

LED Solutions 2015-2016

Helvar

freedom in lighting

HELVAR LED OFFERING

Helvar's extensive LED range of drivers, sensors, modules and accessories can be used as single components or combined into smart energy efficient lighting solutions.



OFFICE



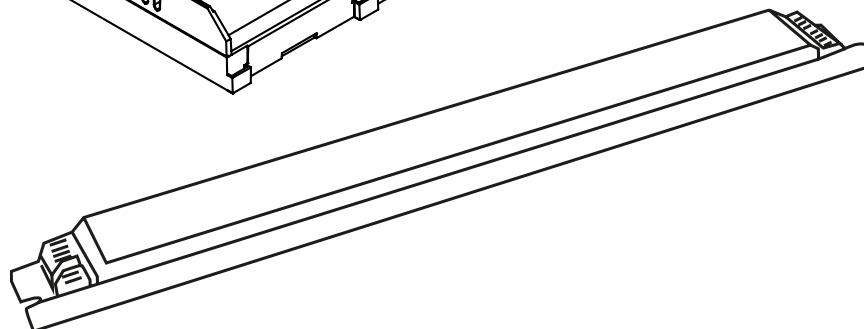
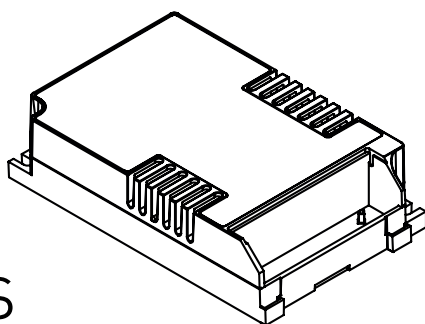
EDUCATION



HEALTHCARE

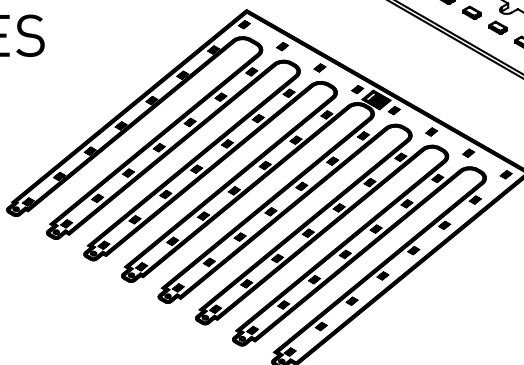
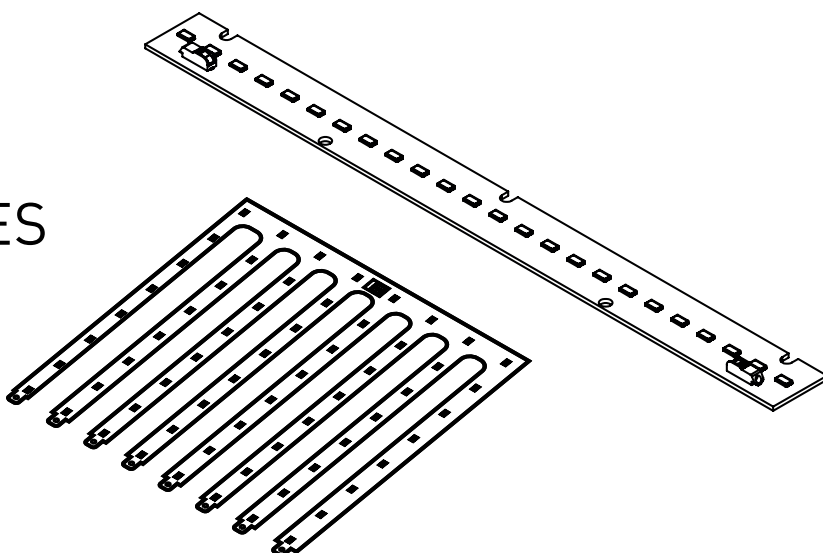
LED DRIVERS

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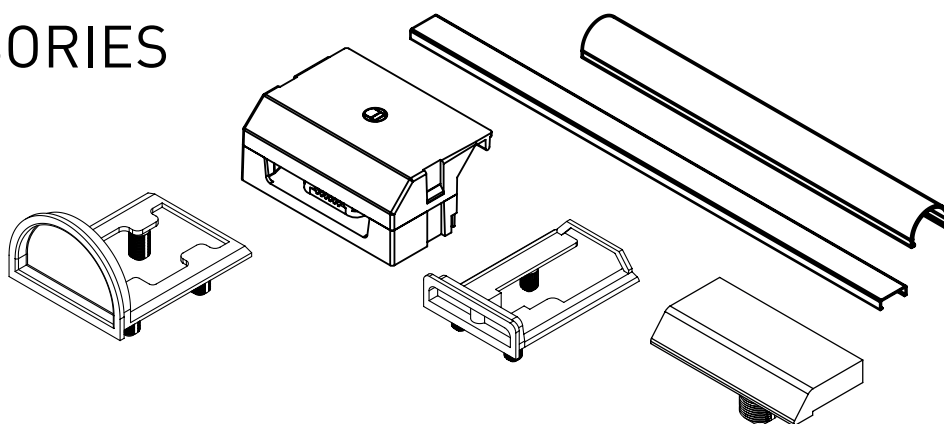
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HELVAR INTELLIGENT COLOUR SERIES

TUNABLE WHITE

Helvar's iC range introduces easy colour control enabled by DALI Type 8 commands.



WHY DO WE NEED TUNABLE WHITE?

Tunable White products help you mix warm and cool white light and light intensity so that you can mimic outdoor lighting conditions (where morning light has different colour and intensity than midday light). This promotes feelings of well-being and productivity for people who spend big part of their day indoors in artificial light, e.g. office workers, school students, hospital patients, etc.

WHAT BENEFITS DOES DALI COLOUR CONTROL BRING?

DALI's new Colour control standard enables you to pick a scene of colour and intensity in one easy step, vastly decreasing programming time. This new standard only needs one DALI address, which greatly reduces the cost of a DALI lighting system. The DALI type 8 (Dt8) commands enable us to control two or more output channels by one common address.

HELVAR'S IC DALI DRIVERS

The new Helvar iC DALI Drivers have been developed specifically for dimming and tuning the white colour. The drivers are among the first ones available in the market responding to Dt8 commands. The two driver output channels are connected to two modules with different colour temperatures, warm white and cold white which are then controlled by using only one address.

The total power of the drivers can be divided between the two output channels in any proportion. The current output can be set between 350 mA and 700 mA, with a current setting resistor.

Key product information:

- Two independent SELV rated output channels
- DALI type 8 software
- Stepless dimming
- High efficiency, 0.90
- External NTC thermal input
- Switch-Control for intensity and colour control

DALI DRIVER CONFIGURATOR

The DALI Driver Configurator tool allows you to set LED module parameters for iC LED drivers to ensure proper operation during colour and light intensity control.

The tool can also be used to configure other LED driver parameters like output current.



EDUCATION



OFFICE



HEALTHCARE



DALI LED Driver for Tunable White

LL35/2-E-DA-iC – 35 W

- Two independent SELV rated output channels
- DALI device type 8 software for tunable white
- 1 % - 100 % stepless dimming range per channel
- Switch-Control for intensity and colour control
- Helvar DALI Driver Configurator for setting the parameters



Control	DALI, Tunable White
Max output power	35 W
Product category	Adjustable I-OUT
Output current	350 (default) - 700 mA
Output protection	SELV <120, double isolated, double insulated
Luminaire class	Class I, Class II
Type	Linear, Indoor



More technical details via QR code or at:
helvar.com/products/LL35_2-E-DA-IC

DALI LED Driver for Tunable White

LL60/2-E-DA-iC – 60 W

- Two independent SELV rated output channels
- DALI device type 8 software for tunable white
- 1 % - 100 % stepless dimming range per channel
- Switch-Control for intensity and colour control
- Helvar DALI Driver Configurator for setting the parameters



Control	DALI, Tunable White
Max output power	60 W
Product category	Adjustable I-OUT
Output current	350 (default) - 700 mA
Output protection	SELV <120, double isolated, double insulated
Luminaire class	Class I, Class II
Type	Linear, Indoor



More technical details via QR code or at:
helvar.com/products/LL60_2-E-DA-IC

DALI LED driver with preset scenes for Tunable White

LL60/2-E-DA Dynamic - 60 W

- 4 preset Tunable White scenes simulating different weather conditions, Dynamic scene as default
- Easy solution for Tunable White control in new build
- No driver or module configuration needed
- Out-of-box dynamic operation without DALI network
- 3 % - 100 % dimming range per scene
- SELV rated output channels
- High efficiency, 0.90



More technical details via QR code or at:
helvar.com/products/select-the-weather

SELV 60 V AND 120 V DRIVERS

Helvar has a range of SELV 60 V and 120 V rated drivers for flexible luminaire design.

SELV (Safety Extra Low Voltage) rating ensures that the output voltage remains below the defined voltage value at any time, allowing for a more open and flexible luminaire design.

Helvar's SELV < 60 V drivers are designed to work within luminaires where the modules cannot be protected and isolated, but are open for touching. The touchable part of the luminaires can be left unprotected as long as the driver output and the voltage over the modules will not exceed 60 V. SELV < 120 V products can be used in luminaires where the modules need part protection due to the higher voltage.

The maximum power of the drivers varies from 6 W to 70 W, and the products are available both with constant current and dimmable current options. Three products in the range have two independent SELV rated output channels.



