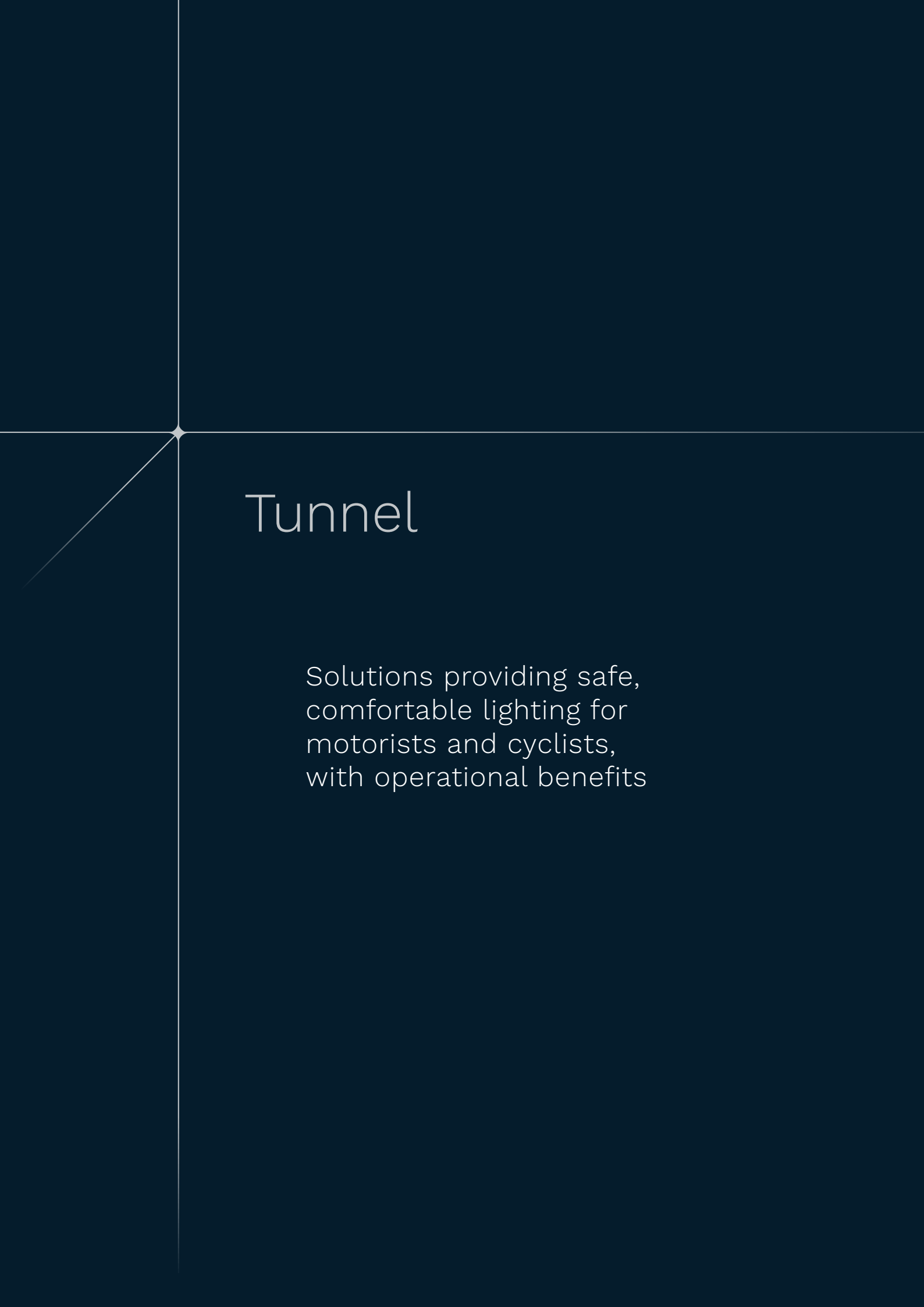


Schröder
Experts in lightability™



Tunnel

Catalogue



Tunnel

Solutions providing safe,
comfortable lighting for
motorists and cyclists,
with operational benefits





