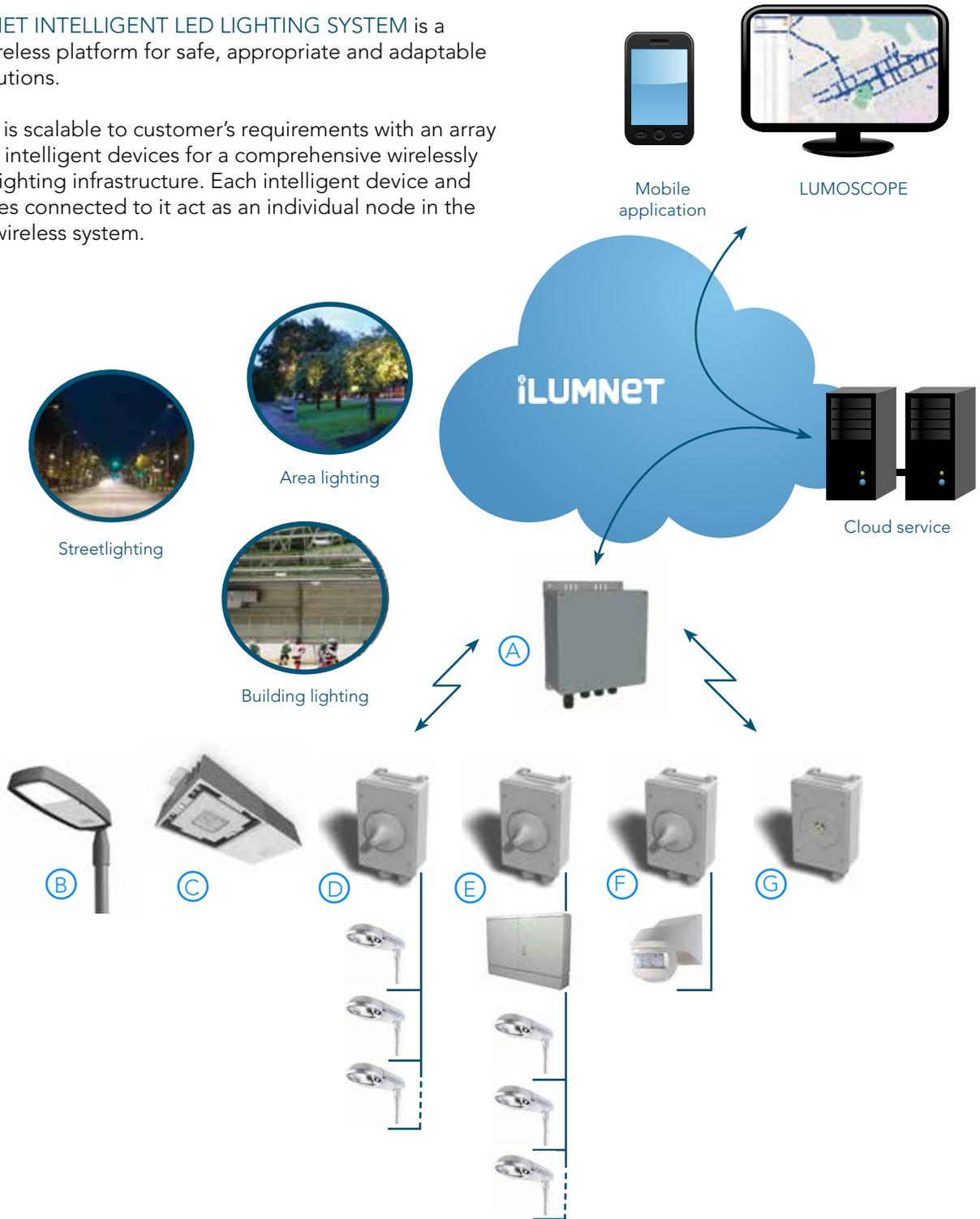
With the future-proof cloud-based system, there is no limit to the amount of luminaires the system can control – it scales to your needs, and software updates provide new functionalities.

EXTERNAL CONTROL INTERFACES
As central control is provided as a cloud service, external controls can be integrated to the iLUMNET system. Such external controls can be based on traffic volumes, energy prices, weather or any other system.

THE iLUMNET INTELLIGENT LED LIGHTING SYSTEM is a modular wireless platform for safe, appropriate and adaptable lighting solutions.

The system is scalable to customer's requirements with an array of available intelligent devices for a comprehensive wirelessly controlled lighting infrastructure. Each intelligent device and other devices connected to it act as an individual node in the intelligent wireless system.

Mobile application

LUMOSCOPE

iLUMNET

Cloud service

Streetlighting

Area lighting

Building lighting

A

B   C   D   E   F   G

A   **The iMASTER** manages the area containing devices and groups. It communicates with all the devices in the area with SRD radio and is connected to the iLUMNET server with a secure internet connection.

B   **VP intelligent luminaires** are intelligent devices used in a flexible manner in the lighting system without any additional installed infrastructure.

C   **VP intelligent luminaires with sensors** provide added detection functionality to control devices in the area based on presence or ambient luminance.
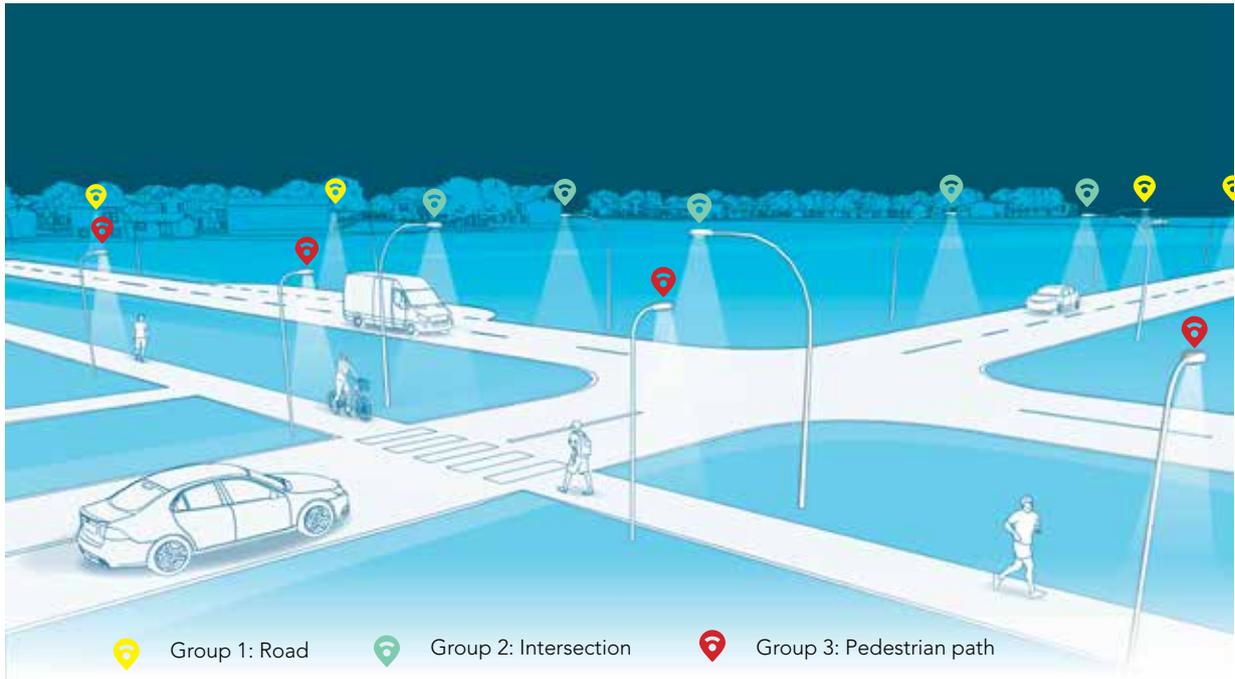
D   **The iCONTROL** is used for dimming groups of commercial luminaires with a wired DALI interface. A group of connected luminaires act as one device in the intelligent lighting system.