Constant Current LED driver

LL6-U-CC – 1x6 W

- Universal mains supply
- Accepts DC on mains input
- Protected up to 4 kV power network fast transient



Control	ON/OFF
Max output power	6 W
Product category	Selectable I-OUT
Output current	350 or 700 mA
Output protection	SELV <60, double isolated, double insulated
Luminaire class	Class I, Class II, Class III
Type	Linear, Indoor



More technical details via QR code or at:
helvar.com/products/LL6-U-CC

Constant Current LED driver

LL1x50-E-CC-700-1050 - 1x50 W

- Parallel connected output terminals for parallel LED connection
- Overload, open & short circuit protection



Control	ON/OFF
Max output power	50.4 W
Product category	Adjustable I-OUT
Output current	700 (default) - 1050 mA
Output protection	SELV <60, double isolated, double insulated
Luminaire class	Class I, Class II
Type	Linear, Indoor



More technical details via QR code or at:
helvar.com/products/LL1x50-E-CC-700-1050

Constant Current LED driver

LC1x50-E-CC-700-1050- 1x50 W

- Adjustable constant current output: 700 (default) to 1050 mA
- Parallel connected output terminals for parallel LED connection
- SELV < 60 V output protection
- Overload, open & short circuit protection



Control	ON/OFF
Max output power	50.4 W
Product category	Adjustable I-OUT
Output current	700 mA - 1050 mA
Output protection	SELV <60, double isolated, double insulated
Luminaire class	Class I, II, III
Type	Compact, indoor



More technical details via QR code or at:
helvar.com/products/LC1x50-E-CC-700-1050

Dimmable DALI LED driver

LC1x50-E-DA - 1x50 W

- DALI control input 1 % - 100 % dimming range (DALI revision 2.0)
- Hybrid dimming technique for high quality light
- Overload, Open & short circuit protection
- Suitable for emergency lighting purposes
- Helvar DALI Driver Configurator support



Control	DALI
Max output power	50.4 W
Product category	Adjustable I-OUT
Output current	1050 (default) - 1400 mA
Output protection	SELV <60, double isolated, double insulated
Luminaire class	Class I, Class II, Class III
Type	Compact, Indoor



More technical details via QR code or at:
helvar.com/products/LC1x50-E-DA

Constant Current LED driver

LC1x50-E-CC - 1x50 W

- Overload, open & short circuit protection
- Accept DC mains in case of central emergency battery
- High efficiency 0.90
- Optional strain relief for independent use (LC1x70-SR)



Control	ON/OFF
Max output power	50 W
Product category	Adjustable I-OUT
Output current	1050 - 1400 mA
Output protection	SELV <60, double isolated, double insulated
Luminaire class	Class I, Class II, Class III
Type	Compact, Indoor



More technical details via QR code or at:
helvar.com/products/LC1x50-E-CC

Constant Current LED driver

LL2x25-E-CC – 2x25 W

- Two SELV rated output channels
- Overload, open & short circuit protection
- Accept DC mains in case of central emergency battery



Control	ON/OFF
Max output power	25+25 W
Product category	Adjustable I-OUT
Output current	350 (default) - 700 ma
Output protection	SELV <60, double isolated, double insulated
Luminaire class	Class I, Class II
Type	Linear, Indoor



More technical details via QR code or at:
helvar.com/products/LL2x25-E-CC

Constant Current LED driver

LL1x50-E-CC – 1x50 W

- Parallel output connection
- Overload, open & short circuit protection
- Accept DC mains in case of central emergency battery
- High efficiency 0.90



Control	ON/OFF
Max output power	50 W
Product category	Adjustable I-OUT
Output current	1050 (default) - 1400 mA
Output protection	SELV <60, double isolated, double insulated
Luminaire class	Class I, Class II
Type	Linear, Indoor



More technical details via QR code or at:
helvar.com/products/LL1x50-E-CC

Dimmable DALI LED driver

LL1x20-E-DA – 1x20 W

Optional version on request: added lacquer coating provides improved robustness in challenging climate conditions (humidity, temperature).

- DALI control input, 1 %-100 % dimming range
- Protected up to 4 kV power network fast transients
- High efficiency, 0.88



Control	DALI
Max output power	20 W
Product category	Selectable I-OUT
Output current	350, 500, or 700 mA
Output protection	SELV <120, double isolated, double insulated
Luminaire class	Class I, Class II, Class III
Type	Linear, Indoor, Coated



More technical details via QR code or at:
helvar.com/products/LL1x20-E-DA

Constant Current LED driver

LL1x20-E-CC – 1x20 W

Optional version on request: added lacquer coating provides improved robustness in challenging climate conditions (humidity, temperature).

- Protected up to 4 kV power network fast transients
- High efficiency, 0.88
- Linear enclosure with strain relief for independent use



Control	ON/OFF
Max output power	20 W
Product category	Selectable I-OUT
Output current	350, 500, or 700 mA
Output protection	SELV <120, double isolated, double insulated
Luminaire class	Class I, Class II, Class III
Type	Linear, Indoor, Coated



More technical details via QR code or at:
helvar.com/products/LL1x20-E-CC

Constant Current LED driver

LC1x30-E-CC – 1x30 W

Optional version on request: added lacquer coating provides improved robustness in challenging climate conditions (humidity, temperature).

- High efficiency (>0.86)
- Reliable lifetime (50 000 h)
- Accepts DC on mains input
- Protected up to 4 kV power network fast transient
- Click-on strain relief



Control	ON/OFF
Max output power	30 W
Product category	Selectable I-OUT
Output current	350, 500, or 700 mA
Output protection	SELV <120, double isolated, double insulated
Luminaire class	Class I, Class II, Class III
Type	Compact, Indoor, Coated



More technical details via QR code or at:
helvar.com/products/LC1x30-E-CC

Dimmable 1-10 V LED driver

LC1x30-E-AN – 1x30 W

- Smooth and compatible 1-10V dimming 1-100%
- High efficiency (>0.86)
- Reliable lifetime (50.000h)
- Accepts DC on mains input
- Protected up to 4 kV power network fast transient
- Click-on strain relief



Control	1-10 V
Max output power	30 W
Product category	Selectable I-OUT
Output current	350, 500, or 700 mA
Output protection	SELV <120, double isolated, double insulated
Luminaire class	Class I, Class II, Class III
Type	Compact, Indoor, Coated



More technical details via QR code or at:
helvar.com/products/LC1x30-E-AN

Dimmable DALI LED driver

LC1x30-E-DA – 1x30 W

Optional version on request: added lacquer coating provides improved robustness in challenging climate conditions (humidity, temperature).

- Smooth and DALI compatible dimming 1 % –100 %
- High efficiency (>0.86)
- Reliable lifetime (50 000 h)
- Very low stand-by power (0.3 W)
- Protected up to 4 kV power network fast transient
- Click-on strain relief



Control	DALI
Max output power	30 W
Product category	Selectable I-OUT
Output current	350, 500, or 700 mA
Output protection	SELV <120, double isolated, double insulated
Luminaire class	Class I, Class II, Class III
Type	Compact, Indoor, Coated



More technical details via QR code or at:
helvar.com/products/LC1x30-E-DA

Dimmable DALI LED driver

LL1x40-E-DA-350-700 – 1x40 W

- DALI control input 1 % - 100 % dimming range
- Low standby power 0.3 W
- Protected up to 4 kV power network fast transients
- High efficiency, 0.89
- Optional click-on strain relief for independent use (LL1x40-SR)



Control	DALI
Max output power	40 W
Product category	Adjustable I-OUT
Output current	350 (default) - 700 mA
Output protection	SELV <120, double isolated, double insulated
Luminaire class	Class I, Class II, Class III
Type	Linear, Indoor



More technical details via QR code or at:
helvar.com/products/LL1x40-E-DA-350-700

Dimmable DALI LED driver

LL1x40-E-DA-700-1050 – 1x40 W

- DALI control input 1 % - 100 % dimming range
- Low standby power 0.3 W
- Protected up to 4 kV power network fast transients
- High efficiency, 0.89
- Optional strain relief for independent use (LL1x40-SR)



More technical details via QR code or at:
helvar.com/products/LL1x40-E-DA-700-1050

Control	DALI
Max output power	40 W
Product category	Adjustable I-OUT
Output current	700 (default) - 1050 mA
Output protection	SELV <120, double isolated, double insulated
Luminaire class	Class I, Class II, Class III
Type	Linear, Indoor

Constant Current LED driver

LL1x40-E-CC – 1x40 W

- Smooth and compatible 1-10V dimming 1-100%
- High efficiency (>0.86)
- Reliable lifetime (50.000h)
- Accepts DC on mains input
- Protected up to 4 kV power network fast transient
- Click-on strain relief



More technical details via QR code or at:
helvar.com/products/LL1x40-E-CC

Control	ON/OFF
Max output power	40 W
Product category	Adjustable I-OUT
Output current	350 (default) - 1050 mA
Output protection	SELV <120, double isolated, double insulated
Luminaire class	Class I, Class II, Class III
Type	Linear, Indoor

Dimmable DALI LED driver

LC1x70-E-DA – 1x70 W

Optional version on request: added lacquer coating provides improved robustness in challenging climate conditions (humidity, temperature).

- DALI control input 1 % - 100 % dimming range
- Low standby power <0.5 W
- Protected up to 4 kV power network fast transients
- Overload, open & short circuit protection
- Auxiliary 12 V output for active cooling
- Optional strain relief for independent use (LC1x70-SR)



Control	DALI
Max output power	70 W
Product category	Adjustable I-OUT
Output current	700 - 1400 mA
Output protection	SELV <120, double isolated, double insulated
Luminaire class	Class I, Class II, Class III
Type	Compact, Indoor, Coated



More technical details via QR code or at:
helvar.com/products/LC1x70-E-DA

Constant Current LED driver

LC1x70-E-CC – 70 W

Optional version on request: added lacquer coating provides improved robustness in challenging climate conditions (humidity, temperature).

- Protected up to 4 kV power network fast transients
- High efficiency, 0.91
- Overload, open & short circuit protection
- Auxiliary 12 V output for cooling fan
- Optional strain relief for independent use (LC1x70-SR)



Control	ON/OFF
Max output power	70 W
Product category	Adjustable I-OUT
Output current	700 - 1400 mA
Output protection	SELV <120, double isolated, double insulated
Luminaire class	Class I, Class II, Class III
Type	Compact, Indoor, Coated



More technical details via QR code or at:
helvar.com/products/LC1x70-E-CC

Dimmable DALI LED driver

LL2x35-E-DA – 2x35 W

- Two independent SELV rated output channels (default two DALI addresses)
- DALI control input 1 % - 100 % dimming range
- Low standby power, < 0.5 W
- Protected up to 4kV power network fast transients
- Overload, open & short circuit protection



Control	DALI
Max output power	35+35 W
Product category	Adjustable I-OUT
Output current	350 (default) - 700 mA
Output protection	SELV <120, double isolated, double insulated
Luminaire class	Class I, Class II
Type	Linear, Indoor



More technical details via QR code or at:
helvar.com/products/LL2x35-E-DA

Constant Current LED driver

LL2x35-E-CC – 2x35 W

- Two independent SELV rated output channels
- Protected up to 4 kV power network fast transients
- High efficiency ≥ 0.91
- Overload open & short circuit protection



Control	ON/OFF
Max output power	35+35 W
Product category	Adjustable I-OUT
Output current	350 (default) - 700 mA
Output protection	SELV <120, double isolated, double insulated
Luminaire class	Class I, Class II
Type	Linear, Indoor



More technical details via QR code or at:
helvar.com/products/LL2x35-E-CC

SMALL SIZE BASIC LED DRIVERS

Helvar has released small size basic LED drivers in our single output current range.

