REFITTING KIT

BRAVE
WITH PROTECTION GLASS,
DRIVER AND SURGE PROTECTION

BRAVE

Modular built-in light engines for outdoor applications with glass

With double LED module (24 LEDs)

Typical applications

Integration in luminaires

- Street lighting, urban street lighting
- Flood and area lighting
- Industrial lighting for production halls & warehouses
- Indoor lighting
- Lighting for sports facilities

Refitting Kit – BRAVE

- **DEGREE OF PROTECTION: IP20 AND IP66**
- **COLOUR TEMPERATURES: 4000K / 3000K /2700K / 2200K**
- **HIGHLY EFFICIENCY: UP TO 120 LM/W**
- **SURGE PROTECTION UP TO 12 KV**
- **MADE IN ITALY**

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LIGHTING SOLUTIONS

Vossloh-Schwabe Deutschland GmbH · Stuttgarter Straße 61/1 · 73614 Schorndorf · Germany · Phone +49 7181/8002-0 · Fax +49 7181/8002-122 · www.vossloh-schwabe.com

BRAVE

IP 20 refitting kit with BRAVE with glass, driver and surge protection

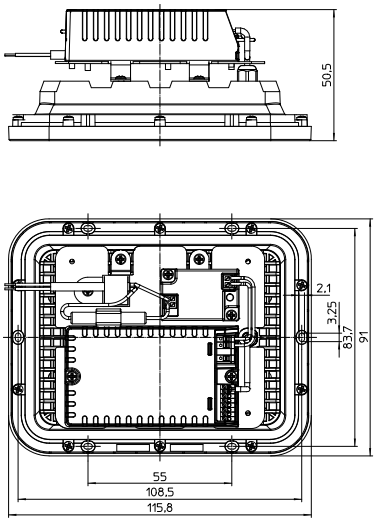
Technical notes
Refitting kit with engine, driver and surge protection
Mains voltage: 220-240 V AC
Mains frequency: 50-60 Hz
IP Protection: IP20 (optical compartment IP66)
Luminous flux: 6460lm
Power: 54W (@700mA)
Efficiency: 120lm/W
Ambient temperature: -30°C/+55°C

Optical compartment
Engine Brave with glass equipped with 2pcs of WU-M-630-SA
Colour temperature-CRI: 3000K - CRI70 (further CCTs on request)
Lens material: PMMA (PC on request)
Light distribution: IESNA Type P2M (further LDCs on request)
ESD protection class 3 (up to 8kV)
Max. operating temperature at tc point: 75°C
Lumen maintenance: L80/B10; > 102.000 hours
at max. allowed operation current and
60°C at tp point
Initial colour accuracy: 5 SDCM
Upward light emission ratio: 0.01

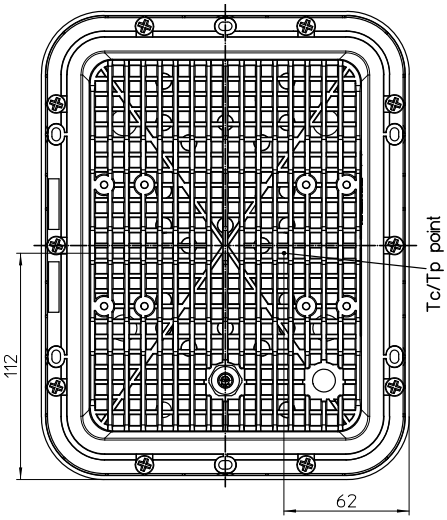
Operating devices
Fuse protection: 5A
Driver 187470 CC ComfortLine: AOC via NFC, MidNight function
Dimming range: 10 to 100%
Surge protection 142710 up to 12kV
Please double check Tc point for single components
Leads: bi-polar cable, double insulation PVC/PVC,
2x1.00mm², lead lenght: 500mm

Type: Refitting KIT IP20 Brave BRV-24-630SA-730-P2M
Ref.No.: 573682

Mechanical measurement



Tc/Tp point



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BRAVE

IP66 refitting kit with BRAVE with glass, driver and surge protection

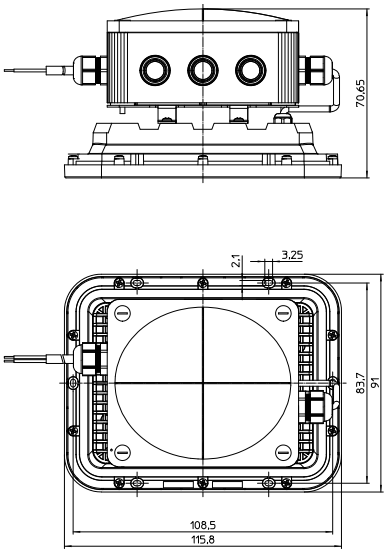
Technical notes
Refitting kit with engine, driver and surge protection
Mains voltage: 220-240 V AC
Mains frequency: 50-60 Hz
IP Protection: IP66
Luminous flux: 6460lm
Power: 54W (@700mA)
Efficiency: 120lm/W
Ambient temperature: -30°C/+55°C

Optical compartment
Engine Brave with glass equipped with 2pcs of WU-M-630-SA
Colour temperature-CRI: 3000K - CRI70 (further CCTs on request)
Lens material: PMMA (PC on request)
Light distribution: IESNA Type P2M (further LDCs on request)
ESD protection class 3 (up to 8kV)
Max. operating temperature at tc point: 75°C
Lumen maintenance: L80/B10; > 102.000 hours
at max. allowed operation current and
60°C at tp point
Initial colour accuracy: 5 SDCM
Upward light emission ratio: 0.01