E   **The iCONTROL** is used for switching on/off groups of commercial luminaires by controlling the external relay at the power supply.

F   **The iCONTROL** is **connected to sensors** for added functionality to control devices in the area based on the detection information from the installed commercial sensor unit.

G   **The iSWITCH** is used in intelligent systems when manual control of lighting is needed, giving the user the means to turn on lights for a preset length of time.

iLUMNET   Makes lighting intelligent

APPLICATION EXAMPLES

Group 1: Road   Group 2: Intersection   Group 3: Pedestrian path

Luminaires can be grouped for example to different areas of the street environment. The intersection can be defined as one group, and it can have higher lighting levels compared to others parts of the street.

Different control devices and sensors can be added to the system to provide control data. For example, at the main road, a radar can be used in addition to timed lighting profiles. At the pedestrian path, sensors can be used to create illumination that adjusts as needed.
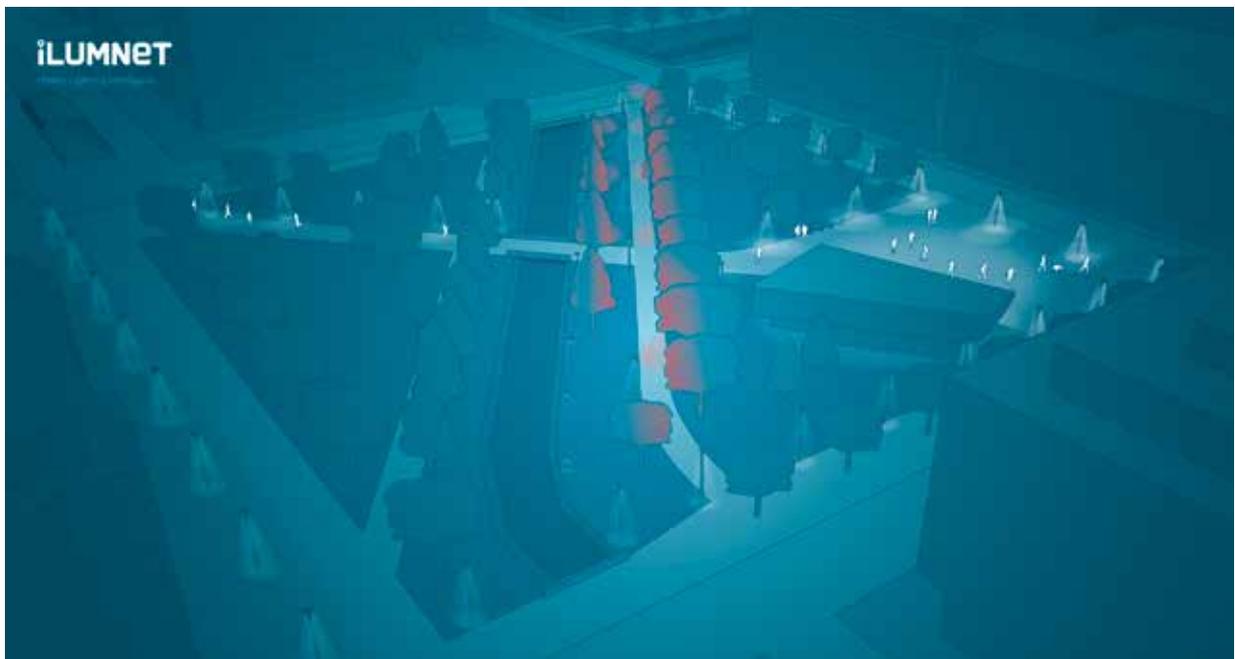
Free grouping can be used in parks to liven up the area and save energy. The illumination can be at higher intensity and operate with a motion detector where people are present.

RGBW lighting creates atmosphere to parks and in architectural lighting. Colored lighting operating profiles can be created with the iLUMNET system with a large scale of colors and tones.

Subject to change without prior notice.

Deployment

The luminaires, iMASTER and sensors have QR codes that contain the digital identity of the device and other technical data.

A mobile app is used to read the QR codes during installation at the installation site. The device information, as well as location data available from the mobile device, are transmitted to the iLUMNET server.

iMASTER

iMASTER is the central communication and controlling hub in the iLUMNET system. It can control a lighting site independently. It contains an industrial Linux-computer with lighting control software.

iMASTER uses wireless communication to control and manage all smart nodes allocated to the local area. It communicates with iLUMNET server that manages intelligent lighting system configurations and modifications. iMASTER also enables remote server based features like reporting, fault notification and SW upgrades.

iLUMNET Makes lighting intelligent

iCONTROL

iCONTROL is a multipurpose device to enable use of compatible luminaires, luminaire groups and sensors in the iLUMNET intelligent lighting system. Connected devices communicate wirelessly with other iLUMNET smart devices and iMASTER unit in the location.

One iCONTROL can control group of multiple luminaires being very efficient solution especially when upgrading existing installations. iCONTROL supports the DALI control interface. For example, the device can drive external relay typically used in urban lighting to control relays in control cabinet to switch lights on/off.

iCONTROL can utilize output from common commercial sensors, like twilight and motion detectors. Device reads the sensor output and controls the lighting system behavior as defined in the iLUMNET control interface.

KEY FEATURES
- SRD radio communication within iLUMNET system
- DALI control interface
- Control of external relay
- Use of commercial sensors or switches

iSWITCH

iSWITCH gives the user means to turn on lights for preset duration of time. iSWITCH can control wirelessly all intelligent luminaires or luminaire groups in the local area. Individual luminaires' or group´s response to the iSWITCH control can be programmed as wanted.

iSWITCH is typically used with area lighting (like parks, sports venues) and indoor installations where manual control of lighting is needed.

KEY FEATURES
- Push button switch to turn on lights for a period of time.
- SRD radio communication within the iLUMNET system.
- Controls intelligent luminaires also without the iMASTER.
- Possibility to add a commercial sensor.

Subject to change without prior notice.

iLUMNET Makes lighting intelligent

iNODE 500

iNODE 500 is an intelligent module that is installed to a luminaire. Each iNODE module has their own wireless radio. The iMASTER controls the luminaire via the iNODE module.

The iNODE can be equipped with a sensor module that has a motion detector and lux metering.

The product is available with two different antennas.

KEY FEATURES
- Supply voltage 220V
- SRD Radio 868 MHz
- DALI control interface
- IP65
- Motion detector
- Lux metering

iNODE 500 NEMA

iNODE 500 NEMA enables controlling a luminaire with the iLUMNET system via the NEMA twist-lock connector.

The use of the connector enables easy and fluent installation of the intelligent module to luminaires. The iNODE 500 NEMA module supports the DALI control interface. The sensor module cannot be attached to the iNODE 500 NEMA module.