TUNNEL

PRODUCT RANGE

TFLEX 	LENSO FLEX® 4 PHOTOMETRY	ATS4 CONTROL	CIRCLELIGHT SUSTAINABILITY
TFLEX STS 	LENSO FLEX® 4 PHOTOMETRY	ATS4 CONTROL	CIRCLELIGHT SUSTAINABILITY
TFLEX LINE 	CONTI FLEX™ PHOTOMETRY	ATS4 CONTROL	
GL2 COMPACT 	LENSO FLEX® 4 PHOTOMETRY	ATS4 CONTROL	
CONTILED 	LENSO FLEX® 2 PHOTOMETRY	CONTI FLEX™ CONTROL	ATS4
FV32 LED 	LENSO FLEX® 2 PHOTOMETRY	ATS4 CONTROL	



The most complete tunnel lighting control system

Jointly developed with Phoenix Contact, the Advanced Tunnel System 4 (ATS 4) is a powerful tunnel lighting control system enabling precise remote dimming and switching of each connected luminaire, based on various tunnel parameter inputs.

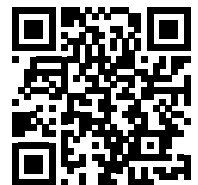
This innovative tool can constantly **adapt the lighting levels according to specific tunnel conditions**, such as weather, traffic speed and density, and other sensor inputs such as dirt accumulation, wall reflectance, etc. **It monitors the power consumption and reports any failures.**

As the system integrates the initial tunnel lighting study and uses the industrial BUS for individual auto-addressing, **the ATS speeds up the commissioning process, saving valuable time and resources on-site.**



KEY ADVANTAGES

- > **Improve reactivity to any sudden changes in the tunnel**
- > **Maximise energy savings thanks to highly efficient dimming**
- > **Easy to install and configure**
- > **Reduce commissioning time significantly (up to 75%)**
- > **Reduce on-site interventions**
- > **Compliant with the highest cybersecurity standards (NIS EU 2016/1148 - IEC62443)**



