Schréder
Experts in lightability™

GL2 COMPACT

LENSO FLEX™ 4

## Compact, powerful and efficient LED lighting solution

GL2 COMPACT offers a unique combination of features in a slender housing for lighting the entrance, threshold and interior zones of a tunnel.

Available in five sizes and with various lumen packages, GL2 COMPACT offers a high resistance to water, dust ingress and impacts.

The photometry of GL2 COMPACT can be either symmetrical or asymmetrical to adapt to the tunnel lay-out. This lighting solution offers an uniform lighting and superior visibility in critical areas such as the entrance and exit zones of a tunnel.

GL2 COMPACT offers several mounting possibilities. For example, it can be fixed directly onto a cable rack. The photometry can be adjusted on-site thanks to a tiltable bracket.

GL2 COMPACT guarantees long lasting performance with minimum maintenance.

IP 66 | IK 08

CE | RoHS

UL 1598 CSA C22.2 No. 250.0

TUNNELS & UNDERPASSES

INDUSTRIAL HALLS & WAREHOUSES

GL2 COMPACT | SUMMARY

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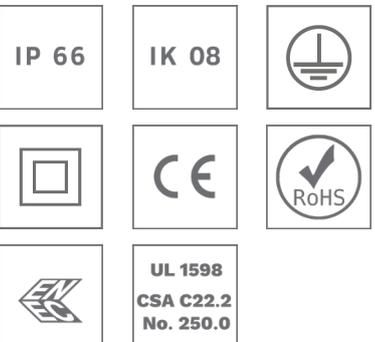
Concept

The GL2 COMPACT range combines the energy efficiency of LED technology with photometric versatility for a minimum total cost of ownership. The design of the LensoFlex® photometric engine offers maximum versatility for lighting underpasses, town and motorway tunnels.

Available with symmetrical or asymmetrical light distributions, GL2 COMPACT adapts perfectly to the requirements of the space to be lit.

It is composed of an extruded aluminium body and a tempered glass protector.

GL2 COMPACT is available in five sizes to fit all requirements.

For further savings, GL2 COMPACT can be controlled via a DALI or 1-10V protocol or via a dedicated luminaire controller (Lumgate) connected to an industrial bus (option).

The GL2 COMPACT range has been developed to enable constant dimming with an optimised power factor. Designed with two electronic circuits, GL2 COMPACT 5 can either be dimmed completely, partially or even have 50% of its LEDs switched off. This possibility not only maximises energy savings. It also extends the lifetime of the complete installation and reduces the need for disruptive maintenance.

GL2 COMPACT is proposed with various direct and swiveling mounting options. This range is part of Schréder's complete tunnel solution that includes robust luminaires, smart cabling with quick-on QPD connectors and advanced control systems to improve safety for drivers and to provide major operational benefits for tunnel managers.

GL2 COMPACT tunnel luminaires can be fitted with an optional Lumgate controller for remote commissioning and bi-directional control.
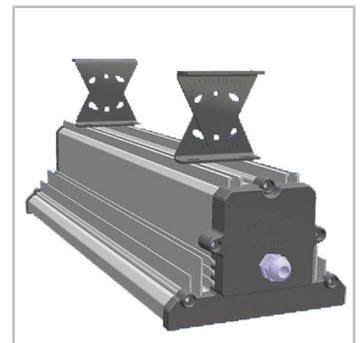
Suspended mounting is completed with a swiveling bracket that is adjustable on-site (+/- 60°).

TYPES OF APPLICATION

- TUNNELS & UNDERPASSES
- INDUSTRIAL HALLS & WAREHOUSES

KEY ADVANTAGES

- Maximised savings in energy and maintenance costs

- High tightness level and excellent heat dissipation for long lasting performance

- High level of protection against corrosion, impacts and vibrations

- Can be equipped with an integrated luminaire controller (Lumgate) for automated commissioning and bi-directional controls (option)

- On-site adjustment for optimal photometry

- LensoFlex®4 versatile solutions for high-end photometries maximising comfort and safety

GL2 COMPACT is available in 5 sizes for flexibility.

As an option, the GL2 COMPACT luminaires come with tool less QPD connectors for an easy and quick installation.

LensoFlex®4

LensoFlex®4 maximises the heritage of the LensoFlex® concept with a very compact yet powerful photometric engine based upon the addition principle of photometric distribution. The number of LEDs in combination with the driving current determines the intensity level of the light distribution. With optimised light distributions and very high efficiency, this fourth generation enables the products to be downsized to meet application requirements with an optimised solution in terms of investment.