Our single output current range now includes two new small size basic LED drivers, LL1x30-E-CC-350 and LL1x30-E-CC-700. All drivers in the category are SELV rated.



Constant Current LED driver LL1x12-E-CC-350 – 1x12 W

- Short circuit protection
- Overvoltage protection
- Over temperature protection
- Linear enclosure with strain relief for independent use



Control	ON/OFF
Max output power	12 W
Product category	Single I-OUT
Output current	350 mA
Output protection	SELV <60, double isolated, double insulated
Luminaire class	Class II
Type	Linear, Indoor



More technical details via QR code or at:
helvar.com/products/LL1x12-E-CC-350

Constant Current LED driver

LL1x12-E-CC-700 – 1x12 W

- Short circuit protection
- Overvoltage protection
- Over temperature protection
- Linear enclosure with strain relief for independent use



More technical details via QR code or at:
helvar.com/products/LL1x12-E-CC-700

Control	ON/OFF
Max output power	12 W
Product category	Single I-OUT
Output current	700 mA
Output protection	SELV <60, double isolated, double insulated
Luminaire class	Class I, Class II, Class III
Type	Linear, Indoor

Constant Current LED driver

LL1x15-E-CC-500 – 1x15 W

- Short circuit protection
- Overvoltage protection
- Over temperature protection
- Linear enclosure with strain relief for independent use



More technical details via QR code or at:
helvar.com/products/LL1x15-E-CC-500

Control	ON/OFF
Max output power	15 W
Product category	Single I-OUT
Output current	500 mA
Output protection	SELV <60, double isolated, double insulated
Luminaire class	Class I, Class II, Class III
Type	Linear, Indoor

Constant Current LED driver

LL1x20-E-CC-350 – 1x20 W

- Open and short circuit protection
- Overvoltage protection
- Over temperature protection
- Linear enclosure with strain relief for independent use



Control	ON/OFF
Max output power	20 W
Product category	Single I-OUT
Output current	350 mA
Output protection	SELV <60, double isolated, double insulated
Luminaire class	Class I, Class II, Class III
Type	Linear, Indoor



More technical details via QR code or at:
helvar.com/products/LL1x20-E-CC-350

Constant Current LED driver

LL1x20-E-CC-700 – 1x20 W

- Open and short circuit protection
- Overvoltage protection
- Over temperature protection
- Linear enclosure with strain relief for independent use



Control	ON/OFF
Max output power	20 W
Product category	Single I-OUT
Output current	700 mA
Output protection	SELV <60, double isolated, double insulated
Luminaire class	Class I, Class II, Class III
Type	Linear, Indoor



More technical details via QR code or at:
helvar.com/products/LL1x20-E-CC-700

Constant Current LED driver

LL1x30-E-CC-700 - 1x30 W

- High power factor 0.95
- Open and short circuit protection
- Linear enclosure with strain relief for independent use



More technical details via QR code or at:
helvar.com/products/LL1x30-E-CC-700

Control	ON/OFF
Max output power	30 W
Product category	Single I-OUT
Output current	700 mA
Output protection	SELV <60, double isolated, double insulated
Luminaire class	Class I, Class II, Class III
Type	Linear, Indoor

Constant Current LED driver

LL1x30-E-CC-350 - 1x30 W

- High power factor 0.95
- Open and short circuit protection
- Linear enclosure with strain relief for independent use



More technical details via QR code or at:
helvar.com/products/LL1x30-E-CC-350

Control	ON / OFF
Max output power	30 W
Product category	Single I-OUT
Output current	350 mA
Output protection	SELV <120V, double isolated, double insulated
Luminaire class	Class I, Class II, Class III
Type	Linear, Indoor

HIGHLY EFFICIENT LINEAR LED DRIVERS

Helvar's efficient drivers are designed for low output current providing high efficiency.

In combination with Helvar's first class design technology, the drivers can provide greater efficiency of 0.93-0.95. The optimised design and component choice contribute to an outstanding lifetime of 60.000 h for the drivers.

Current output of these LED drivers is selectable with a resistor as follows:

LED Driver	Current output
LL1x150-E-CC	350-700 mA
LL1x110-E-DA	350-700 mA
LL1x110-E-CC-200-350	200- 350 mA
LL1x110-E-CC-350	350 mA
LL1x110-E-CC-350-700	350-700 mA
LL1x10-42-E-CC	120-350 mA
LL1x10-42-E-DA	120-350 mA
LL1x23-80-E-CC	150-350 mA
LL1x80-E-CC-350-700	350-700 mA



Dimmable DALI LED driver LL1x10-42-E-DA – 1x10-42 W

- Dali control input 1 %-100 % dimming range (DALI revision 2.0)
- Hybrid dimming technique for high quality light
- Overload, Open & short circuit protection
- High efficiency 0.93
- Helvar DALI Driver Configurator support



Control	DALI
Max output power	42 W
Product category	Adjustable I-OUT
Output current	120 (default) - 350 mA
Output protection	Non-isolated, basic insulated
Luminaire class	Class I
Type	Linear, Indoor



More technical details via QR code or at:
helvar.com/products/LL1x10-42-E-DA

Constant Current LED driver

LL1x10-42-E-CC – 1x10-42 W

- Open & short circuit protection
- High efficiency 0.94
- Protected up to 4 kV network fast transients
- 60 000 h lifetime



More technical details via QR code or at:
helvar.com/products/LL1x10-42-E-CC

Control	ON/OFF
Max output power	42 W
Product category	Adjustable I-OUT
Output current	120 (default) - 350 mA
Output protection	Non-isolated, basic insulated
Luminaire class	Class I
Type	Linear, Indoor

Constant Current LED driver

LL1x80-E-CC-350-700 – 1x80 W

- Open & short circuit protection
- Protected up to 4 kV power network fast transients
- High efficiency 0.94
- 60 000 h lifetime



More technical details via QR code or at:
helvar.com/products/LL1x80-E-CC-350-700

Control	ON/OFF
Max output power	80 W
Product category	Adjustable I-OUT
Output current	350 (default) - 700 mA
Output protection	Non-isolated, basic insulated
Luminaire class	Class I
Type	Linear, Indoor

Constant Current LED driver

LL1x23-80-E-CC – 1x23-80 W

- Open & short circuit protection
- Protected up to 4 kV power network fast transients
- High efficiency 0.95
- 60 000 h lifetime



More technical details via QR code or at:
helvar.com/products/LL1x23-80-E-CC

Control	ON/OFF
Max output power	80 W
Product category	Adjustable I-OUT
Output current	150 (default) - 350 mA
Output protection	non-isolated, basic insulated
Luminaire class	Class I
Type	Linear, Indoor

Constant Current LED driver

LL1x110-E-CC-350 - 1x110 W

- Open & short circuit protection
- Protected up to 4 kV power network fast transients
- High efficiency 0.95



More technical details via QR code or at:
helvar.com/products/LL1x110-E-CC-350

Control	ON/OFF
Max output power	110 W
Product category	Single I-OUT
Output current	350 mA
Output protection	Non-isolated, basic insulated
Luminaire class	Class I
Type	Linear, Indoor

Constant Current LED driver

LL1x110-E-CC-200-350 - 1x110 W

- Open & short circuit protection
- Protected up to 4 kV power network fast transients
- High efficiency 0.95



More technical details via QR code or at:
helvar.com/products/LL1x110-E-CC-200-350

Control	ON/OFF
Max output power	110 W
Product category	Adjustable I-OUT
Output current	200 (default) - 350 mA
Output protection	Non-isolated, basic insulated
Luminaire class	Class I
Type	Linear, Indoor

Constant Current LED driver

LL1x110-E-CC-350-700 - 1x110 W

- Open & short circuit protection
- Protected up to 4 kV power network fast transients
- High efficiency 0.95



More technical details via QR code or at:
helvar.com/products/LL1x110-E-CC-350-700

Control	ON/OFF
Max output power	110 W
Product category	Adjustable I-OUT
Output current	350 (default) - 700 mA
Output protection	Non-isolated, basic insulated
Luminaire class	Class I
Type	Linear, Indoor

DALI dimmable LED driver

LL1x110-E-DA

- Dali control input 1 %-100 % dimming range (DALI revision 2.0)
- Hybrid dimming technique for high quality light
- Overload, Open & short circuit protection
- Adjustable constant current output: 350 (default) to 700 mA



More technical details via QR code or at:
helvar.com/products/LL1x110-E-DA

Control	DALI
Max output power	110 W
Product category	Adjustable I-OUT
Output current	350 mA - 700 mA
Output protection	Non-isolated, basic insulated
Luminaire class	Class I
Type	Linear, Indoor

Constant Current LED driver

LL1x150-E-CC

- Maximum 150 W load
- High efficiency 0.95
- Suitable for Class I luminaires
- Suitable for emergency lighting purposes



More technical details via QR code or at:
helvar.com/products/LL1x150-E-CC

Control	ON/OFF
Max output power	150 W
Product category	Adjustable I-OUT
Output current	350 mA - 700 mA
Output protection	Non-isolated, basic insulated
Luminaire class	Class I
Type	Linear, Indoor

OTHER LINEAR CONSTANT CURRENT LED DRIVERS



Dimmable DALI LED driver

LL1x70-E-DA – 1x70 W

- DALI control input 1-100% dimming range
- Low standby power 0,4 W
- Protected up to 4 kV power network fast transients
- Overload, short & open circuit protection
- High efficiency > 0.91

Control	DALI
Max output power	70 W
Product category	Adjustable I-OUT
Output current	350 (default) - 700 mA
Output protection	Non-isolated, basic insulated
Luminaire class	Class I
Type	Linear, Indoor