KEY FEATURES
- Supply voltage 220V
- SRD Radio 868 MHz
- DALI control interface
- IP66
- Compatible with the ANSI C136.41-2013 standard

iLUMNET Makes lighting intelligent

Luminaire optics

In the Valopaa luminaires every LED module has its own optical lens that produces the light distribution. The Eulumdat files can be downloaded from www.valopaa.com.
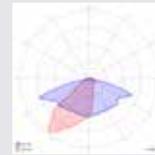
LEDiL STRADA OPTICS FOR STREETLIGHTING

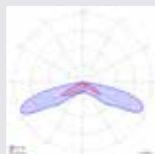**Lens A-T**
- ideal for narrow roads or on high poles

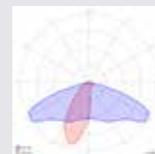**Lens DWC**
- for roads with longer pole distances

Lens ME
- good luminance performance
- low glare and good uniformity

Lens VSM
- symmetrical and wide square-shaped beam
- suited for intersection lighting and are lighting

Lens XW
- provides uniform light with height distance

Lens T2
- good mix between luminance and illuminance uniformity

Lens T3
- great luminance and illuminance uniformity

Lens T4
- excellent choice for wider roads
- suited for area and intersection lighting

VALOPAA OPTICS FOR TUNNEL, UNDERPASSES, SPOT AND FLOOD LIGHTING

Lens V7
- spotlighting and accent lighting
- opening angle 20°

Lens V8
- suitable for industrial halls, parking areas and underpasses
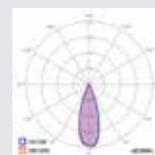- glare minimized

Lens V9
- developed for general lighting

Lens V9B
- developed for ceiling lighting and low canopies
- designed to minimise glare

Lens V9D
- a very wide round light beam
- for garden and park lighting
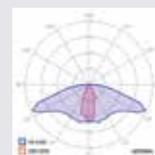- retrofit installations

Lens V10
- accent and spotlighting
- opening angle 35°

Lens V11
- for narrow streets
- for accent lighting
- minimizing light pollution

Lens V14
- for street lighting
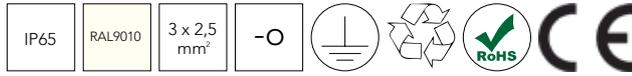- asymmetric light distribution for even light

Lens V12
- for residential streets
- well suited for parking areas

Lens V15
- floodlights in area lighting
- asymmetric light distribution

VP1001 Street Luminaire

Standard:

| IP65 | RAL9010 | 3 x 2,5 mm² | –O |

Options:

| DALI | 1-10V | PROG | K CRI McAdam | RAL classic colours | CLO |

Use for: Urban street and area lighting. The nice round shape and the wide colour options enable the luminaire to be used in various surroundings.
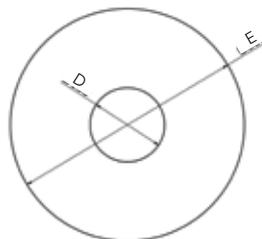
Optics: LEDiL Strada

Installation: Poles, horizontal arm or by horizontal wire hanging.
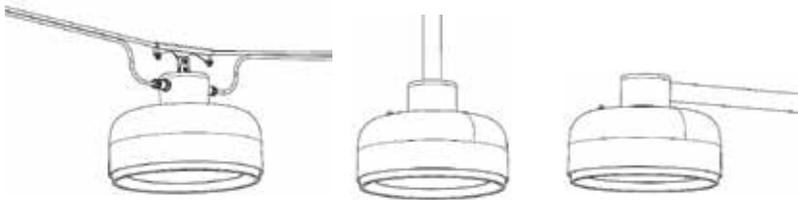
VP1001 is a long lasting, energy efficient and modern street luminaire in which functionality and intelligence create a beautiful and harmonic entity.

VP1001	40i	70i	100i	40	70	100
Input Power W	0, 9 - 39	0, 16 - 70	0, 20 - 100	39	70	100
Useful quantity of light lm	0, 700 - 3880	0, 1400 - 7760	0, 1200 - 9200	3880	7760	9200
Operating temperature °C	-40…+50					
Weight kg	8.3	8.3	9.2	8.3	8.3	9.2
Materials	Anodized / painted (stoved) aluminum and stainless steel.					
Fastening	Ø 60 mm pole, horizontal arm or wire hanging					
Effective projected area	0,134 m²					
LED lumen maintenance	Compensated with a patented method that is based on the actualized power usage.			Typically less than 10%/100 000 h		
Life span $L_{80}B_{10}$ C_{10} T_a 25 °C	> 100 000 h			100 000 h		
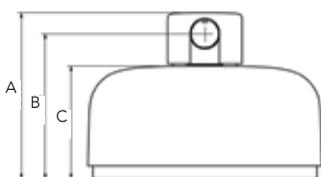
	A	B	C	D	E
	360	315	245	Ø 160	Ø 500

Measurements in millimetres

VP1011 Street Luminaire

Standard: | IP66 | RAL 7036 | 3 x 2,5 mm² | –O | ⚡ | ⏚ | ♻ | RoHS✓ | CE

Options: | DALI | 1-10V | PROG | NEMA | K CRI McAdam | RAL classic colours | CLO | ℹ

**Use for:** Street, road and training route lighting.

Optics: LEDiL Strada

Installation: Pole or shaft.

The cost efficiency of the street luminaire arises from high quality materials, high luminous efficiency and virtually non-existent maintenance costs.

VP1011	22	22 HP	40	40 HP	75	75 HP	110	150
Fix power								
Input power W	22	22	40	40	75	75	110	150
Useful quantity of light lm	2800	3300	4900	5900	8800	10000	12200	15800
Prog. option								
Input power W	10 - 22	10 - 22	23 - 40	20 - 40	45 - 75	41 - 75	76 - 110	111 - 150
Useful quantity of light lm	1200 - 2800	1500 - 3300	2700 - 4900	3100 - 5900	4700 - 8800	5800 - 10000	8000 - 12200	12000 - 15800
iLUMNET and Dali option								
Input power W	0, 5 - 22	0, 5 - 22	0, 6 - 40	0, 6 - 40	0, 10 - 70	0, 10 - 70	0, 15 - 110	0, 20 - 150
Useful quantity of light lm	0, 500 - 2800	0, 600 - 3300	0, 600 - 4900	0, 800 - 5900	0, 1000 - 8800	0, 1200 - 10000	0, 1500 - 12200	0, 2000 - 15800
Energy efficiency lm/W (70%)	140	157	135	155	130	140	120	115
Operating temperature °C	-40…+55							
Weight kg	~6,5							
Effective projected area	0,06 m²							
Materials	Painted (stoved) aluminium casting and arm bracket, UV protected polycarbonate.							
Fastening	Ø 60 mm pole Ø 42-60 mm shaft							
Tilt angle	0°, ± 5°, ± 10°, ± 15°							
Coupling	10 m MMJ cord or short MPK cable with connectors							
LED lumen maintenance	Compensated with a patented method that is based on the actualized power usage.							
$L_{80}B_{10}C_{10}T_a$ 25 °C	> 100 000 h							$L_{80}B_{10}C_{10}T_a$ 15 °C

valopaa. LUMINATION
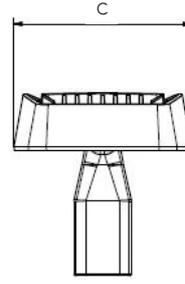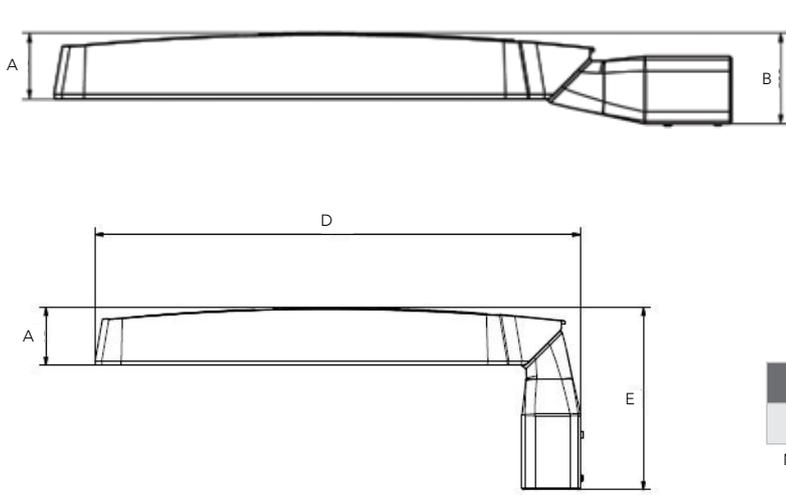
	A	B	C	D	E
	73	100	222	612	231

Measurements in millimetres

VP1011 with NEMA connector.