Discover more

1
CREATE SAFE
ENVIRONMENTS
FOR USERS

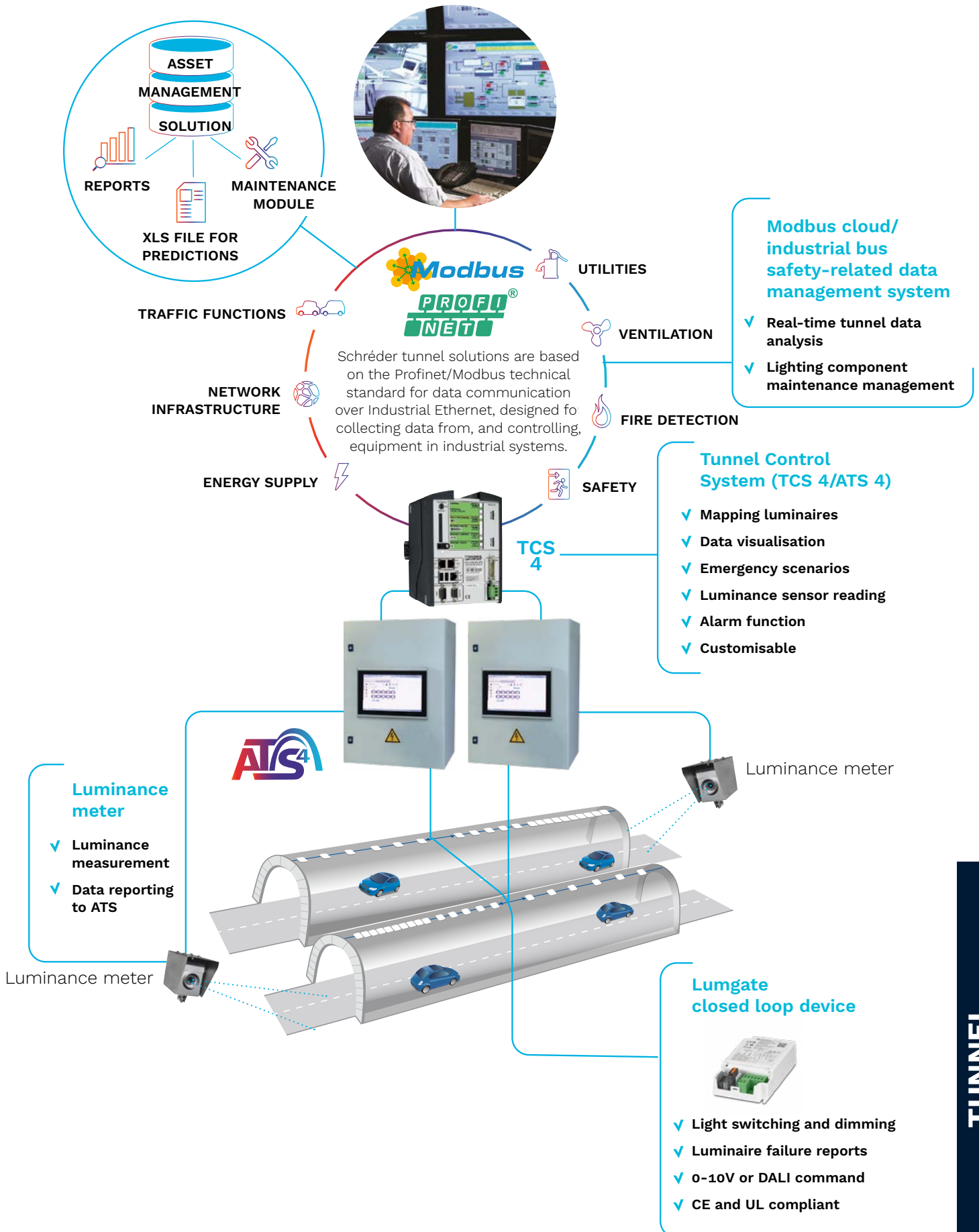
2
ENABLE
MOBILITY

3
DESIGN
SUSTAINABLE
TUNNELS

4
GENERATE
SIGNIFICANT TIME
AND COST SAVINGS



Based on Industry 4.0 technologies





Tunnel lighting control solution over a DALI network protocol

Provides the essential control functions of the ATS 4 in a **lean feature set**.

Enables **coordinated dimming and switching** of groups of luminaires for even more **savings**.



Equipped with a fully featured **powerful lighting control software**. No additional interface is required.

The ideal **solution** for basic tunnels or interior zones of long tunnels.

✓ Optimised installation

The ATS 4 DALI cabinet constantly communicates with the ATS 4 DALI boxes. Equipped with multiple DALI outputs (up to 8 DALI masters), the DALI boxes send commands to or receive data from groups of luminaires. This type of system architecture provides an optimised solution for specific tunnel needs.

✓ Standard cabling

The ATS 4 DALI benefits from a complete set of toolless standard cables and quick-on connectors, considerably speeding up cabling and saving valuable time on-site.



COMMUNICATION TYPE	DALI network	Industrial bus communication
INSTALLATION TYPE	Luminaires/driver box equipped with DALI drivers	Luminaires/driver boxes equipped with Lumgate
LIGHTING CONTROL	Broadcast command (one order per luminaire segment)	Individual control (one order per luminaire)
MAINTENANCE	Group failure indication	Precise failure location
CABLE TYPE	Standard cables	Bus communication cables
MAX. CIRCUIT CABLE LENGTH	Up to 300m per entire segment	Up to 400m between two devices
INSTALLATION	Toolless plug-and-play system	
SYSTEM CAPACITY	2 to 8 DALI masters per ATS 4 DALI box	240 Lumgates per ATS 4
IDEAL FOR	Basic tunnels or interior zones	Complex tunnel architecture or entrance areas





MAIN APPLICATIONS



TUNNELS &
UNDERPASSES

Fully integrated, high-performance tunnel lighting solution

Building on the proven experience of the first TFLEX range, the TFLEX GEN2 luminaires take tunnel lighting to a new standard of modularity and precision.

While retaining the core strengths of the original design, this second generation features a re-engineered architecture that offers exceptional flexibility. The optical units and driver box can be configured to match the exact geometry and operational constraints of each tunnel, ensuring an optimal solution is provided. This optimised design also reduces material consumption and environmental impact, without compromising photometric performance.

The TFLEX GEN2 range is a reliable solution to meet your lighting challenges, helping to create safer, more efficient and sustainable tunnels.