More technical details via QR code or at:
helvar.com/products/LL1x70-E-DA

Constant Current LED driver

LL1x70-E-CC – 1x70 W

- Accept DC mains in case of central emergency battery.
- Overload, short & open circuit protection
- High efficiency > 0.91
- Protected up to 4 kV power network fast transients

Control	ON/OFF
Max output power	70 W
Product category	Adjustable I-OUT
Output current	350 (default) - 700 mA
Output protection	Non-isolated, basic insulated
Luminaire class	Class I
Type	Linear, Indoor



More technical details via QR code or at:
helvar.com/products/LL1x70-E-CC

Constant current LED driver

LL1x42-E-CC-350 - 1x42 W

- Load output is double insulated from the mains
- Parallel output connection
- Fixed low ripple constant current output



Control	ON/OFF
Max output power	42 W
Product category	Single I-OUT
Output current	350 mA
Output protection	Double isolated, basic insulated
Luminaire class	Class I
Type	Linear, Indoor



More technical details via QR code or at:
helvar.com/products/LL1x42-E-CC-350

Constant Current LED driver

LL1x38-CC - 1x38 W

- Load output is basic (galvanic) insulated from the mains
- Protected up to 4 kV power network fast transients



Control	ON/OFF
Max output power	38.5 W
Product category	Selectable I-OUT
Output current	300 mA or 350 mA
Output protection	Basic insulated
Luminaire class	Class I
Type	Linear, Indoor



More technical details via QR code or at:
helvar.com/products/LL1x38-CC

DIMMABLE CONSTANT VOLTAGE SOLUTION FOR DECORATIVE LIGHTING

As part of the DALI product portfolio, Helvar offers Constant Voltage Dimming Solution for indirect and/or decorative lighting.

The solution can be used with constant voltage LED strips, which brings flexibility to lighting design. The LED strips can be folded, and the length of the strip can be chosen suitable for the environment. Several LED strips can be installed in the solution in parallel with up to the maximum current of 5000 mA. The products are a small linear design enabling easy installation.

The extremely wide DALI dimming range (0.1%-100%) combined with higher PWM frequency (1 kHz) to reduce flickering light, offer superior dimming quality of the solution.

The products in this solution have system standby power amongst the lowest on the market, as well as the high voltage (24 V) power supply that helps greatly to reduce power loss over the LED strips, making the solution very energy efficient.

The solution has added safety, as the DALI input of LL1xCV-DA products are mains rated and double isolated from the power input and load. The solution is suitable for Class I, II and SELV luminaires.

The products you need for the solution:

- Constant Voltage power supply, such as OL1x30-E-CV24, OL1x75-E-CV24, LL1x30-E-CV24, and LL1x75-E-CV24
- DALI Extension Unit for dimming the Constant Voltage, such as LL1-CV-DA
- One or several constant voltage LED strips



Dimmable constant voltage DALI LED driver extension

LL1-CV-DA – 12-24 V

- DALI extension unit for constant voltage LED driver
- DALI control input, 0.1 %-100 % dimming range
- 1 kHz PWM dimming frequency
- Stand-by power < 0.1 W
- Duplicate terminals for parallel connection



Control	DALI
Max output power	120 W
Product category	Constant Voltage
Output current	Max 5 A
Output protection	SELV <60, double isolated, double insulated
Luminaire class	Class I, Class II, Class III
Type	Linear, Indoor



More technical details via QR code or at:
helvar.com/products/LL1-CV-DA

Constant Voltage LED driver

OL1x30-E-CV24 – 1x30 W

- Open & short circuit protection
- 24 V Constant voltage output
- Suitable for Class I, Class II and SELV luminaires
- Suitable for outdoor use IP67



Control	ON/OFF
Max output power	30 W
Product category	Constant Voltage
Output current	Max 1,25 A
Output protection	SELV <60, double isolated, double insulated
Luminaire class	Class I, Class II, Class III
Type	Linear, Outdoor



More technical details via QR code or at:
helvar.com/products/OL1x30-E-CV24

Constant Voltage LED driver

OL1x75-E-CV24 – 1x75W

- Open & short circuit protection
- Suitable for Class I, Class II and SELV luminaires
- Suitable for outdoor use IP67
- Double insulated enclosure



More technical details via QR code or at:
helvar.com/products/OL1x75-E-CV24

Control	ON/OFF
Max output power	75 W
Product category	Constant Voltage
Output current	Max 3,125 A
Output protection	SELV <60, double isolated, double insulated
Luminaire class	Class I, Class II, Class III
Type	Linear, Outdoor

Constant Voltage LED driver

LL1x30-E-CV24 - 1x30 W

- Open & short circuit protection
- Over voltage protection
- 24 V Constant voltage output
- High efficiency 0.8



More technical details via QR code or at:
helvar.com/products/L1x30-E-CV24

Control	ON/OFF
Max output power	30 W
Product category	Constant voltage
Output current	Max 1.25 A
Output protection	SELV <60, double isolated, double insulated
Luminaire class	Class I, Class II
Type	Linear, Indoor

Constant Voltage LED driver

LL1x75-E-CV24 - 1x75W

- Open & short circuit protection
- Over voltage protection
- 24 V Constant voltage output
- High efficiency 0.88



Control	ON/OFF
Max output power	75 W
Product category	Constant Voltage
Output current	Max 0.40 A
Output protection	SELV <60, double isolated, double insulated
Luminaire class	Class I, Class II
Type	Linear, Indoor



More technical details via QR code or at:
helvar.com/products/LL1x75-E-CV24



OUTDOOR DRIVERS



Helvar's range of IP65 rated drivers offer flexibility for outdoor luminaire design. Our drivers have maximum power from 60 W to 100 W and lifetime of 50.000 hours. The output current

can be selected between 350 mA (60 W), 700 mA (60 W and 100 W), 1050 mA (100 W), 1400 mA (60 W and 100 W), and 2100 mA (100 W).

Constant Current LED driver

OL1x60-E-CC – 1x60 W

- High efficiency (>0.90)
- Lifetime (50.000h)
- IP65 outdoor use
- Protected up to 4 kV power network fast transient



Control	ON/OFF
Max output power	60 W
Product category	Selectable I-OUT
Output current	350, 700, or 1400 mA
Output protection	SELV <120, double isolated, double insulated
Luminaire class	Class I, Class II, Class III
Type	Linear, Outdoor



More technical details via QR code or at:
helvar.com/products/OL1x60-E-CC

Constant Current LED driver

OL1x100-E-CC2 – 1x100 W

- High efficiency (>0.91)
- Lifetime (50.000h)
- IP65 outdoor use
- Protected up to 4 kV power network fast transient



Control	ON/OFF
Max output power	100 W
Product category	Selectable I-OUT
Output current	1400 or 2100 mA
Output protection	Double isolated, double insulated
Luminaire class	Class I, Class II
Type	Linear, Outdoor



More technical details via QR code or at:
helvar.com/products/OL1x100-E-CC2

Constant Current LED driver

OL1x100-E-CC1 – 1x100 W

- High efficiency (>0.91)
- Lifetime (50.000h)
- IP65 outdoor use
- Protected up to 4 kV power network fast transient



Control	ON/OFF
Max output power	100 W
Product category	Selectable I-OUT
Output current	700 or 1050 mA
Output protection	Double isolated, double insulated
Luminaire class	Class I, Class II
Type	Linear, Outdoor



More technical details via QR code or at:
helvar.com/products/OL1x100-E-CC

COATED LED DRIVERS FOR OUTDOOR LUMINAIRES

Coated drivers by Helvar offer enhanced operation in outdoor luminaires.

Helvar’s popular LED drivers are now available as an optional version with an added lacquer coating which provides robustness in challenging climate conditions.

A very thin layer of lacquer coated onto the circuit board provides added protection against humidity, in case accidental condensation appears in the luminaire. These coated drivers are suitable for extremely cold environments due to the extended temperature range starting from -40 °C. Performance and other features as with respective non-coated drivers.

There are drivers available for both switching and controllable use:

Product	Max Power	Product Range
LL1x20-E-DA Coated	20 W	DALI Controllable
LL1x20-E-CC Coated	20 W	Constant Current
LC1x30-E-DA Coated	30 W	DALI Controllable
LC1x30-E-CC Coated	30 W	Constant Current
LC1x30E-AN Coated	30 W	Selectable I-OUT
LC1x70-E-DA Coated	70 W	DALI Controllable
LC1x70-E-CC Coated	70 W	Constant Current
LC1x50-E-CC Coated	50 W	Constant Current
LC1x50-E-DA Coated	50.4 W	Adjustable I-OUT
nightDim drivers	various	nightDim



ACCESSORIES

Click-on strain relief

LC1x30-SR

- The LC1x30-SR strain relief is compatible with the LC1x30 range
- Fully adjustable cable tightening
- Robust and easy construction



Click-on strain relief

LC1x70-SR

- Easy to assemble click-on strain relief for LL1x70 series
- Allows independent driver usage
- Screws for internal cable clamps included
- Cable clamps allowing different cable thicknesses



Click-on strain relief

LL1x40-SR

- Easy to assemble click-on strain relief for LL1x40 series
- Allows independent driver usage
- Screws for internal cable clamps included
- Cable clamps allowing different cable thicknesses
- Each pack includes 2 x strain reliefs



Diffusers & Holders

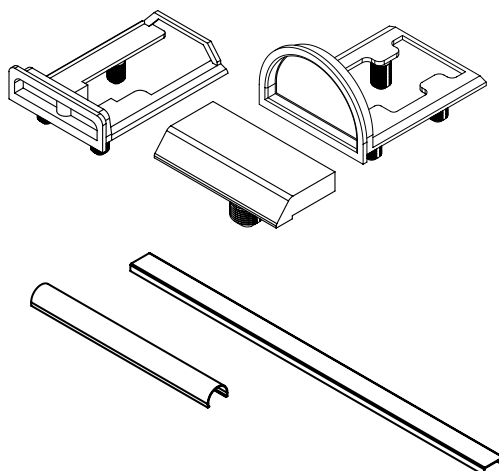
During autumn 2015 Helvar will release new accessory parts for LED luminaires.