VP1011 with iNODE 500 module.

VP1011 whit iNODE 500 NEMA module.

valopaa. ILUMINATION

VP1101 Street Luminaire

Standard:

| IP43 | RAL9006 | 3 x 2,5 mm² | -O |

Options:

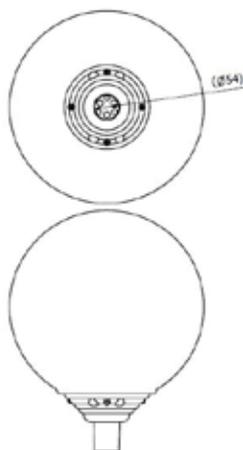| DALI | 1-10V | PROG | K CRI McAdam | CLO |

Use for: Streets, parks, bridges and yards.

Optics: Valopaa V8, V9B, V9D, V14

Installation: Mounted pointing downwards onto a Ø 60 mm arm.

VP1101 is designed as a traditional sphere luminaire, but it is equipped with the latest LED technology.

VP1101	M4 (Ø 400)	M4 (Ø 500)
Input power W	60	60
Useful quantity of light lm	5600	5600
Operating temperature °C	-40…+55	
Measurements Ø	Available in 400 mm or 500 mm diameter sphere	
Weight kg	4.5 kg	4.7 kg
Effective projected area	0,14 m²	0,22 m²
Materials	Grey painted aluminum, anodised aluminum, cast aluminum column bracket. Opal diffuser, prismatic or clear impact-resistant polycarbonate.	
Fastening	Ø 60 mm horizontal arm	
LED lumen maintenance	Compensated with a patented method that is based on the actualized power usage.	Typically less than 10%/100 000 h
Life span $L_{80}B_{10}\,C_{10}\,T_a\,25\,°C$	> 100 000 h	100 000 h

(Ø54)

	Height
Ø 400	396
Ø 500	501

Measurements in millimetres

Subject to change without prior notice.

valopaa. LUMINATION

VP1102 Street Luminaire

Standard:

| IP43 | RAL9006 | 3 x 2,5 mm² | -O |

(grounding symbol, recycling symbol, RoHS, CE)

Options:

| DALI | 1-10V | PROG | K CRI McAdam | CLO |
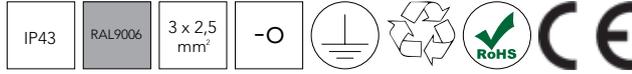
Use for: Streets, parks, bridges and yards.

Optics: LEDiL Strada

Installation: Mounted pointing upwards onto a Ø 60 mm arm.

VP1102 is designed as a traditional sphere luminaire, but it is equipped with the latest LED technology.

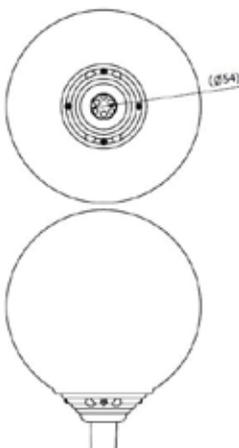| VP1102	M4 (Ø 400)	M4 (Ø 500)
Input power W	40	40
Useful quantity of light lm	3600	3600
Operating temperature °C	-40…+55	
Measurements Ø	Available in 400 mm or 500 mm diameter sphere	
Weight kg	4.5 kg	4.7 kg
Effective projected area	0,14 m²	0,22 m²
Materials	Grey painted aluminum, anodised aluminum, cast aluminum column bracket. Opal diffuser, prismatic or clear impact-resistant polycarbonate.	
Fastening	Ø 60 mm horizontal arm	
LED lumen maintenance	Compensated with a patented method that is based on the actualized power usage.	Typically less than 10%/100 000 h
Life span $L_{80}B_{10}$ C_{10} T_a 25 °C	> 100 000 h	100 000 h

(Ø54)

	Height
Ø 400	396
Ø 500	501

Measurements in millimetres

VP1701 Park Luminaire

Standard:

| IP54 | RAL9011 | 3 x 2,5 mm² | -O | | | | |

Options:

| RAL classic colours | K CRI McAdam | 1-10V | PROG | DALI | CLO | |
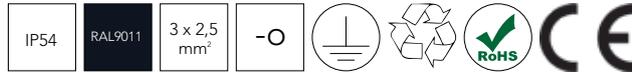
Use for: Walk path and park lighting

Optics: Valopaa V9

Installation: Pole Ø 60 mm.

Traditional and classic design combined with latest LED technology. Large optics assortment enables many kind of path and area lighting.

VP 1701	35	35i
Input power W	35	0, 4-35
Useful quantity of light lm	3200	0 320 - 3200
Operating temperature °C	-40…+40	
Weight kg	5	
Materials	Painted aluminium. Polycarbonate.	
Fastening	Screw fastening to pole.	
Connection	QPD connector	
LED lumen maintenance	Typically less than 10%/100 000 h	Compensated with a patented method that is based on the actualized power usage.
Life span $L_{80}B_{10}C_{10}T_a$ 25 °C	100 000 h	

Measurements in millimetres

Subject to change without prior notice.
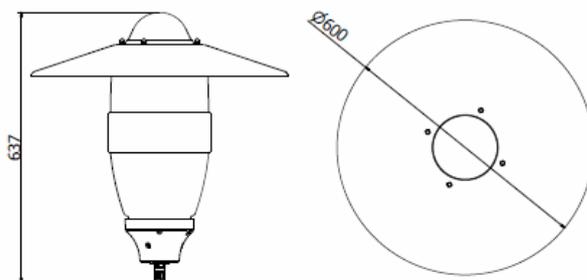
valoT VP81XX Street light & Bollard

Standard: IP65 | RAL7024 | 3 x 2,5 mm² | -O- | ♻ | RoHS | CE

Options: RAL classic colours | K CRI McAdam | RGBW | 350 mA | 700 mA | ℹ | ⚡
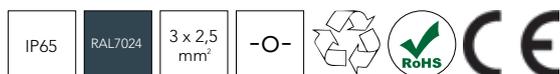
Optics: Selected case by case

Use for: Passageways, highlighting trees, facade lighting and spotlighting.

Installation: Concrete base. Available also for pole installation. The luminaire can be installed to metal and wooden poles.
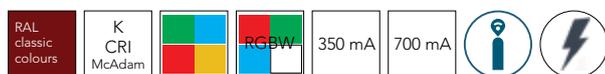
The design tolerates vandalism very well. The bollard can be equipped with intelligent motion sensors and controlled with the iLUMNET intelligent lighting control system. The two-sides (down and up) of version VP8111i can be controlled individually.

valoT concept design and shape created by Henrika Pihlajaniemi from Arkkitehdit m3 Oy.