LensoFlex®4 optics can feature backlight control to prevent intrusive lighting, or a glare limiter for high visual comfort.

Advanced Tunnel System 4 (ATS 4)

The ATS 4 (Advanced Tunnel System 4) is a powerful tunnel lighting control system for precise remote dimming and switching of each individual connected luminaire, based on various tunnel parameter inputs (emergency exits, smoke extraction system, traffic cameras, etc.).

The ATS 4 permanently communicates with the Lumgates, an RS422 closed-loop device connected to the luminaire drivers, to control the light intensity and provide command/reporting features.

Advanced Tunnel System 4 DALI (ATS 4 DALI)

The Advanced Tunnel System 4 DALI provides the essential functions of the ATS 4 over a DALI network protocol, enabling dimming of luminaire clusters to be controlled collectively.

The ATS 4 DALI is the ideal solution to implement a reliable and powerful tunnel lighting control system with streamlined features and optimised costs.

Sensors and cameras

The ATS 4 can be connected to various sensors and cameras to permanently adjust the lighting levels to indoor and outdoor conditions and avoid any visual adaptation problems.

Tunnel Control System 4 (TCS 4)

The Tunnel Control System 4 (TCS 4) is a gateway ensuring the connection/control of the multiple ATS 4 controllers as well as the communication with the central management system of the tunnel infrastructure (SCADA) if applicable.

Lumgate V4

The Lumgate is a luminaire control unit that acts as an interface between the lighting management system and the tunnel luminaires or driver boxes. Connected to the luminaire drivers, it switches the drivers on/off, controls the light intensity and provides command/reporting features.

It is suitable for installation in driver boxes or directly in the luminaire. It communicates with the driver via 0-10V or DALI command. This brand new interface includes advanced Inrush Current Limitation Features and a 24 hour fail-safe repeat mode.

GL2 COMPACT | ATS 4 CONTROL SYSTEM

Jointly developed by Schréder and Phoenix Contact, the Advanced Tunnel System 4 (ATS 4) has been designed to control every lighting point or clusters of luminaires to perfectly adapt the lighting level according to conditions in the tunnel, to monitor the power consumption and to report the burning hours or any failure to facilitate maintenance. The system includes a self-commissioning feature and enables scenarios to be adapted remotely at any moment.

PRECISE AND CONTINUOUS DIMMING
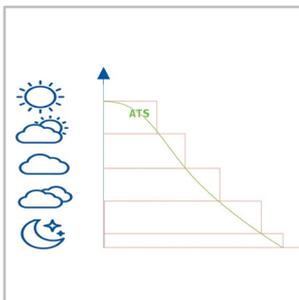
ATS 4 provides 25 different dimming levels to precisely adapt the lighting to the real needs. Without any over-lighting, the energy consumption is limited to what is absolutely necessary to ensure safe and comfortable driving conditions.

FLEXIBILITY

Flexible redundancy offers security on multi-level applications, not only for the lighting.

PLUG AND PLAY COMMISSIONING

This control system is easy to install and configure. The tunnel lighting study can be directly imported into the ATS 4 control system. This unique feature, in combination with the auto-addressing of the Lumgates, leads to an extremely short commissioning time once the fixtures have been installed.

The ATS 4 benefits from a complete set of toolless smart cables and connectors, allowing installers to speed up cabling and save valuable time on-site

INTERACTION WITH THIRD PARTY SYSTEMS

Every command or signal sent to or coming from a tunnel component (emergency exit, smoke extraction system, traffic management system...) can be used to trigger a responsive lighting scenario. All of the tunnel equipment can be controlled through the same bus command.

MAXIMISED SAFETY

The system enables the easy set-up of emergency and disaster management scenarios.

ADAPTIVE LIGHTING ACCORDING TO SPEED

The ATS 4 can be linked to a traffic monitoring system to obtain data regarding speed or density to adapt the lighting level according to safety standards. This option further reduces energy consumption and increases the lifetime of the installation while ensuring the best driving conditions for motorists.

ADAPTIVE LIGHTING ACCORDING TO POLLUTION

Based on cleaning cycles, the ATS 4 can take into account the depreciation of the flux due to dirt accumulation to continuously provide the requested lighting level in the tunnel. No more, no less. This feature offers additional energy savings while providing safety and comfort for users.