Holders for modules and diffusers:

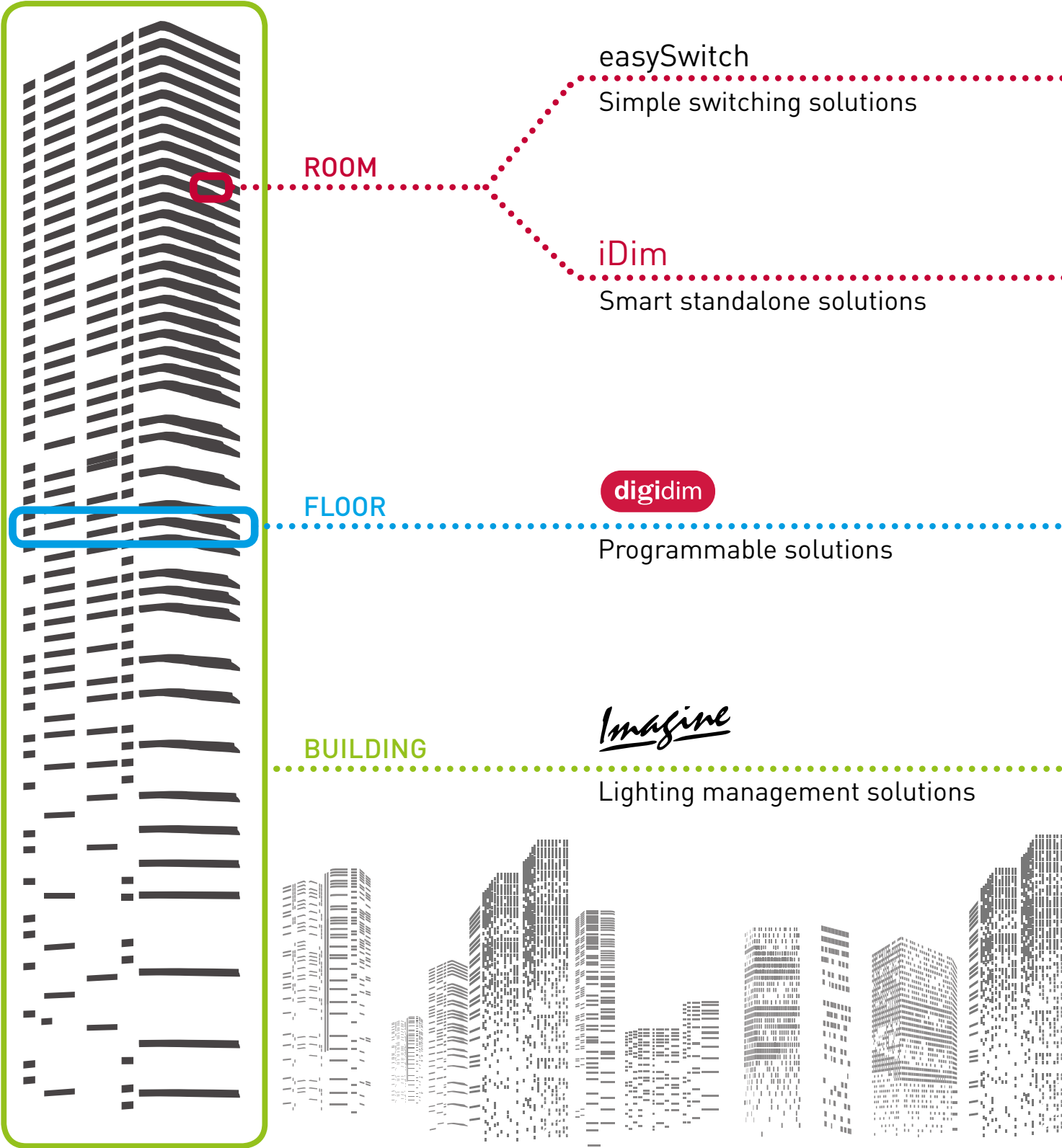
Helvar's module holders are multipurpose accessories, not only with the capability to connect modules to each other, but as well to use the holders as wire clips and to mount diffusers over the modules

Diffusers:

The new diffusers are developed for smoothing and shaping of the light. When mounted with Helvar's module holders it is possible to cover non-isolated modules so that they cannot be touched without tools.



LIGHTING CONTROL SOLUTIONS



easySwitch

- Simple on/off
- Standalone
- Mains switching
- Easy to install and set-up
- Low cost with fast payback

iDim

- Various smart and simple control solutions
- Either ceiling or luminaire mounted
- Easy installation with minimal or no configuration on site
- High level of automation and energy saving
- Smart solutions for refurbishment

Digidim

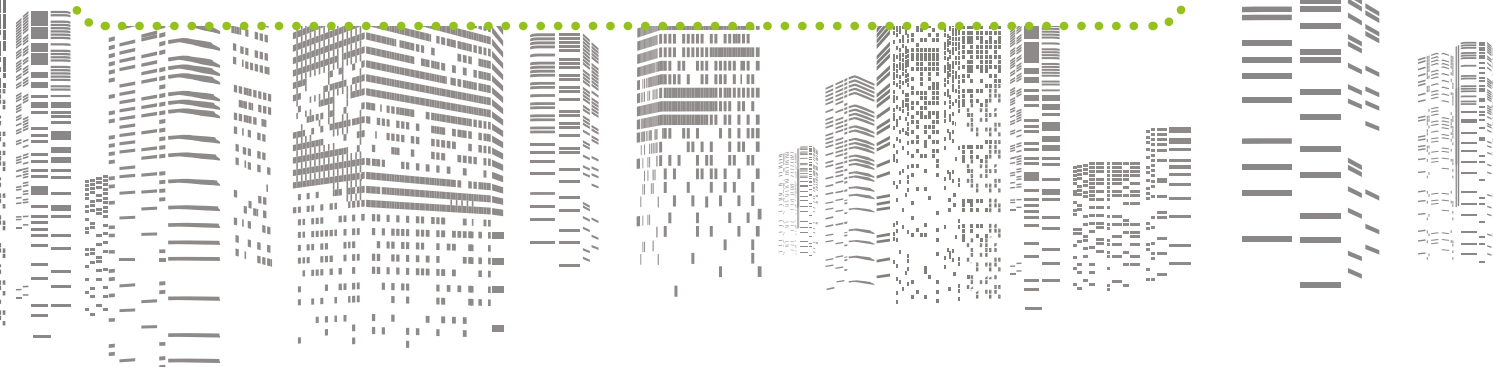
- Smart programmable area control
- Scalable from small to large rooms or areas
- Provides energy efficiency whilst maximising user wellbeing
- Freedom for user to control via a wide range of user control panels
- Integration to audiovisual system

Imagine

- Maximal freedom in lighting design
- Flexible and scalable, from single room to large buildings or multi building campus
- Live energy monitoring and lighting control via various user interface options
- Possibility to create lighting scenes and transitions for automated control
- Simple but unique colour / colour temperature control
- Integration to other types of building automation systems

Helvar offers solutions from simple switching solutions and standalone solutions to building/several buildings wide networks. Helvar components can be used on all levels. Driver based smart standalone solutions (iDim) are introduced on next pages.

For larger lighting control solutions, please refer Helvar Lighting Control brochure.



iDim SELECT THE WEATHER

Select the Weather (STW) is a simple Human Centric Lighting solution with value added functionality. With this solution it is possible to simulate different scenes of the natural outdoor lighting environment by changing the colour temperature and intensity of the lighting. The solution is easy and quick to install without any configuration needed on site.







EASY SOLUTION FOR HUMAN CENTRIC LIGHTING

For a fully functioning solution, you need only Helvar Select the Weather panel

- Helvar Dynamic LED Drivers in the luminaires
- Helvar iDim Solo DALI power
- Helvar Ceiling Motion Detector (optional)

The solution is easy and quick to install without any configuration needed on the site.

More technical details via QR code or at:
helvar.com/products/select-the-weather

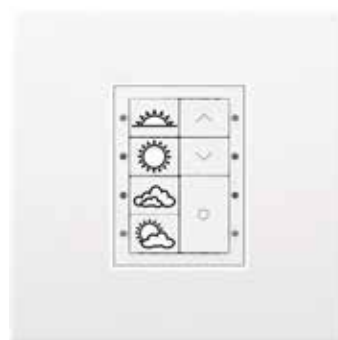
Icon	Effect	When to Use	Colour Temperature	Light Output
	Calm down	High stress period	Warm	80%
	Energise	Early morning	Cool	100%
	Concentrate	Thinking process & Presentations	Intermediate	50%
	Stay alert	Normal daily work	Changing naturally	90%

Select the Weather Panel

135 STW

The 135 STW 'Select-the-Weather' panels are a DALI-compatible range of user interfaces that allow control of the lighting system. Each module is fitted with indicator LEDs and an infrared receiver for remote operation.

The panel lets you select your desired illuminance and colour temperature scene from four preprogrammed scenes.



DALI LED driver with preset scenes for Tunable White

LL60/2-E-DA Dynamic - 60 W

- 4 preset Tunable White scenes simulating different weather conditions, Dynamic scene as default
- Easy solution for Tunable White control in new build
- No driver or module configuration needed
- Out-of-box dynamic operation without DALI network
- 3 % - 100 % dimming range per scene
- SELV rated output channels
- High efficiency, 0.90



iDim Solo

403 (used as DALI power supply)

- Compact interface module
- Easy and quick wiring
- DALI power supply, 96 mA (total)



Ceiling Motion Detector

311

- Compact, flush-mounted ceiling unit
- PIR motion detection
- Up to 7m diameter coverage area
- Small physical size



iDim ACTIVE+ SELF-LEARNING LIGHTING

Helvar's Active+ is an out-of-the-box standalone solution consisting of an LED driver and "our smallest sensor" yet built into the luminaire.



SIMPLE INSTALLATION:

Luminaire fitted with Active+ is as easy to install as a simple switched luminaire. No control wiring, programming or configuration is needed.

SELF-LEARNING:

Active+ uses 60-100 hours to learn about its environment - external daylight conditions, and other luminaires around it.

SMART ENERGY SAVINGS:

Compared to a simple switched luminaire, Active+ brings added features - presence detection, daylight harvesting and seamless and comfortable dimming.

ACTIVE+ LED DRIVER

The Active+ LED drivers (e.g. LL1x10-42 Active+) have an inbuilt smart learning functionality. With no need for programming, configuration or external control wiring, the LED driver is optimised for presence detection and daylight harvesting. The driver has an inbuilt power supply that provides power for the Active+ Sense.