				
TFLEX GEN2	BASE	MODULE 1 COMBI 1	MODULE 2 COMBI 2	MODULE 3 COMBI 3
Ingress protection (IP)	IP66			
Impact resistance (IK)	IK10	IK09 (COMBI 1, COMBI 2 and COMBI 3) IK10 (MODULE 1, MODULE 2 and MODULE 3)		
Luminaire output (flux)	Up to 23,000lm	Up to 34,500lm	Up to 69,000lm	Up to 95,200lm
Colour temperature	Neutral white 740			
Nominal voltage	120-277V – 50-60Hz 220-240V – 50-60Hz 347-480V – 50-60Hz			
   				



KEY ADVANTAGES

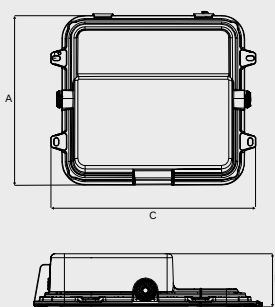
- > **Flexibility:** modular approach with wide range of lighting distributions
- > **Compact, lightweight and easy to install**
- > **Two electrical circuits** for enhanced dimming possibilities, optimised power factor and longer lifespan
- > **Separate housings** for gear (DRIVE) and optical units (MODULE/COMBI) for optimised thermal management in high-power applications
- > **Tool-free access** for easy maintenance

DIMENSIONS

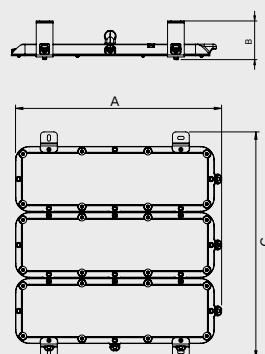
TFLEX GEN2	BASE	MODULE 1	MODULE 2	MODULE 3	COMBI 1	COMBI 2	COMBI 3
A	415mm 16.3"	601.4mm 23.6"	601.4mm 23.6"	601.4mm 23.6"	593mm 23.3"	785mm 30.9"	978mm 38.4"
B	96mm 3.8"	113.3mm 4.4"	113.3mm 4.4"	113.3mm 4.4"	115mm 4.5"	115mm 4.5"	115mm 4.5"
C	488mm 19.2"	275mm 10.8"	467mm 18.4"	660mm 25.9"	600mm 23.6"	600mm 23.6"	600mm 23.6"
KG	10.7-12kg 23.5-26.4lbs	7.1kg 15.6lbs	11.6kg 25.5lbs	16.2kg 35.7lbs	13.7kg 30.2lbs	18.3kg 40.3lbs	22.8kg 50.8lbs

Weight and dimensions may be different according to the product configuration. Please consult us.

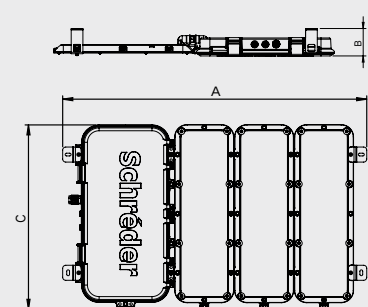
TFLEX BASE



TFLEX GEN2 MODULE



TFLEX GEN2 COMBI



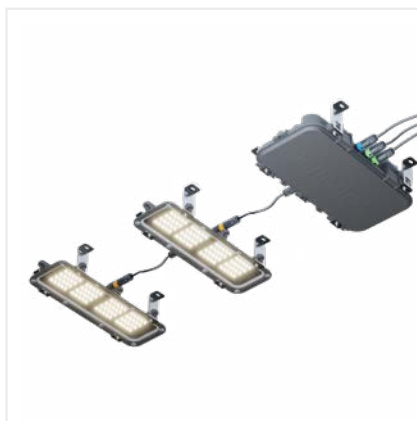
DESIGN HIGHLIGHTS



The lighting modules integrate advanced photometric engines, delivering optimal visibility, enhanced visual comfort and maximum energy efficiency.



The driver box, TFLEX GEN2 DRIVE, is equipped with the latest control technologies to provide a responsive solution for your tunnel lighting management.



Its modular architecture provides outstanding flexibility to adapt precisely to any tunnel geometry or structural constraint.



Tool-free, fire-retardant cables and connectors reduce installation time and improve the quality and reliability of the tunnel lighting network.

MOUNTING



The fixed brackets allow easy mounting on flat surfaces, whether it is on walls or ceilings.



Plug and play philosophy.