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ASSET MANAGEMENT SOLUTION

Modbus

TCS 4

ATS4

L20

L20

LUMGATE V4

PHŒNIX CONTACT | Schréder
PARTNERS IN TUNNEL INNOVATION

GENERAL INFORMATION

Recommended installation height	3m to 8m | 10' to 26'
Driver included	Yes
CE mark	Yes
ENEC certified	Yes
UL certified	Yes
ROHS compliant	Yes
Testing standard	EN 60598-1 EN 60598-2-1 EN 60598-2-3 EN 62262 LM 79-08 (all measurements in ISO17025 accredited laboratory) IEC 62717 (LLM ENEC +) IEC 62722-2-1 IEC 62471

HOUSING AND FINISH

Housing	Aluminium
Optic	PMMA
Protector	Tempered glass
Housing finish	Standard polyester powder coating (C2-C3 according to the ISO 9223-2012 standard) Optional "seaside" polyester powder coating (C4 according to the ISO 9223-2012 standard) Optional "seafront" polyester powder coating with anodisation (C5-CX according to the ISO 9223-2012 standard)
Tightness level	IP 66
Impact resistance	IK 08
Vibration test	Compliant with modified IEC 68-2-6 (0.5G)

OPERATING CONDITIONS

Operating temperature range (Ta)	-30°C up to +55°C / -22°F up to 131°F with wind effect

· Depending on the luminaire configuration. For more details, please contact us.

ELECTRICAL INFORMATION

Electrical class	Class 1 US, Class I EU, Class II EU
Nominal voltage	120-277V – 50-60Hz 220-240V – 50-60Hz 347-480V – 50-60Hz
Surge protection options (kV)	4 10 20
Electromagnetic compatibility (EMC)	EN 55015:2013/A1:2015, EN 61000-3-2:2014, EN 61000-3-3:2013, EN 61547:2009, EN 62493:2015
Control protocol(s)	1-10V, DALI
Control options	Lumgate, Bi-power, Remote management
Associated control system(s)	Advanced Tunnel System 4 (ATS 4) Advanced Tunnel System 4 DALI (ATS 4 DALI)

OPTICAL INFORMATION

LED colour temperature	4000K (Neutral White NW 740)
Colour rendering index (CRI)	>70 (Neutral White NW 740)

LIFETIME OF THE LEDS @ TQ 25°C

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All configurations	100,000h - L90

· Lifetime may be different according to the size/configurations. Please consult us.

DIMENSIONS AND MOUNTING

AxBxC (mm | inch)	GL2 COMPACT L1 : 193x137x343 | 7.6x5.4x13.5 GL2 COMPACT L2 : 193x137x473 | 7.6x5.4x18.6 GL2 COMPACT L3 : 193x137x543 | 7.6x5.4x21.4 GL2 COMPACT L5 : 193x137x943 | 7.6x5.4x37.1 GL2 COMPACT L5 LUMGATE : 193x137x943 | 7.6x5.4x37.1
Weight (kg | lbs)	GL2 COMPACT L1 : 3.0 | 6.6 GL2 COMPACT L2 : 4.0 | 8.8 GL2 COMPACT L3 : 4.8 | 10.6 GL2 COMPACT L5 : 6.0 | 13.2 GL2 COMPACT L5 LUMGATE : 6.0 | 13.2
Mounting possibilities	Mounting on cable tray Suspended mounting Surface mounting Direct mounting on ceiling

· *For more information about mounting possibilities, please consult the installation sheet.*

· *Size and weight may be different according to the configuration. Please consult us for more information.*
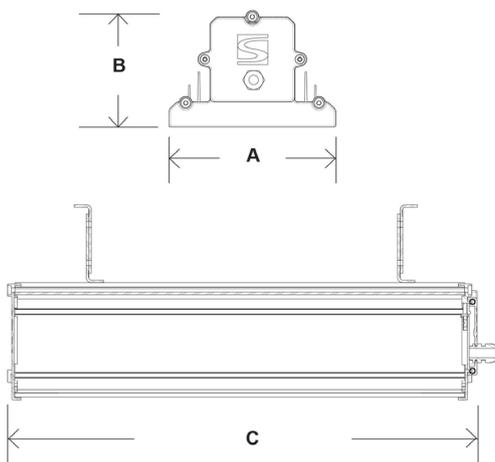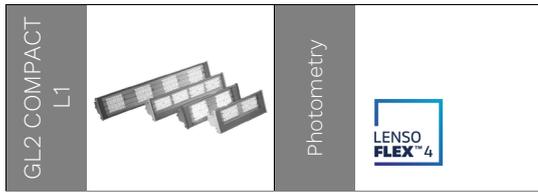
GL2 COMPACT L1