	VP8111i (down + up)	VP8112i (down)	VP8113i (up)	VP8114i (forward)	VP8121i (2-sided down)	VP8122i (1-sided down)
Input power W	0, 4 - 40	0, 3 - 25	0, 2 - 17	0, 3 - 25	0, 7 - 70	0, 4 - 40
Useful quantity of light lm	0, 440 - 4000	0, 350 - 2500	0, 200 - 1700	0, 350 - 2500	0, 770 - 7000	0, 440 - 4000
Operating temperature °C	-40...+40					
Bollard measurement l x w	180 x 180 mm					
Bollard height mm	1200				5000	
Measurements l x w x h mm	470 x 180 x 180	320 x 180 x 180	320 x 180 x 180	320 x 180 x 180	470 x 180 x 180	320 x 180 x 180
Materials	Bollard and luminaire; zinked steel, painted. Light source: aluminium					
Fastening	Concrete base. Pole mounting with adjustment bolts					
LED lumen maintenance	Compensated with a patented method that is based on the actualized power usage.					
Life span $L_{80}B_{10} C_{10} T_a$ 25 °C	> 100 000 h					

VP2101 & VP2102 Canopy Luminaires

Standard:

| IP66 | RAL9006 | 5 x 2,5 mm² | -O- | F | ⏚ | ♻ | RoHS ✓ | C E |

Options:

| DALI | 1-10V | PROG | K CRI McAdam | RAL classic colours | ⚡ |

Use for: Underpasses of walkways and roads, parking garages, canopies and industrial buildings.

Optics: Valopaa V8, V9, V9B

Installation: Recessed. Surface mounting with installation frame.

The front cover of VP2101 is mat lacquer polycarbonate. VP2102 uses opal polycarbonate as front cover.

VP2101	20	40	
VP2102			40
Input power W	20	40	40
Useful quantity of light lm	1900	3400	1300
Operating temperature °C	-40…+55		
Weight kg	4.1	4.1	4.1
Materials	Painted aluminium and stainless steel. Front cover 6mm polycarbonate, with diffusing lining.		
Fastening	Screw fastening to ceiling material.		
LED lumen maintenance	Typically less than 10%/100 000 h		Typically less than 10%/100 000 h
Life span $L_{80}B_{10}$ C_{10} T_a 25 °C	100 000 h	100 000 h	100 000 h

valopaa. LUMINATION

Subject to change without prior notice.
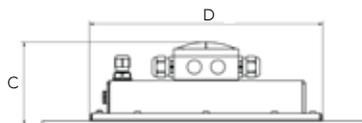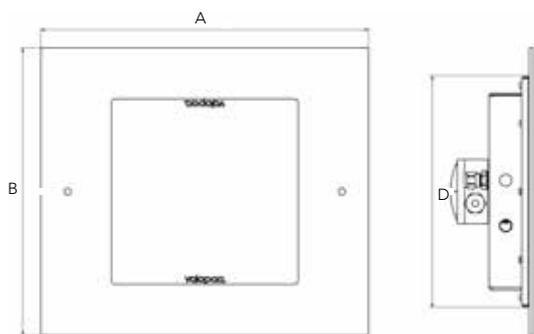
	A	B	C	D
Size S	430	380	110	306
Size L	620	450	110	306

Measurements in millimetres

VP210X Surface mounting frame

With the surface mounting frame, VP2101 and VP2102 luminaires can be surface mounted eg. in underpasses. Frame has two knockoffs on every side. Therefore wiring is easy and fast to build.

Measurements (mm)	430 x 380 x 115
Materials	Stainless steel.
Suitable luminaires	S-models

VP210X Concrete casting frame

With the casting frame, luminaire casting cavity is easy and fast to build. The frame has knockoffs for M25 cabinet sleeves on every side.

With the frame 2 pcs M25 cabinet sleeves will be delivered. Therefore wire piping is easy and fast to build.

Measurement	622 x 452 x 127
Materials	Stainless steel.
Suitable luminaires	L-models

VP2221 Canopy Luminaire

Standard: | IP65 | RAL9006 | 5 x 2,5 mm² | -O- | F | (earth) | (FI) | (recycle) | (RoHS) | CE

Options: | PROG | DALI | RAL classic colours | K CRI McAdam | □ | (lightning)

Use for: Underpasses of walkways and roads, bridges, parking garages and canopies.

Optics: Valopaa V9, V9B, V9D, V14, V15

Installation: Recessed, only the exothermic panel and the light-emitting lens of the LED modules are left visible from under the ceiling structure.

The luminaire structure is durable and safe. Vandalism shield installed on top of the LED module and optical lens protects from spray paints and decreases the risk of mechanical strain and damage.

The VP2221 LED luminaire is approved by the Finnish Transport Agency.

VP2221	M1	M2	M3	M4
Input power W	11	22	33	39
Useful quantity of light lm	1000	2000	3000	4000
Operating temperature °C	-40…+40			
Weight kg	3,4	3,7	4	4,5
Materials	Painted (stoved) aluminium and stainless steel.			
Fastening	Screw fastening to ceiling material.			
LED lumen maintenance	Typically less than 10%/100 000 h			
Life span $L_{80}B_{10}$ C_{10} T_a 25 °C	100 000 h			

valopaa. LUMINATION
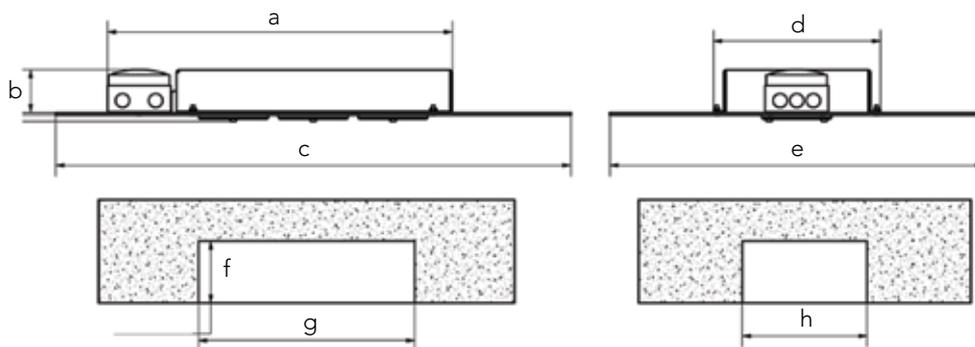
	a	b	c	d	e	f *	g *	h *
M1 S	160	68	200	93	200	min. 100	170	100
M2 S	360	68	400	93	200	min. 100	370	100
M1 L M2 L M3	415	68	620	201	450	min. 120	515	325

Measurements in millimetres

* In addition, note the space required for the wiring on the sides.

VP2221 Concrete casting frame

With the casting frame, luminaire casting cavity is easy and fast to build. The frame has knockoffs for M25 cabinet sleeves on every side.

With the frame 2 pcs M25 cabinet sleeves will be delivered. Therefore wire piping is easy and fast to build.

	Casting frame S	Casting frame L
Measurement (mm)	204 x 204 x 128	622 x 452 x 127
Materials	Stainless steel..	
Suitable luminaires	M1 S	M1 L, M2 L, M3, M4

valopaa. ILUMINATION

VP2223 Canopy Luminaire

Standard:

| IP44 | RAL9006 | 5 x 2,5 mm² | -O- | F | ⏚ | ♻ | RoHS | C E |

Options:

| PROG | K CRI McAdam | RAL classic colours | ☐ | ⚡ |

Use for: Underpasses, bridges, tunnels, parking garages, building canopies and industrial buildings.

Optics: Valopaa V9, V9B, V11, V12, V14

Vandalism shield installed on top of the LED module and optical lens protects from spray paints and decreases the risk of mechanical strain and damage.