TFLEX STS



MAIN APPLICATIONS



TUNNELS &
UNDERPASSES

Modular,
highly
corrosion-
resistant
tunnel lighting
solution

TFLEX STS is a modular-based lighting solution designed for enhancing and securing the road tunnel driving experience in highly-corrosive environments.

Made of highly corrosion-resistant stainless steel, TFLEX STS COMBI provides a powerful yet robust solution for tunnels with harsh environments.

TFLEX STS COMBI offers an advanced, fully integrated system with lighting, cabling and control, guaranteeing the lowest energy consumption while respecting the most stringent tunnel lighting requirements and standards.



TFLEX STS	BASE 40	COMBI/MODULE 40	COMBI/MODULE 60	COMBI/MODULE 100
Ingress protection (IP)	IP66			
Impact resistance (IK)	IK09			
Luminaire output (flux)	Up to 20,200lm	Up to 29,700lm	Up to 59,400lm	Up to 89,100lm
Colour temperature	Neutral white 740			
Nominal voltage	220-240V – 50-60Hz 277V – 50-60Hz 347-480V – 50-60Hz			



UL 1598
CSA C22.2
No. 250.0



KEY ADVANTAGES

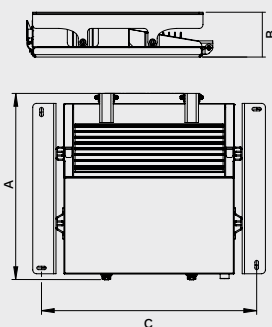
- > Flexibility: modular approach with wide range of lighting distributions
- > High quality, robust materials
- > Designed for long-lasting performance
- > Tool-free access for easy maintenance
- > Made of high-grade anti-corrosive stainless steel
- > Optimised thermal dissipation that results in higher photometrical performance

DIMENSIONS

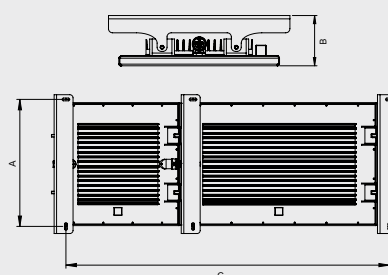
TFLEX STS	BASE HD40	MODULE 40	MODULE 60	MODULE 100	COMBI 40	COMBI 60	COMBI 100
A	481mm 19"	402.5mm 16"	402.5mm 16"	402.5mm 16"	440mm 17.32"	440mm 17.32"	440mm 17.32"
B	116mm 5"	122mm 4.8"	122mm 4.8"	122mm 4.8"	122mm 4.8"	122mm 4.8"	122mm 4.8"
C	556mm 22"	392mm 15.4"	622mm 24.4"	1014mm 40"	1016.4mm 40"	1246.4mm 49"	1641.4mm 65"
KG	12kg 26lbs	12.3 kg 27.1 lbs	16.2 to 17.3kg 37 to 38.1lbs	26.8 to 28kg 59 to 61.6lbs	25kg 55lbs	28.9 to 30kg 63 to 66lbs	39.8 to 41kg 87 to 90.2lbs

Weight and dimensions may vary according to the configuration. Please consult us.

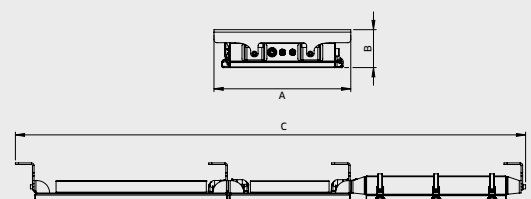
TFLEX STS BASE 40



TFLEX STS MODULE



TFLEX STS COMBI



TFLEX LINE



MAIN APPLICATIONS



TUNNELS &
UNDERPASSES

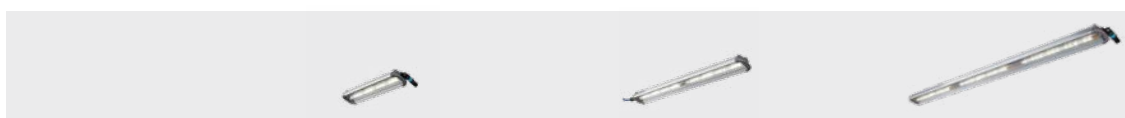
The complete solution for continuous tunnel lighting

TFLEX LINE has been developed as the continuation of the TFLEX tunnel solution, offering a continuous LED line designed to provide perfect visual guidance in the most complex tunnel zones with maximum efficiency.