ACTIVE+ SENSOR

The Active+ Sense combines motion and light sensing all packaged up in a very compact unit. The device is mounted inside the luminaire and is connected directly to the Active+ LED driver with no need for an additional power supply unit.

FITTING IN A LUMINAIRE

The Active+ driver and sensor are designed to fit flexibly into a luminaire, which then can be installed as easily as a basic switching luminaire, having no physical or electrical connection to any other external lighting components such as control panels, dimmers or common sensors. Luminaires

fitted with Active+ solution are ideal for refurbishment projects, as well as for new offices, corridors, open plan areas and storage areas.

OPTIONAL ACTIVE+ MOBILE APP

With an optional Active+ Mobile app, the end user can easily change the light levels of individual luminaires if the automatic setup needs fine-tuning.

More technical details via QR code or at:
helvar.com/products/active



Dimmable LED driver with Active+ functionality

LL1x10-42 Active+ - 1x10-42 W

- Fully automatic standalone setup with smart learning functionality
- Optimised presence detection, daylight harvesting and Constant Light Output (CLO) operation
- Inbuilt power supply for sensor use
- Overwriting option for sensor parameters
- Hybrid dimming technique for high quality light
- High efficiency 0.93



Control	Automatic Active+ algorithm
Max output power	42 W
Product category	Adjustable I-OUT
Output current	120 (default) - 350 mA
Output protection	Non-isolated
Luminaire class	Class I
Type	Linear, Indoor

Active+ Sense

T3020

- Directly fitted into the luminaire
- No need for additional wiring to luminaire
- Powered by Active+ driver
- Plugs directly into the Active+ driver
- Flexibility for luminaire installation
- Combines motion and light sensing
- Compact unit (32.4 mm x15.5 mm x 9.4 mm)



Mobile app for Active+

Active+ Mobile

The Active+ Mobile is an app for adjusting settings in the new Helvar Active+ solution. To use this app you must have an approved smart phone for the application running Android version 4.0 (or later) equipped with an LED flash (list of tested and approved phones can be found on the app store description), a luminaire fitted with an Active+ LED driver and the Active+ Sense.

Settings that can be adjusted are:

- Lights on and Power Save light levels
- Occupancy time-outs
- Fade times
- Transition time-outs
- Daylight dimming ranges
- Bright-out functionality



iDim NIGHTDIM

EASY NIGHT TIME SAVINGS

NightDim is an innovative and unique standalone solution for easy and affordable nightlight dimming for outdoor spaces which are not in regular use on midnight hours.

The nDim LED drivers have an enhanced protection against humidity, improving the suitability of the drivers for outdoor luminaire use.

EASY MIDNIGHT DIMMING

EASY SCENE SET

Changing scenes is done easily by a simple mains switch. No programming is needed in installation or maintenance phases.

PERFECT FOR REFURBISHMENT

The product uses your existing wiring for both scene setting and operation. No new wiring is needed.



Energy Efficient LED for nightDim

LL1x20-E-DA-nDim - 1x20 W

- Scene recall over the mains
- Perfect for refurbishment
- Constant Lumen Output (CLO) operation optional
- Protected up to 4 kV power network fast transients
- High efficiency, 0.88



Control	DALI, nightDim functionality
Max output power	20 W
Product category	nigtDim
Output current	350 mA / 500 mA / 700 mA
Type	Linear, Moisture protection by lacquer coating

Energy Efficient LED driver for nightDim

LC1x30-E-DA-nDim - 1x30 W

- Scene recall over the mains
- Perfect for refurbishment
- Constant Lumen Output (CLO) operation optional
- Low stand-by power 0.3 W
- Protected up to 4 kV power network fast transients
- High efficiency, 0.87



Control	DALI, nightDim functionality
Max output power	30 W
Product category	nigtDim
Output current	350 mA / 500 mA / 700 mA
Type	Compact, Moisture protection by lacquer coating

Energy Efficient LED driver for nightDim

LC1x70-E-DA-nDim - 1x70 W

- Scene recall over mains
- Perfect for refurbishment
- Constant Lumen Output (CLO) operation optional
- Protected up to 4 kV power network fast transients
- Overload, open & short circuit protection



Control	DALI, nightDim functionality
Max output power	70 W
Product category	nigtDim
Output current	700 mA (default) - 1400 mA
Type	Compact, Moisture protection by lacquer coating



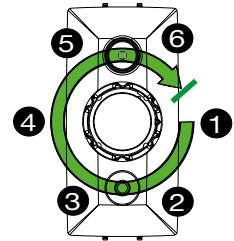
More technical details via QR code or at:
helvar.com/products/idim

iDim

IDIM BASIC

The luminaire based iDim concept provides 6 out-of-box application modes that are easy to select just by rotating the Mode Selector on the iDim Sense. The modes are designed to fulfil the needs for easy-to-use, energy saving lighting control. The basic functions are pre-programmed and are fully adjustable to meet all requirements.

- 1) Classroom
- 2) Single office
- 3) Open plan office
- 4) Corridor link
- 5) Corridor hold
- 6) Meeting room



Please refer iDim user guide for detailed description of the iDim modes.

iDim Sense (316)

- Compact DALI sensor for standalone use
- Works with all iDim ballasts and drivers
- Used with iDim Solo, provide 2-channel control
- PIR motion sensor, Constant Light with offset, & Infrared Receiver
- Simple rotating selector provides 6 pre-programmed modes
- Easy click-mounting from outside luminaire
- Clip-on PIR restrictor



Note: Not compatible with DIGIDIM Toolbox and Helvar 905/910/920 Router systems

iDim Solo (403)

- Compact and versatile interface module
- Can be used inside or outside the luminaire
- Easy and quick wiring for both alternatives; iDim standalone and networked lighting systems
- DALI power supply, 96 mA (total)
- 2 × switch control inputs and mains connection input
- 2 × DALI outputs




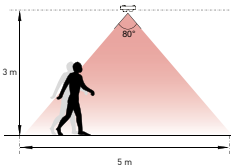
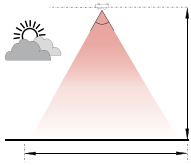

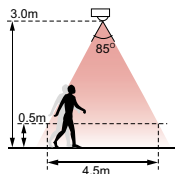
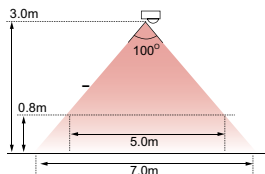

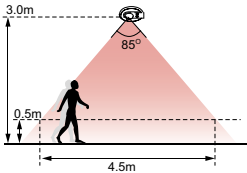
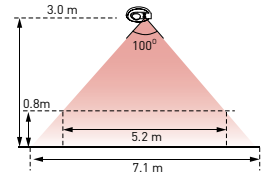

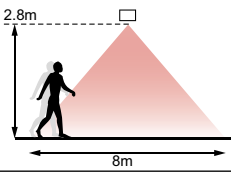
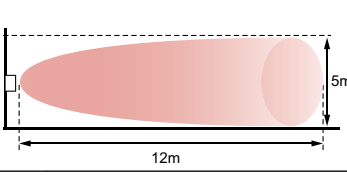

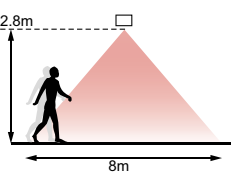
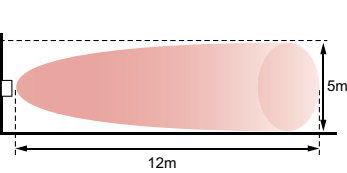

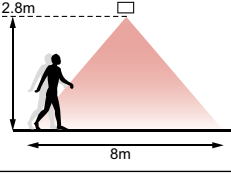
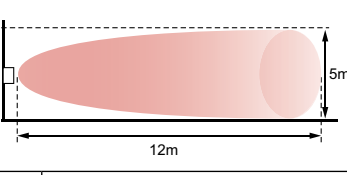

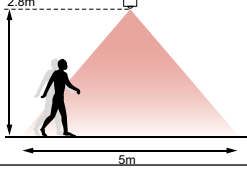

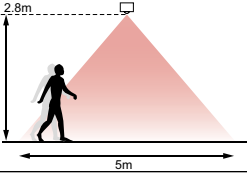

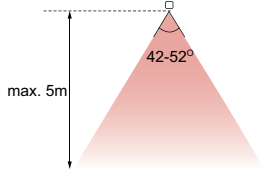
iDim Remote (304)

- For controlling or modifying the iDim applications
- Configuration of target light levels
- Advanced programming (upload settings via PC + 'zap function') with iDim Studio software
- Graphical PC user interface



More technical details via QR code or at:
helvar.com/products/idim

Luminaire Based **Sensors** (standalone)

	STANDALONE SENSORS	Control interface	Functionality		Motion detection area	Constant light reception area
			Motion Detector	Constant Light		
	Active+ Sense	N/A	PIR	●		
	Minisensor3	DALI *	PIR	●		
	iDim Sense 316	DALI *	PIR	●		
	µDim SL-MW-DA	DALI *	Microwave	●		
	µDim SL-MW-AN	1 - 10 V	Microwave	●		
	µDim SL-MW-SW	Switching	Microwave	-		
	µDim SL-PIR-AN	1 - 10 V	PIR	●		-
	µDim SL-PIR-SW	Switching	PIR	-		-
	MIM03	1 - 10 V	-	●	-	

LED MODULES

LS LED Modules

Helvar's new modular LS series LED modules allows flexibility within luminaire design. The linear LS series LED module family offers superior colour consistency, lifetime and high uniformity of light.

The range has been designed to match Zhaga 24 mm dimensions with three available lengths: 140 mm, 280 mm and 560 mm. By offering identical distance between LED chips on the modules, you can build linear luminaires with various lengths, starting from 140 mm up to many meters in 140 mm interval just by assembling the modules in line.

LS series is available in 3000 K and 4000 K colour temperatures. It has been designed to match with Helvar's latest low-current LED driver platform in series connection.

Module	LS142-8xx-006A	LS282-8xx-011A	LS562-8xx-025A
Dimensions	140x24x6 mm	280x24x6 mm	560x24x6 mm
Nominal Current	350 mA	350 mA	350 mA
Forward voltage *	11.8 V	23.7 V	47.2 V
Luminous flux *	570 lm	1150 lm	2300 lm
Efficacy up to*	140 lm/W	140 lm/W	140 lm/W
Colour variants	3000 K (830) 4000 K (840)	3000 K (830) 4000 K (840)	3000 K (830) 4000 K (840)



Linear LED Modules

With its linear mechanics, easy to use connections and best colour consistency, the Linear modules are the perfect solution for creating linear shaped LED luminaires.