VP2223	M1	M2	M3	M4
Input power W	11	22	33	39
Useful quantity of light lm	1000	2000	3000	4000
Operating temperature °C	-40…+40			
Weight kg	0.9	2.2	2.4	3.5
Materials	Painted (stoved) aluminium and stainless steel.			
Fastening	Screw fastening to ceiling structure.			
LED lumen maintenance	Typically less than 10%/100 000 h			
Life span $L_{80}B_{10}C_{10}T_a$ 25 °C	100 000 h			
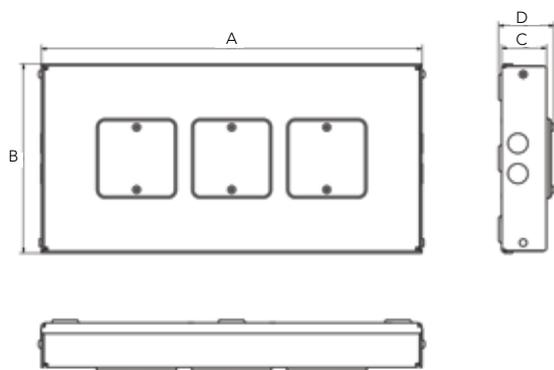
	A	B	C	D
M1	200	200	47	58
M2	400	200	47	58
M3	400	200	47	58
M4	400	400	47	58

Measurements in millimetres

Subject to change without prior notice.

VP2224 Canopy Luminaire

Standard:

IP65 | RAL9006 | 5 x 2,5 mm² | -O- | F

Options:

PROG | RAL classic colours | K CRI McAdam

Use for: Demanding environments in road and street lighting.

Optics: Valopaa V9, V9B, V11, V12, V15

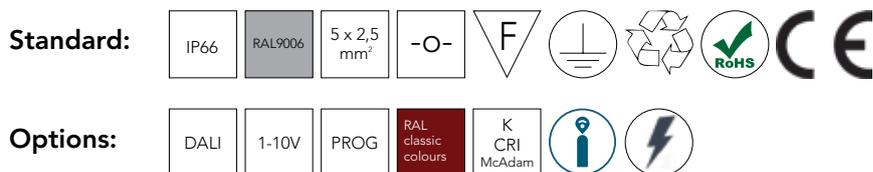The VP2224 LED luminaire is approved by the Finnish Transport Agency.

VP2224	M1	M2	M3	M4
Input power W	11	22	33	39
Useful quantity of light lm	1000	2000	3000	4000
Operating temperature °C	-40…+40			
Weight kg	2	5.5	5.7	5.9
Materials	Painted (stoved) aluminium and stainless steel.			
Fastening	Screw fastening to ceiling structure.			
LED lumen maintenance	Typically less than 10%/100 000 h			
Life span $L_{80}B_{10}$ C_{10} T_a 25 °C	100 000 h			
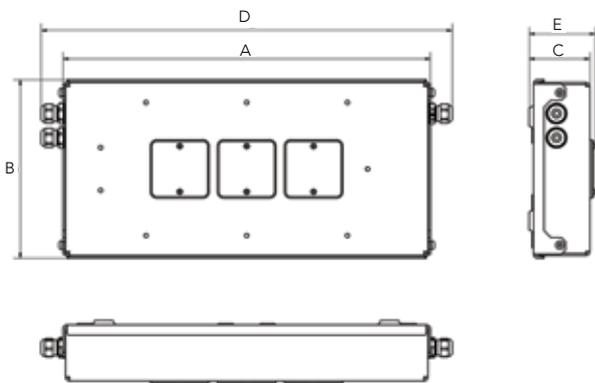
	A	B	C	D	E
M1	328	258	88	390	95
M2	528	258	88	590	95
M3	528	258	88	590	95
M4	528	258	88	590	95

Measurements in millimetres

valopaa. ILUMINATION

VP2503 Industrial Luminaire

Standard:

| IP66 | RAL9006 | 5 x 2,5 mm² | -o- | F | (earth) | (recycle) | RoHS | CE |

Options:

| DALI | 1-10V | PROG | RAL classic colours | K CRI McAdam | (i) | (lightning) |

**Use for:** Sports facilities, industrial halls and warehouses.

Optics: Valopaa V8, V9, V9B, V9D, V10, V11, V12, V14

Installation: Horizontal wire rope, or directly to ceiling, wall or rail with the shaft

All electronics and drivers have been placed out of the heating range of the LEDs in order to ensure long lifetimes also in warm conditions. The luminaire is also available with tempered front glass to ensure better encapsulation.

VP2503	200 i	300 i	200	300
Input power W	0, 20 - 200	0, 30 - 300	200	300
Useful quantity of light lm	0, 2000 - 19 700	0, 3000 - 25 500	19 700	25 500
Operating temperature °C	-40…+40	-40…+30	-40…+40	
Weight kg	12			
Materials	Painted (stoved) aluminium and stainless steel.			
Fastening	Screw fastening to ceiling, wall or rail, or hanging from a wire rope.			
LED lumen maintenance	Compensated with a patented method that is based on the actualized power usage.		Typically less than 10%/100 000 h	
Life span $L_{80}B_{10} C_{10} T_a$ 25 °C	> 100 000 h		100 000 h	
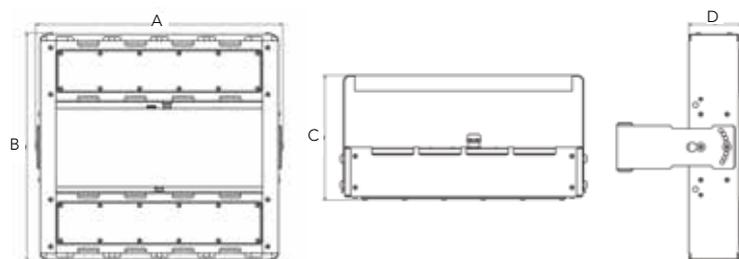
	A	B	C	D
200, 300	470	440	295	102

Measurements in millimetres

Subject to change without prior notice.

VP2601 Industrial High Bay Luminaire

Standard: | IP66 | RAL7040 | 3 x 2,5 mm² | –O | ♻ | ✓ RoHS | C E

Options: | PROG | DALI | 1-10V | 🛈
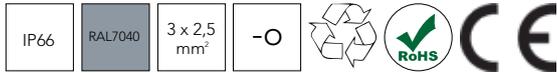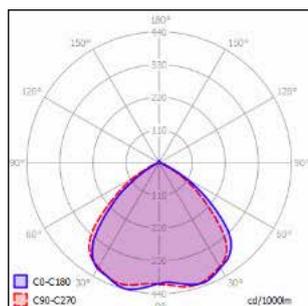
Use for: Industrial and business premises

Optics: See below.

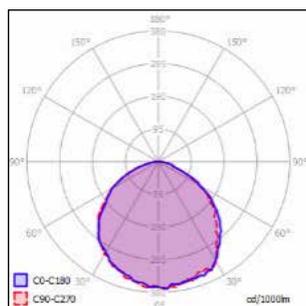**Installation:** Pendant mounting with a hook

Easy to install and locate freely. With a smooth and uniform light beam. Furnished with high quality components. Over heat protection as a standard feature.
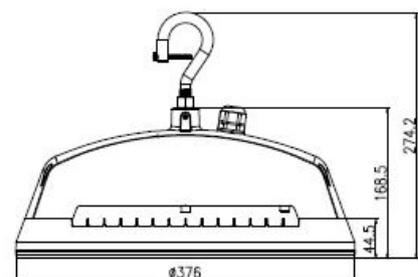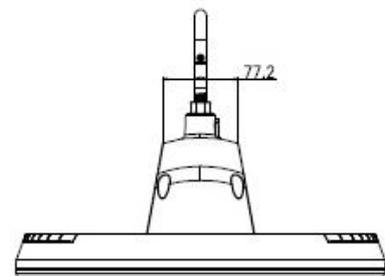
VP2601	150	150i
Input power W	150	0, 15-150
Useful quantity of light lm	18350	0, 2000 - 18350
Operating temperature °C	-40…+40	
Weight kg	7	
Materials	Painted (stoved) aluminium. Hardaned glass.	
Connection	Connection cable with schuko head	
Fastening	Hook	
LED lumen maintenance	Typically less than 10%/100 000 h	
Life span $L_{80}B_{10} C_{10} T_a$ 25 °C	100 000 h	

HB-1

HB-L

Measurements in millimetres

VP2701 Industrial Luminaire

Standard: | IP66 | RAL7047 | 5 x 2,5 mm² | -o- | F | D | ⏚ | ♻ | RoHS ✔ | C E

Options: | DALI | 1-10V | PROG | ⓘ

Use for: Industrial halls, animal shelters, storages, parking halls.
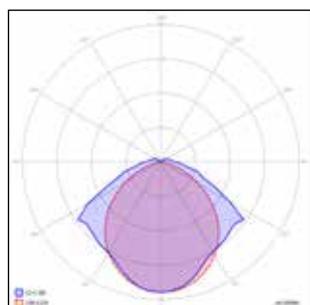
Optics: See below.