With its slim-line design and linear-shaped light sources, TFLEX LINE is the perfect replacement for fluorescent tubes. Its improved photometric engines lead to unrivalled visual performance, creating perfect light uniformity everywhere in the tunnel while significantly reducing energy consumption.

This continuous LED line is available in various lengths with multiple photometric distributions, making it suitable for any kind of tunnel project.

TFLEX LINE is a complete solution, available with integrated connectors and a set of preassembled cables in custom lengths to fit any tunnel length and geometry.



TFLEX LINE	60	120	200
Ingress protection (IP)	IP66/69		
Impact resistance (IK)	IK08		
Luminaire output (flux)	Up to 5,500lm	Up to 11,100lm	Up to 17,600lm
Colour temperature	Neutral white (740)		
Nominal voltage	120-277V – 50-60Hz 220-240V – 50-60Hz 347-480V – 50-60Hz		



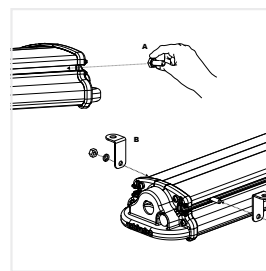


KEY ADVANTAGES

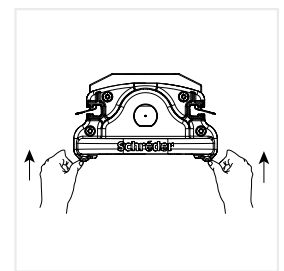
- > High visual comfort through continuous line lighting
- > Various lengths for continuous line installation
- > Excellent uniformity and significant energy savings
- > Two electrical circuits for enhanced dimming possibilities, optimised power factor and longer lifespan
- > Remote gear boxes for versatile mounting
- > Designed for long-lasting performance

DIMENSIONS | MOUNTING

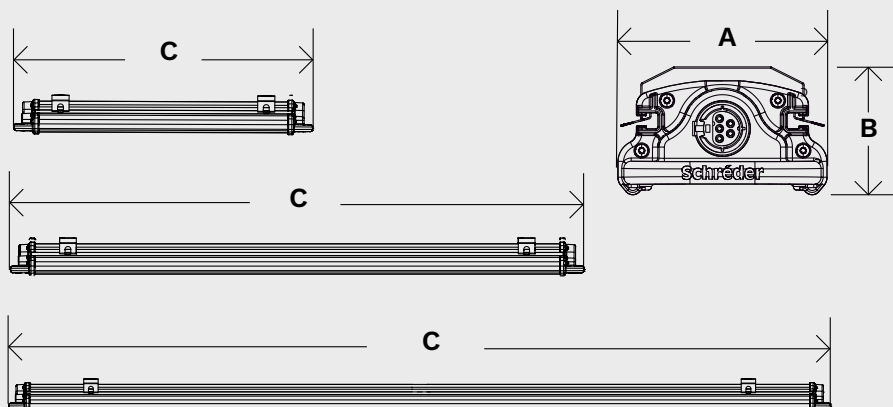
TFLEX LINE	60	120	200
A	130mm 5.1"	130mm 5.1"	130mm 5.1"
B	76.6mm 3.0"	76.6mm 3.0"	76.6mm 3.0"
C	611mm 24.1"	1200mm 47.2"	2000mm 78.7"
KG	3.4kg 7.5lbs	5.9kg 13.0lbs	9.6kg 21.0lbs



L-SHAPED BRACKETS

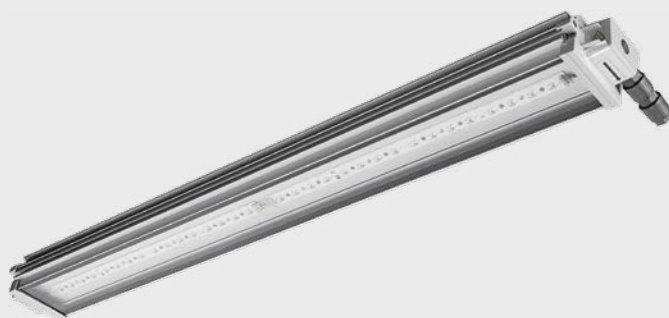


CLIP MOUNTING



CONTILED

MAIN APPLICATIONS



Continuous LED line for tunnel lighting

CONTILED is designed to provide a beneficial alternative to luminaires fitted with fluorescent lamps for continuous line lighting in tunnels and underpasses.