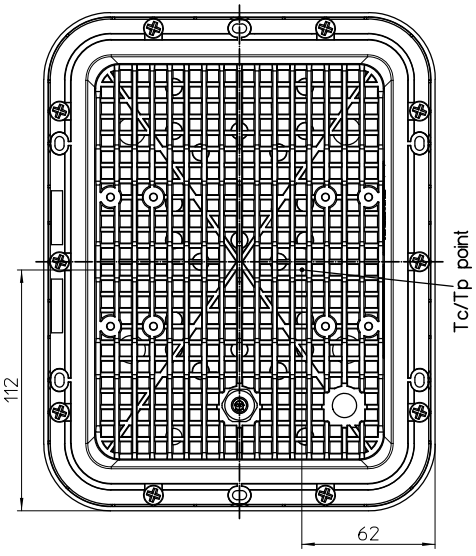
Operating devices
Fuse protection: 5A
Driver 187470 CC ComfortLine: AOC via NFC, MidNight function
Dimming range: 10 to 100%
Surge protection 142710 up to 12kV
Please double check Tc point for single components
Leads: bi-polar cable, double insulation PVC/PVC,
2x1.00mm², lead lenght: 500mm

Type: Refitting KIT IP66 Brave BRV-24-630SA-730-P2M
Ref.No.: 573683

Mechanical measurement



Tc/Tp point



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General information

Performance acc. to IEC 62717: L80/B10 t_p = 60 °C – > 102,000 hrs.

Packaging unit

Type	Packaging unit pcs.	Box dimensions (LxWxH) mm	Weight single (g)	Gross weight packaging unit (g)
Refitting Kit IP20	1	150x200x90	1820	2027
Refitting Kit IP66	1	150x200x90	2140	2347

General safety and installation instructions

- These instructions must be carefully read before installing and commissioning the system, as this is the only way to ensure safe and correct handling.
- VS product may only be installed and commissioned by authorised and fully qualified staff.
- No object can be placed in contact with heat sink: thermal management might be compromised.
- Before any work is carried out on the equipment, it must be disconnected from the mains.
- All valid safety and accident-prevention regulations must be observed.
- The products should never be inexpertly opened. Repairs may only be undertaken by the manufacturer.

EPREL information

Containing product Types	Light Source Type	EPREL Reg.No.	EE Class
Refitting Kit	WU-M-630-SA-12-730	2000103	C

LED Constant Current Drivers

Please visit our homepage for details for suitable
LED constant current drivers: www.vossloh-schwabe.com

Surge Protection

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LED constant current drivers: www.vossloh-schwabe.com

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Assembly and Safety Information

Installation must be carried out under observation of the relevant regulations and standards. The Refitting Kit is designed for operation within a casing or luminaire. Safety regulations acc. to EN 60598 has to be observed. Installation must be carried out in a voltage-free state (i.e.disconnection from the mains).

- Refitting Kit must not be subjected to any undue mechanical stress, e. g.:
  - handle carefully
  - avoid shear and compressive forces onto the optics during handling and installation
  - avoid vibrations of more than 2 kHz, 40 G
  - do not carry or move the Refitting Kit by using the wires
- When installing/screwing into a luminaire, please ensure that the cables are not squeezed between luminaire and Refitting Kit.
- The Refitting Kit must not be used in hermetically sealed casings.
- Safe operation only possible by the use of external constant current sources ($I_{max.}$ see table "Electrical Characteristics").
- The maximum output of the power supply must be observed.
- Safety regulations acc. to EN 60598 has to be observed if the sum of forward voltage exceed the permitted touchable value.
- A parallel connection is not allowed.
- The clearance and creepage distances of Refitting Kit are designed for working voltages up to 450 V DC (basic insulation) acc. to EN 62031/EN 60598. This value is designed between live parts and accessible metal parts.
- For insulation class II refers to EN 60598-1, Annex X.
- If a system consists of multiple Refitting Kit connected to a single driver, only one module will be monitored by the NTC. That means that one module is in "master" mode operated and the rest are operated in "slave" mode.
- Please ensure standard ESD (electrostatic discharge) protection measures are employed when handling and installing Refitting Kit. Electrostatic discharge can damage LEDs.
- To ensure problem-free operation, the specified maximum temperature at the t_c and t_p point (see "Operating Life") must be observed (measured in accordance with EN 60598-1). To satisfy this point, it is necessary to put measures in place to ensure any heat is dissipated from the Refitting Kit to the environment.
- To ensure good thermal behaviour take care about "general safety and installation instructions".
- Operating Refitting Kit in the presence of certain chemical substances or in chemically enriched (aggressive) environments can impair module functionality or even cause total module failure. Detailed information can be found in our "Chemical Incompatibility" PDF on our website www.vossloh-schwabe.com
- The photobiological safety of the LED modules must be classified into risk groups in accordance with EN 62471: 2008
  - general lighting
    exempt group: WU-M-630-SA/xx-X
  - other applications
    risk group 2: WU-M-630-SA/xx-X

  Assessment in acc. with IEC/TR 62778:
  Given a clearance of more than d_{min}, within which the lighting intensity limit of E_{thr} = 900 lx is attained, the classification goes down to Risk Group 1.

Applied Standards

EN 62031
LED modules for general lighting – Safety specifications

EN 62471
Photobiological safety of lamps and lamp systems

IEC/TR 62778

Product Guarantee

- 5 years
- The conditions for the Product Guarantee of the Vossloh-Schwabe Group shall apply as published on our homepage (www.vossloh-schwabe.com). We will be happy to send you these conditions upon request.

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