Installation: Ceiling.

VP2701 replaces two 58W fluorescent tubes. Saves energy over 50% compared to fluorescent tubes. No maintenance costs or need to change the tubes.

Front cover is opal polycarbonate.

VP2701	70i	70
Input power W	0, 7 - 70	70
Useful quantity of light lm	0, 975 - 9775	9775
Operating temperature °C	-40…+55	
Weight kg	3	3
Materials	Housing polycarbonate. Front cover opal polycarbonate. Latch stainless steel.	
Fastening	Screw fastening to ceiling material.	
LED lumen maintenance	Compensated	Typically less than 10%/50000 h
Life span $L_{80}B_{10}C_{10}T_a$ 25 °C	> 50 000 h	50 000 h

Lenght	Wide	Height
1572	145	100

Measurements in millimetres

Subject to change without prior notice.

valopaa. LUMINATION

VP3233 Floodlight Luminaire

Standard:

| IP65 | RAL9006 | 3 x 2,5 mm² | -O | F | ⚡ | ♻ | RoHS | CE |

Options:

| RAL classic colours | K CRI McAdam | PROG |

Use for: Area, spot and staircase lighting. Work lights when supplied with electrical cords.

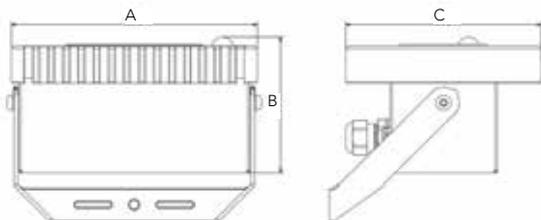**Optics:** Valopaa V7, V8, V9B, V9D, V10, V11, V12, V13

Installation: With screws or U-bolts to walls or poles.

VP3233	M1	M2
Input power W	11 [1] 17 [2]	22 [1] 36 [2]
Useful quantity of light lm	1000 [1] 1800 [2]	2000 [1] 3600 [2]
Operating temperature °C	-40…+55 [1] , -40…+40 [2]	
Weight kg	1.5	2.0
Materials	Painted aluminium and stainless steel.	
Fastening	Screw fastening to ceiling, wall or pole.	
LED lumen maintenance	Typically less than 10%/100 000 h	
Life span $L_{80}B_{10} C_{10} T_a$ 25 °C	100 000 h	

[1] 350 mA LED current
[2] 700 mA LED current

	A	B	C
	195	110	95

Measurements in millimetres

VP3511 Floodlight Luminaire

Standard:

| IP66 | RAL7024 | 3 x 2,5 mm² | -O | ⏚ | F | ⚡ | Wieland | ♻ | RoHS | CE |

Options:

| [colour swatch] | RGBW | DALI | 1-10V | PROG | RAL classic colours | K CRI McAdam | Liitos-kaapeli | ℹ |

Use for: Both indoor and outdoor use. Spotlighting and area lighting.

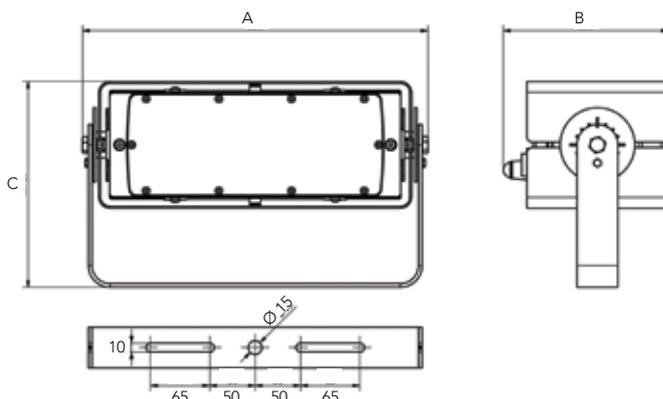**Optics:** Valopaa V7, V8, V9B, V10, V11, V12, V14, V15

Installation: Ceilings, walls or poles. The installation angle is fully adjustable and the luminaire can be aligned as needed.

Available also with pre-installed power cables, making the floodlights easy to use and move according to needs, e.g. at construction sites.

VP3511	70i	140i	280i	70	140	280
Input power W	0, 9 - 70	0, 16 - 140	0, 32 - 280	72	140	280
Useful quantity of light lm	0, 900 - 7500	0, 1600 - 13200	0, 3200 - 26400	6500	13200	26400
Operating temperature °C	-40…+55	-40…+55	-40…+40	-40…+55	-40…+40	-40…+40
Weight kg	5.7	6.9	9.5	5.5	6.7	9.3
Materials	Painted (stoved) aluminium and stainless steel.					
Fastening	Screw fastening to ceiling, wall or pole.					
LED lumen maintenance	Compensated with a patented method that is based on the actualized power usage.			Typically less than 10%/100 000 h		
Life span $L_{80}B_{10} C_{10} T_a$ 25 °C	> 100 000 h			100 000 h		

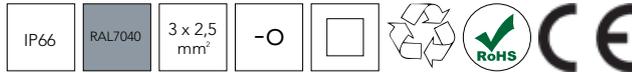| VP3511	100i RGBW
Input power W	100
Useful quantity of light lm	4300 (CCT 4000K, CRI70) 3500 (RGB)
Operating temperature °C	-40…+55
Light control method	iLUMNET or DMX

	A	B	C
70, 70i	380	181	227,5
140, 140i	380	181	227,5
280, 280i	385	181	353,5
100i RGBW	380	181	227,5

Measurements in millimetres

Subject to change without prior notice.

LUMINATION

VP3601 Floodlight Luminaire

Standard:

| IP66 | RAL7040 | 3 x 2,5 mm² | –O | ☐ | ♻ | ✔ RoHS | C E |

Options:

| PROG | 1-10V | DALI | ℹ |

Use for: Indusrial and area lighting

Optics: See below.

Installation: Ceilings, walls or poles. The installation angle is fully adjustable and the luminaire can be aligned as needed.

Energy efficient luminaire for area lighting. Furnished with high quality components. Over heat protection as a standard feature.

VP 3601	125	250
Input power W	125	250
Useful quantity of light lm	1480 - 14800	2960 - 29600
Operating temperature °C	-40…+40	
Weight kg	11	
Materials	Painted (stoved) aluminium. Hardened glass.	
Fastening	Screw fastening to ceiling material.	
Connection	Connection cable with schuko head.	
LED lumen maintenance	Typically less than 10%/100 000 h	
Life span $L_{80}B_{10} C_{10} T_a$ 25 °C	100 000 h	

FL-1

FL-L

Measurements in millimetres

valopaa. ILUMINATION
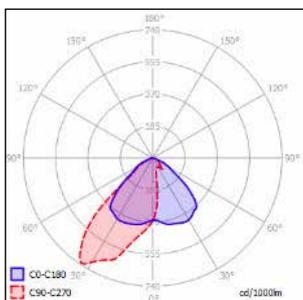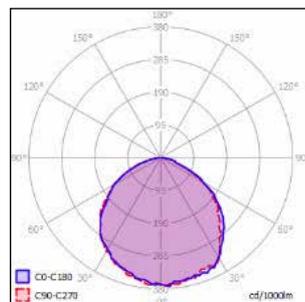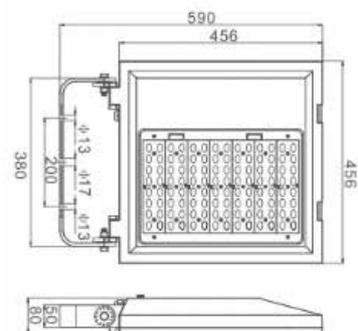
LED FLOODLIGHT LUMINAIRES

References and applications

JOENSUU, FINLAND

City of Joensuu has been undergoing a significant street lighting renewal project during the last couple of years. Over 5000 Ilma VP1011 luminaires have found a new home in the streets of Joensuu.