It not only provides the required lighting levels with significant energy savings but also offers great visual comfort to guide motorists safely.

CONTILED is an IP 66 sealed optical unit, offering variable combinations of modules equipped with 8 to 64 LEDs and various optics, to be combined with a remote driver box. It has been designed to meet the specific needs of many different tunnel applications.

The LED modules are located on an internal slider, which can be easily removed, allowing replacement at the end of its service life in order to take advantage of future technological improvements.

		
CONTILED	1	2
Ingress protection (IP)	IP66	
Impact resistance (IK)	IK08	
Luminaire output (flux)	Up to 9,700lm	Up to 19,400lm
Colour temperature	Neutral white 740	
Nominal voltage	120-277V – 50-60Hz 220-240V – 50-60Hz 347V – 50-60Hz	



UL 1598
CSA C22.2
No. 250.0



KEY ADVANTAGES

- > High visual comfort through continuous line lighting
- > Flexible solution: extruded aluminium profile to adjust number of LEDs for tunnel requirements
- > Maximised savings in energy and maintenance costs
- > Remote gear boxes for versatile mounting
- > Control system can be integrated into a tunnel backbone system

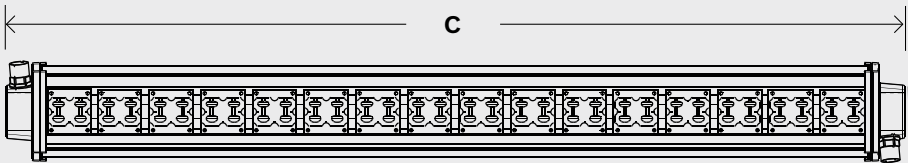
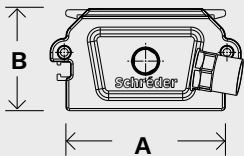


DIMENSIONS | MOUNTING

CONTEILED	1	2
A	133mm 5.2"	133mm 5.2"
B	71mm 2.8"	71mm 2.8"
C	618mm 24.3"	1218mm 47.9"
KG	3.6kg 15.4lbs	7.2kg 30.8lbs



CONTEILED is designed for surface mounting with dedicated adjustable brackets.



GL2 COMPACT



MAIN APPLICATIONS



TUNNELS &
UNDERPASSES



INDUSTRIAL
HALLS &
WAREHOUSES

**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 high resistance to water, dust ingress and impacts.

The photometry of GL2 COMPACT can be either symmetrical or asymmetrical to adapt to the tunnel layout. This lighting solution offers 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.

GL2 COMPACT				
	1	2	3	5
Ingress protection (IP)	IP66			
Impact resistance (IK)	IK08			
Luminaire output (flux)	Up to 6,900lm	Up to 13,800lm	Up to 20,600lm	Up to 34,300lm
Colour temperature	Neutral white 740			
Nominal voltage	220-240V / 120-277V / 347-480V 50-60Hz			
   UL 1598 CSA C22.2 No. 250.0				

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
- > Two electrical circuits for enhanced dimming possibilities, optimised power factor and longer lifespan
- > On-site adjustment for optimal photometry

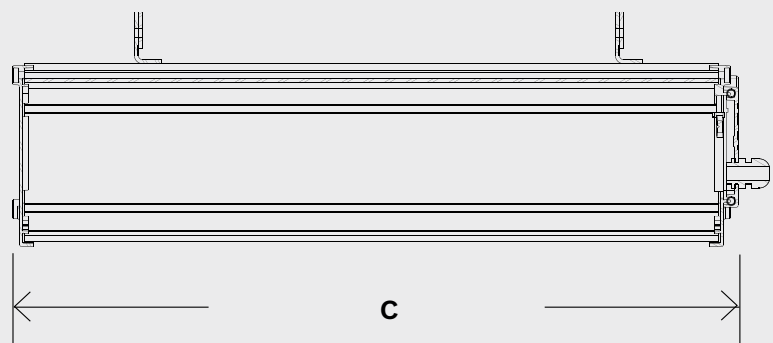
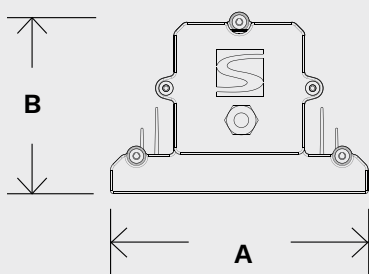