Module Benefits

- Accurate LED binning for colour consistency and high uniformity
- Modular and Zhaga compliant allowing flexible and future proof designs
- Helvar LED driver offering (CC and DALI) for smooth dimming and compatibility
- Helvar complementary Lighting Controls for maximum energy efficiency

M-series



H-series



E-series



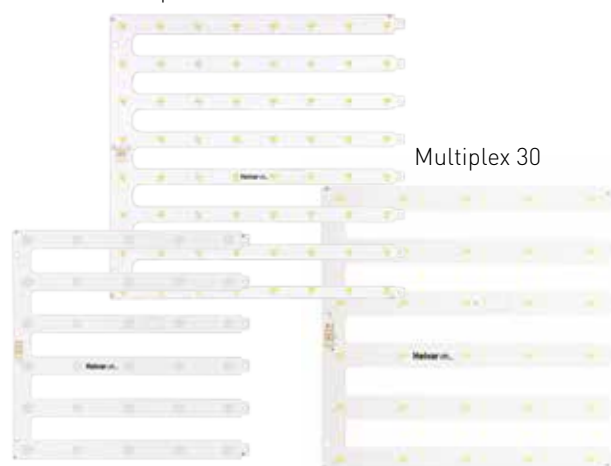
Multiplex LED Modules

The high-efficacy Multiplex LED modules provide a cost effective solution whilst delivering a uniform light output, offering a competitive solution for creating square shaped LED luminaires (like 600 x 600 ceiling panels).

Module Benefits

- Easy to design-in for flexibility in luminaire design
- Value-add optical technology (LAM-type) enabling slimmer luminaire designs
- Good thermal performance providing greater durability and long lifetime
- Choice of square and rectangular design for flexibility in design

Multiplex 64



Multiplex 30

Chip on Board LED Modules

The range of Chip on Board modules (COB) are the ideal components for creating circular spot lights and down lights fittings. Its range of luminous flux and colour temperature give design flexibility and choice to the luminaire manufacturer.

Module Benefits

- 3-Step MacAdam binning for colour consistency
- High luminous efficacy for maximum energy efficiency
- Range of power versions and colour temperatures from 2700K to 6500K CCT for design freedom
- CRI > 80 for superior light quality
- Compatible Helvar LED drivers (CC and DALI)
- Compatible holder and optics solutions available

COB 26 W series

COB 40 W series



COB 13 W series

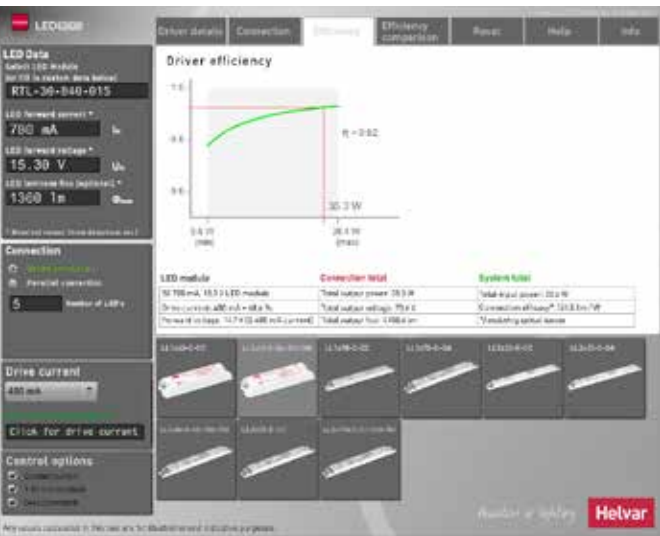
LEDesign 2.7

LEDesign from Helvar has been designed to help lighting specialists select the compatible control gear for any given LED light source and compare the energy efficiency of the LED solutions.

Using LED module's main input data, the LEdesign tool automates the selection process for compatible LED modules and LED drivers from Helvar's wide range. LEdesign shows the key electrical and photometrical parameters for the selected combination and indicates whether the LEDs are under or overdriven. What's more, the tool can also be programmed to display an efficiency graph of the selected LED load, showing how well it will perform. Additionally, the tool allows for very simple energy comparison against traditional light sources.

The version 2.7 update includes the latest Helvar LED drivers and offers many improvements. LEdesign is downloadable direct from the Helvar website (helvar.com/ledesign) and is compatible with Windows PC (Android and iOS versions will be made available soon), making it quick and easy to use on site, if required. LEdesign is constantly being developed to reflect the latest LED products, hence a version number will help indicate the latest version available.

Check back cover to see more of LEdesign.

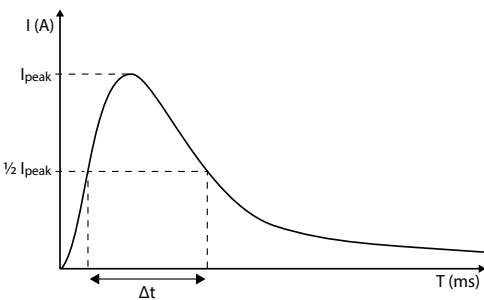


TECHNICAL INFORMATION

Quantity of control gear for miniature circuit breakers (MCB's)

- Type C MCB's are strongly recommended to use with fluorescent lighting.
- Other types can prove unsuitable due to their tripping properties.
- Practical quantities will depend strongly on the reactance of the actual circuit.

Conversion table for other types of Miniature Circuit Breaker	
MCB type	Relative quantity of ballasts
B 10 A	37 %
B 16 A	60 %
B 20 A	75 %
C 10 A	62 %
C 16 A	100 % (see tables)
C 20 A	125 %



Quantity of LED control gear for miniature circuit breakers (MCB's)

	Quantity of drivers per miniature circuit breaker 16 A Type C		Typical inrush current I_{peak} (A)	1/2 value time Δt (μs)	Calculated energy $I_{peak}^2 \Delta t$ (A²s)
	Based on I_{Cont}	Based on I_{peak}			
LL6-U-CC	250	2192	3	45,0	0,0003
LC1x30-E-DA	73	160	7	26,0	0,0011
LC1x30-E-CC	74	211	7	25,0	0,0009
OL1x60-E-CC	39	17	50	270,0	0,3736
OL1x100-E-CC1	20	13	26	610,0	0,2924
OL1x100-E-CC2	19	12	25	690,0	0,2889
LC1x30-E-AN	73	183	7	27,0	0,0011
OL1x100-E-CC1	20	13	26	610,0	0,2924
OL1x100-E-CC2	19	12	25	690,0	0,2889
LL1x70-E-CC	32	52	32	152,0	0,1158
LL1x70-E-DA	31	53	33	148,0	0,1465
LL2x25-E-CC	43	53	30	162,0	0,1040
LL2x35-E-CC	30	32	40	186,0	0,2198
LL1x20-E-DA	98	224	6	36,0	0,0007
LL1x10-42-E-CC	57	62	23	176,0	0,0672
LL1x10-42-E-DA	53	56	25	177,0	0,0797
LL1x23-80-E-CC	30	36	40	173,0	0,1978
LL1x80-E-CC-350-700	26	39	39	166,0	0,1885
LL1x110-E-CC-350-700	22	25	41	221,0	0,2730
LL1x110-E-CC-200-350	22	24	41	236,0	0,3010
LL1x40-E-CC	51	160	9	23,0	0,0014
LL1x40-E-DA1	53	172	9	22,0	0,0014
LL1x40-E-DA2	51	116	9	22,0	0,0014
LC1x70-E-CC	32	41	32	185,0	0,1536
LC1x70-E-DA	32	46	34	165,0	0,1541
LL1x50-E-CC	43	62	29	143,0	0,0889
LC1x50-E-CC	43	57	29	156,0	0,1041
OL1x30-E-CV24	72	68	16	208,0	0,0386
OL1x75-E-CV24	29	37	29	218,0	0,1344
LL1x12-E-CC-350	162	172	16	83,0	0,0159
LL1x12-E-CC-700	172	159	19	78,0	0,0203
LL1x15-E-CC-500	145	94	22	119,0	0,0410
LL1x20-E-CC-350	108	94	22	117,0	0,0417
LL1x20-E-CC-700	108	93	22	119,0	0,0424
LL60/2-E-DA	38	30	42	189,0	0,2381
LL1x30-E-CV24	70	72	19	184,0	0,0443
LL1x75-E-CV24	30	37	29	220,0	0,1346
LL1x42-E-CC-350	53	75	18	180,0	0,0412
LC1x50-E-DA	43	61	29	146,0	0,0967
LL1x110-E-CC-200-350	22	24	41	236,0	0,3010
LL1x38-CC	56	95	8	28,0	0,0012
LL1x20-E-CC	98	224	6	36,0	0,0007
LL2x35-E-DA	31	30	42	189,0	0,2381
LL1x50-E-CC-700-1050	45	60	29	148,0	0,0901
LC1x50-E-CC-700-1050	46	56	30	150,0	0,1083
LL1x30-E-CC-350	78	67	19	190,0	0,0478
LL1x30-E-CC-700	79	74	19	175,0	0,0459
LL1x150-E-CC	17	15	51	286,0	0,4428
LL1x110-E-DA	22	21	46	240,0	0,3457
LL1x20-E-DA-nDim	98	224	6	36,0	0,0007
LC1x30-E-DA-nDim	73	160	7	26,0	0,0011
LC1x70-E-DA-nDim	32	46	34	165,0	0,1541
LL1x10-42 Active+	53	56	25	177,0	0,0797