Joensuu manages new luminaire data with the iLUMNET system. Each luminaire has individual QR-code, which includes the product technical information. In installation phase QR-code is read with a mobile application and product information and location data are transferred into the iLUMNET server.


RAATTI STADIUM, OULU

The wall surrounding the stadium has 184 luminaires under the canopy that have been installed in 2009. Up until this day the lights have been on for about 40 000 hours with 0 faults. The energy efficient illumination yields soft white light on the wall, creating a beautiful landmark.

E75 HIGH WAY, OULU

The first LED lighting project at a high way in Finland. 13 underpasses have VP2221 luminaires installed on the undersides of bridges spanning over the high way. The installations were made year 2010, thus having already been on for 35 000 hours with fault rate of 0%.

Valopaa bridge luminaires have been installed in thousands of bridges around Finland since 2010. The luminaires have proven to be reliable and durable at demanding conditions. Structural solutions of the luminaires and selected components have been great choices. These experiences are leveraged at our R&D and new products.
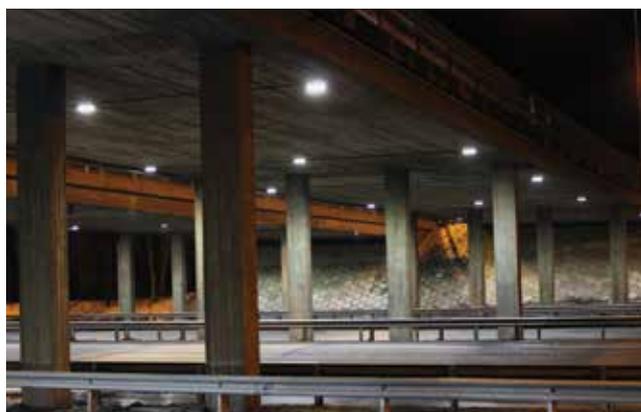
KUUSAMO, FINLAND

The Kirkkosaari illumination in Kuusamo Finland has received an honorary award in the yearly contest for the best illumination sight in Finland. This outstanding and intelligent lighting sight has been designed by Henrika Pihlajaniemi from Arkkitehdit M3. The luminaires used are the valoT bollards, and they are controlled with the iLUM-NET intelligent lighting management system, both from Valopaa.

The intelligent iLUMNET lighting control system is a modern way to create adaptive illumination. The control system communicates wirelessly, thereby enabling easy variations of the illumination for different seasons and special events.

The Kirkkosaari illumination strives to create both memorable and safe experience for people strolling the area. The pure white light along the walkway through the island supports the feeling of safety, whilst RGBW floodlights among trees increases attractiveness of the area. The illumination of the walkways is adjusted according to people moving at the area, time of day and snow conditions. Seasons and changing colors of the surrounding nature can be emphasized with color changing flood lights.

Map view of Kirkkosaari in iLUMNET system
iLUMNET system enables operator to create lighting controls based on astronomical clock, real time and sensor information. Operator can also create luminaire groups and adjust whole group as one.

LOHJA WATERTOWER, FINLAND

Lohja's old water tower was restored to a piece of art in summer 2016. Tower illumination was made with intelligent VP3511 floodlights and wireless iLUMNET control system. Control system sets lighting on at twilight and turns it off at dawn. Illumination level fluctuates in 60 minute cycles, being at the highest level on the hour.

Spare part service and warranty

WARRANTY

The VP1011 street luminaires have a limited warranty period of ten (10) years from the date of shipment or date of deployment according to data in the iLUMNET system. Other Valopaa luminaires have warranty period of five (5) years from the date of shipment from Valopaa Ltd's facilities. Full warranty document upon request or can be downloaded from www.valopaa.com.

MAINTENANCE SERVICE

Valopaa Ltd. arranges the maintenance service for Valopaa luminaires. For more information, please contact your sales representative or contact us by email customer.care@valopaa.com. The defective device can be replaced with a corresponding device or it is repaired at our factory. Using the iLUMNET system expedites the maintenance by providing necessary product data.

HIGH QUALITY SPARE PARTS

Each device has a product label with a serial number. Valopaa identifies, based on the serial number, all essential components of the product, and can thereby provide the necessary spare parts. Drivers and surge protectors are readily available components from well-known manufacturers.

Contact

- customer.care@valopaa.com
- +358 10 470 8890

Customer support

BEFORE ACQUISITION

We can help our customers in specifying the most suitable lighting solution. If needed, we can provide lighting calculation and suggest lighting control techniques. Light distribution files for the luminaires are available for download from our website.

DEPLOYMENT AND USE

If necessary, training is available for the contractor and end customer before luminaire installations. We provide support with deployment of the iLUMNET system, and can implement the control configuration if needed. We can also take care of the maintenance of the intelligent lighting and timeliness of the control for our customer, if requested.

PRODUCT LIFECYCLE EXPIRATION

The Valopaa products have been developed for long term use and are fully recyclable. They don't contain any toxic substance. Most of their weight is of metal, aluminum and steel, which are valuable also after the product lifecycle has come to an end. Drivers and LED modules are normal electronics and are recycled accordingly.

valopaa. LUMINATION

Symbols

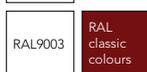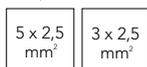|	
K CRI McAdam	K, CRI (70, 80, 90) and MacAdam changes available as an option, with limitations from the LED manufacturer.
RoHS	All Valopaa products are made from RoHS compliant components and materials.
(recycle)	All VP LED luminaires are fully recyclable and they do not contain hazardous waste or other dangerous materials.
CE	The CE marking is the manufacturer's declaration that the product meets the requirements of the applicable EC directives.
IP65	IP class. The stated IP class is always for installed luminaires.
(colours)	It is possible to use colour LEDs. The colour LEDs are available as an option with limitations from the LED manufacture.
RAL9003 / RAL classic colours	The casing colour. RAL classic colour as well as other finish gloss levels and structures are available as an option.
Wieland	The luminaire has Wieland connector as standard.
(ground symbol)	Luminaire is grounded.
(class 2 symbol)	Electrical protection class 2.
F	Luminaire can be directly mounted on a normally flammable surface.
D	Luminaire can be intall in dusty location.
5 x 2,5 mm² / 3 x 2,5 mm²	The connection cable type of the luminaire.
-O- / -O	The connection of the luminaires.
(i symbol)	Luminaires are available as intelligent versions (i).
NEMA	Luminaire is available with NEMA-connector.
DALI	Luminaire is available with the DALI control system compatible drivers.
1-10V	Luminaire is available with $1\text{-}10V_{DC}$ dimmable drivers.
PROG	Programmable dimming and power level.
(lightning symbol)	Surge protection.
Käyttö-lämpötila	Use temperature where luminaire work reliably.
CLO	Luminaire lumen output will not decrease during lifetime.
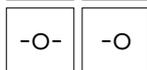
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iLUMINATION