DIMENSIONS | MOUNTING

GL2 COMPACT	1	2	3	5
A	193mm 7.6"	193mm 7.6"	193mm 7.6"	193mm 7.6"
B	137mm 5.4"	137mm 5.4"	137mm 5.4"	137mm 5.4"
C	343mm 13.7"	473mm 18.6"	543mm 21.3"	943mm 36.2"
KG	4.7kg 10.3lbs	5.7kg 12.5lbs	6.5kg 14.3lbs	12kg 26.5lbs



GL2 COMPACT is proposed with various direct and swivelling mounting options.



FV32 LED



MAIN APPLICATIONS



A flexible tool to light all areas of a tunnel

FV32 LED provides flexible solutions to meet the tunnel lighting requirements for different enclosed areas.

A wide range of photometric distributions make the FV32 LED range the ideal instrument for lighting town and motorway tunnels or underpasses.

The extruded aluminium profile enables the number of LEDs to be adjusted in multiples of 8, starting from 16 up to a maximum of 240 LEDs.

Drivers and electrical connections are integrated into the luminaire. The protector opens to give tool-free access to the components when the luminaires are installed.

FV32 LED	0	1	2	3
Ingress protection (IP)	IP66			
Impact resistance (IK)	IK08			
Luminaire output (flux)	Up to 8,800lm	Up to 17,700lm	Up to 35,400lm	Up to 53,500lm
Colour temperature	Warm white (730) or Neutral white (740)			
Nominal voltage	220-240V - 50-60Hz			
  UL 1598 CSA C22.2 No. 250.0				

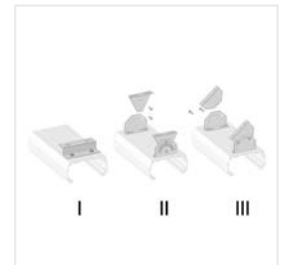
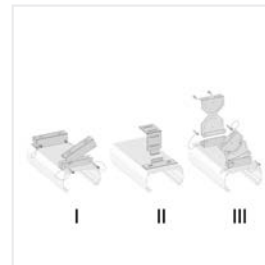


KEY ADVANTAGES

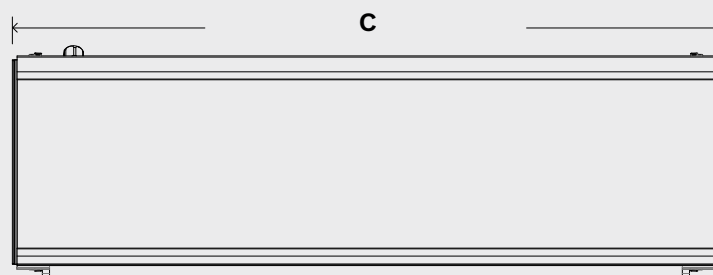
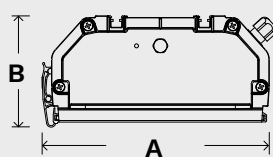
- > Adapted to a wide range of different tunnel applications to provide safety at all times
- > LensoFlex®2 and ReFlexo™ (counter beam lighting) photometric engines to provide flexible solutions
- > High level of protection against corrosion, impacts and vibrations
- > Various inclination possibilities on-site for optimal photometry
- > Control system: can be adapted to customer requirements or integrated into a tunnel backbone system

DIMENSIONS | MOUNTING

FV32 LED	0	1	2	3
A	285mm 11.2"	285mm 11.2"	285mm 11.2"	285mm 11.2"
B	135mm 5.3"	135mm 5.3"	135mm 5.3"	135mm 5.3"
C	308mm 12.1"	560mm 22.0"	888mm 35.0"	1265mm 49.8"
KG	6kg 13.2lbs	10kg 22.0lbs	17kg 37.4lbs	23kg 50.6lbs



FV32 LED can be mounted using specific brackets that prevent galvanic corrosion: 'Z'-shaped (I), swivelling (II) or swivelling and adjustable brackets (III).



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