		Control				Electrical parameters		
	Model	ON/OFF	DALI	1 - 10 V	*Switch control	Product category	Iout [mA]	Output voltage [V]
TUNABLE WHITE	LL35/2-E-DA-iC	-	DT 8	-	●	Adjustable I-OUT	350-700	25-100
	LL60/2-E-DA-iC	-	DT 8	-	●	Adjustable I-OUT	350-700	25-100
	LL60/2-E-DA Dynamic	-	DT 8	-	-	Adjustable I-OUT	350-700	25-100
SELV 60	LL6-U-CC	●	-	-	-	Selectable I-OUT	350, 700	7...16
	LL1x50-E-CC-700-1050	●	-	-	-	Adjustable I-OUT	700-1050	20-48
	LC1x50-E-DA **	-	●	-	-	Adjustable I-OUT	1050-1400	20-48
	LC1x50-E-CC **	●	-	-	-	Adjustable I-OUT	1050-1400	20-48
	LL2x25-E-CC	●	-	-	-	Adjustable I-OUT	350-700	20-50
	LL1x50-E-CC	●	-	-	-	Adjustable I-OUT	1050-1400	20-48
	LC1x50-E-CC-700-1050	●	-	-	-	Adjustable I-OUT	700-1050	20-48
	LL1x20-E-DA **	-	●	-	●	Selectable I-OUT	350, 500, 700	10-57
	LL1x20-E-CC **	●	-	-	-	Selectable I-OUT	350, 500, 700	10-57
SELV 120	LC1x30-E-CC **	●	-	-	-	Selectable I-OUT	350,500,700	10-60
	LC1x30-E-AN **	-	-	●		Selectable I-OUT	350,500,700	10-60
	LC1x30-E-DA **	-	-	●	●	Selectable I-OUT	350,500,700	10-60
	LL1x40-E-DA-350-700	-	●	-	●	Adjustable I-OUT	350-700	20-80
	LL1x40-E-DA-700-1050	-	●	-	●	Adjustable I-OUT	700-1050	20-57
	LL1x40-E-CC	●	-	-	-	Adjustable I-OUT	700-1050	20-80
	LC1x70-E-DA **	-	●	-	●	Adjustable I-OUT	700-1400	30-100
	LC1x70-E-CC **	●	-	-	-	Adjustable I-OUT	700-1400	30-100
	LL2x35-E-DA	-	●	-	●	Adjustable I-OUT	350-700	25-100
	LL2x35-E-CC	●	-	-	-	Adjustable I-OUT	350-700	25-100
	LL1x12-E-CC-350	●	-	-	-	Single I-OUT	350	8,4-38
	LL1x12-E-CC-700	●	-	-	-	Single I-OUT	700	3,5-17
	LL1x15-E-CC-500	●	-	-	-	Single I-OUT	500	8-30
SMALL SIZE BASIC	LL1x20-E-CC-350	●	-	-	-	Single I-OUT	350	16-57
	LL1x20-E-CC-700	●	-	-	-	Single I-OUT	700	8-29
	LL1x30-E-CC-700	●	-	-	-	Single I-OUT	700	28-43
	LL1x30-E-CC-350	●	-	-	-	Single I-OUT	350	57-86
	LL1x10-42-E-DA	-	●	-	●	Adjustable I-OUT	120-350	50-350
	LL1x10-42-E-CC	●	-	-	-	Adjustable I-OUT	120-350	30-350
	LL1x80-E-CC-350-700	●	-	-	-	Adjustable I-OUT	350-700	50-228
	LL1x23-80-E-CC	●	-	-	-	Adjustable I-OUT	150-350	120-350
	LL1x110-E-CC-350	●	-	-	-	Single I-OUT	350	120-314
	LL1x110-E-CC-200-350	●	-	-	-	Adjustable I-OUT	200-350	120-350
HIGHLY EFFICIENT	LL1x110-E-CC-350-700	●	-	-	-	Adjustable I-OUT	350-700	120-314
	LL1x110-E-DA	-	●	-	●	Adjustable I-OUT	350-700	50-314
	LL1x150-E-CC	●	-	-	-	Adjustable I-OUT	350-700	128-350
	LL1x70-E-DA	-	●	-	●	Adjustable I-OUT	350-700	50-200
	LL1x70-E-CC	●	-	-	-	Adjustable I-OUT	350-700	50-200
	LL1x42-E-CC-350	●	-	-	-	Single	350	80-120
	LL1x38-E-CC	●	-	-	-	Selectable I-OUT	300,35	70-110
	OL1x30-E-CV24	●	with LL1xCV-DA	-	-	Constant voltage	0-1250	24
CONSTANT VOLTAGE	OL1x75-E-CV24	●	with LL1xCV-DA	-	-	Constant voltage	0-3125	24
	LL1xCV-DA	-	●	-	-	Constant voltage	0-5000	12-24
	LL1x30-E-CV24	●	with LL1xCV-DA	-	-	Constant voltage	0-1250	24
	LL1x75-E-CV24	●	with LL1xCV-DA	-	-	Constant voltage	0-3125	24
	OL1x60-E-CC	●	-	-	-	Selectable I-OUT	350,700,1400	35-90
OUTDOOR	OL1x100-E-CC1	●	-	-	-	Selectable I-OUT	700, 1050	70-120
	OL1x100-E-CC2	●	-	-	-	Selectable I-OUT	1400, 21	30-72
	LL1x20-E-DA-nDim	-	●	-	-	Selectable I-OUT	350,500,700	10-57
NIGHTDIM	LC1x30-E-DA-nDim	-	●	-	-	Selectable I-OUT	350,500,700	10-60
	LC1x70-E-DA-nDim	-	●	-	-	Adjustable I-OUT	700-1400	30-100
ACTIVE+	LL1x10-42 Active+	-	-	-	-	Adjustable I-OUT	120-350	50-350

*) Switch-Control provides ON/OFF switching and UP/DOWN dimming functionality from one or more simple switches. Switch-Control and DALI can not be

Application						
Max. output power [W]	Power factor at max. load	Efficiency at max. load	IP rating	Output protection	Safety classification	Dimensions L x W x H [mm]
35	0.98	90	20	SELV <120 V	Class I, II	380x35x21
60	0.98	90	20	SELV <120 V	Class I, II	380x35x21
60	0.98	90	20	SELV <120 V	Class I, II	380x35x21
7	0.85	80	20	SELV <60 V	Class I, II, III	118x40x21,2
50.4	0.95	90	20	SELV <60 V	Class I, II	280x30x21
50.4	0.98	88	20	SELV <60 V	Class I, II, III	125x81x30
50.4	0.98	90	20	SELV <60 V	Class I, II, III	125x81x30
2x 25.2	0.98	87	20	SELV <60 V	Class I, II	360x30x21
50.4	0.98	90	20	SELV <60 V	Class I, II	280x30x21
50.4	0.95	90	20	SELV <60 V	Class I, II	123x28x79
20	0.90c	88	20	SELV <120 V	Class I, II, III	184x40x25,2
20	0.90c	89	20	SELV <120 V	Class I, II, III	184x40x25,2
30	0.96	88	20	SELV <120 V	Class I, II, III	106x67x28
30	0.96	87	20	SELV <120 V	Class I, II, III	106x67x28
30	0.96	87	20	SELV <120 V	Class I, II, III	106x67x28
40	0.96	90	20	SELV <120 V	Class I, II, III	184x46,5x28
40	0.96	89	20	SELV <120 V	Class I, II, III	184x46,5x28
40	0.95	90	20	SELV <120 V	Class I, II, III	184x46,5x28
70	0.98	91	20	SELV <120 V	Class I, II, III	143.6x71.3x30
70	0.98	91	20	SELV <120 V	Class I, II, III	143.6x71.3x30
2x35	0.98	90	20	SELV <120 V	Class I, II	380x35x21
2x35	0.98	91	20	SELV <120 V	Class I, II	380x35x21
12	0.50c	83	20	SELV <60 V	Class I, II, III	123x45x19
12	0.50c	83	20	SELV <60 V	Class I, II, III	123x45x19
15	0.50c	85	20	SELV <60 V	Class I, II, III	123x45x19
20	0.50c	85	20	SELV <60 V	Class I, II, III	123x45x19
20	0.50c	87	20	SELV <60 V	Class I, II, III	123x45x19
30	0.95	90	20	SELV <60 V	Class I, II, III	153x41x32
30	0.95	90	20	SELV <120 V	Class I, II, III	153x41x32
42	0.96	93	20	Non-isolated	Class I	280x30x21
42	0.98	94	20	Non-isolated	Class I	190x30x21
80	0.98	94	20	Non-isolated	Class I	280x30x21
80	0.98	95	20	Non-isolated	Class I	230x30x21
110	0.98	95	20	Non-isolated	Class I	230x30x21
110	0.98	95	20	Non-isolated	Class I	230x30x21
110	0.98	95	20	Non-isolated	Class I	280x30x21
110	0.98	95	20	Non-isolated	Class I	280x30x21
150	0.98	96	20	Non-isolated	Class I	280x30x21
70	0.98	91	20	Non-isolated	Class I	280x30x21
70	0.98	91	20	Non-isolated	Class I	280x30x21
42	0.98	88	20	Double-isolated	Class I	280x30x21
38.5	0.98	89	20	basic insulated	Class I, II, III	230x30x21
30	0.95	88	67	SELV <60 V	Class I, II, III	131x42x34
75	0.95	89	67	SELV <60 V	Class I, II, III	155x50x32
120W			20	double-isolated	Class I, II, III	184x40x25.2
30	0.95	88	67	SELV <60 V	Class I, II, III	153x41x32
30	0.95	88	67	SELV <60 V	Class I, II, III	180x52x30
63	0.97	90	65	SELV <120 V	Class I	149x53x35
105	0.98	91	65	Double-isolated	Class I, II	234x53x35
105	0.98	91	65	Double-isolated	Class I, II	234x53x35
20	0.90c	88	20	SELV <120 V	Class I, II, III	184x40x25,2
30	0.96	87	20	SELV <120 V	Class I, II, III	106x67x28
70	0.98	91	20	SELV <120 V	Class I, II, III	143.6x71.3x30
42	0.96	93	20	Non-isolated	Class I	280x30x21

Guide to good LEDesign™

1

DEFINE LED APPLICATION

- Luminaire
- System functionality

2

SELECT SUITABLE LED MODULE

- Helvar datasheets
- Design-in guide

3

SELECT SUITABLE LED DRIVER

- Helvar LEDesign™
- Helvar datasheets

4

SELECT LED CONTROLS

- Luminaire based / building wide
- BMS integration requirements

5

PLAN SUPPORT REQUIREMENTS

- Helvar support offering

LEDesign™ is a calculating tool to assist LED specialists in selecting the appropriate LED driver and modules. To download the Helvar LEDesign calculator go to

helvar.com/ledesign or scan this QR code:



www.helvar.com

Helvar has representatives all over the world.
For additional information, please visit helvar.com/contact-us