Photometry — LENSO FLEX™ 4

Luminaire output flux (lm)		Power consumption (W)		Luminaire efficacy (lm/W)
Neutral White NW 740				
Number of LEDs	Min	Max	Min	Max	Up to
20	4200	6500	33	46	150

Tolerance on LED flux is ± 7% and on total luminaire power ± 5 %
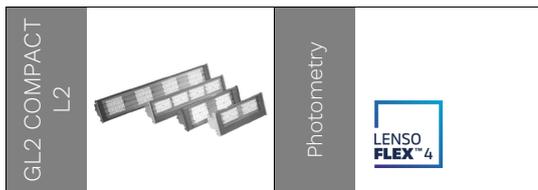
GL2 COMPACT L2

Photometry — LENSO FLEX™ 4

Luminaire output flux (lm)		Power consumption (W)		Luminaire efficacy (lm/W)
Neutral White NW 740				
Number of LEDs	Min	Max	Min	Max	Up to
40	8500	13100	62	88	158

Tolerance on LED flux is ± 7% and on total luminaire power ± 5 %
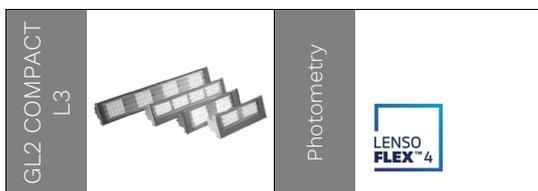
GL2 COMPACT L3

Photometry — LENSO FLEX™ 4

Luminaire output flux (lm)		Power consumption (W)		Luminaire efficacy (lm/W)
Neutral White NW 740				
Number of LEDs	Min	Max	Min	Max	Up to
60	12700	19500	94	135	156

Tolerance on LED flux is ± 7% and on total luminaire power ± 5 %
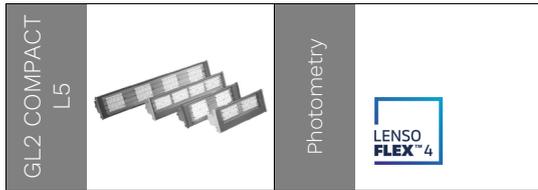
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GL2 COMPACT L5

Photometry

LENSO FLEX™ 4

Luminaire output flux (lm)		Power consumption (W)		Luminaire efficacy (lm/W)
Neutral White NW 740				
Number of LEDs	Min	Max	Min	Max	Up to
80	17000	26100	120	171	163
100	21200	32500	152	218	160

Tolerance on LED flux is ± 7% and on total luminaire power ± 5 %
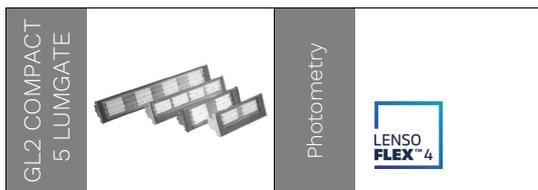
GL2 COMPACT 5 LUMGATE

Photometry

LENSO FLEX™ 4

Luminaire output flux (lm)		Power consumption (W)		Luminaire efficacy (lm/W)
Neutral White NW 740				
Number of LEDs	Min	Max	Min	Max	Up to
80	17000	26100	125	175	156

Tolerance on LED flux is ± 7% and on total luminaire power ± 5 %

LensoFlex4

LENSO FLEX™4

5300 — Ultra-Narrow

5303 — Medium

5304 — Medium

5305 — Medium

5306 — Medium

50006 — Medium Symmetrical

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5307 — Wide
LENSO FLEX™ 4

5308 — Wide
LENSO FLEX™ 4

5366 — Extra-Wide
LENSO FLEX™ 4

50004 — Extra-Wide Symmetrical
LENSO FLEX™ 4

5393 — Ultra-Wide
LENSO FLEX™ 4

50008 — Ultra-Wide Symmetrical
LENSO FLEX™ 4