



ISOLED KNOWLEDGE

**T8 -  
HIGHLINE  
TUBES**

**ISOLED**<sup>®</sup>

CUSTOMISED LIGHT SOLUTIONS



## T8 ISOLED® HIGHLINE TUBES

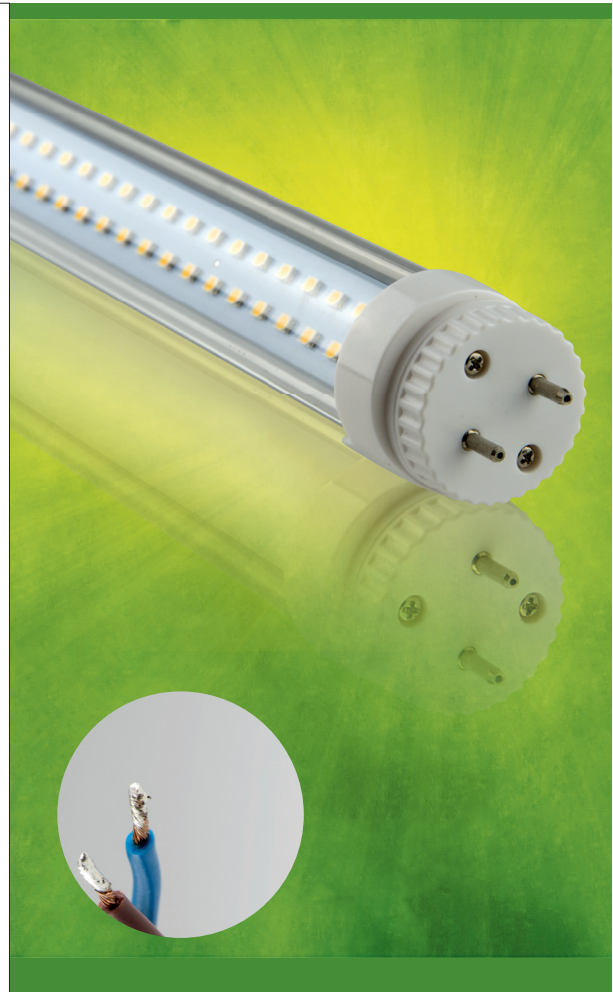
### Progress through Innovation

ISOLED® consists of lateral thinkers and motivated doers who drive forward technical progress in LED technology and thus create industry trends. As an innovative company, our „100% LED“ seal symbolises our commitment to this economically and ecologically efficient light source.

Due to our market presence and customer proximity, we understand the demands and wishes of our customers and partners concerning pioneering LED lighting solutions. New LED lighting concepts and solutions arise from the close cooperation and intensive exchange between Product Management and Research & Development.

### T8 ISOLED® Highline Tubes - a symbol of sustainability!

The T8 ISOLED® Highline tubes with 3-pin connector cable perfectly exemplify the innovative power of our company and constitute a symbol of the LED technology sustainability. Compared with fluorescent lamps with ballasts (conventional, low loss or electronic ballast) and to retrofitted LED tubes, ISOLED® Highline tubes offer far superior qualitative and economic value to our customers.



### T8 ISOLED® Highline Tube - Fully-fledged light with its own declaration of conformity

The T8 ISOLED® Highline Tube replaces both conventional fluorescent lamps as well as LED retrofit tubes. However, it can also be used as a full-fledged and independent light with the corresponding declaration of conformity

#### Rationale:

The side pins (rotatable to favour light orientation) are contactless and serve only tube fixation purposes (important for retrofitting or installation in baths). The power is supplied via the integrated 3-pin connector cable. The metallic heat sink is grounded through the grounding conductor of the 3-pin connector cable.

This eliminates interference with the existing light structure during retrofitting or replacement of fluorescent or LED retrofit tubes by T8 ISOLED® Highline Tubes. The conformity of components remains unaffected.





TUBE PERFORMANCE COMPARISON		HIGH ENERGY EFFICIENCY WITH T8 ISOLED® HIGHLINE TUBES				
		FLUORESCENT LAMP WITH KVG**	FLUORESCENT TUBE WITH VVG***	FLUORESCENT LAMP WITH EVG****	LED RETROFIT TUBE (KVG / VVG REMAINS CONNECTED)	T8 ISOLED® HIGHLINE TUBE WITHOUT VG* WITH 3-POLE CONNECTING CABLE
T8 Tube 120 cm (26 mm) 36 Watt	1-flame	36 W + 8 W (KVG) = <b>44 W</b>	36 W + 5 W (VVG) = <b>41 W</b>	36 W + 3 W (EVG) = <b>39 W</b>	22 W + 2 W (VG*) = <b>24 W</b>	<b>22 W</b>
	2-flame	2 x 36 W + 14 W (KVG) = <b>86 W</b>	2 x 36 W + 9 W (VVG) = <b>81 W</b>	2 x 36 W + 5 W (EVG) = <b>77 W</b>	2 x 22 W + 3 W (VG*) = <b>47 W</b>	<b>44 W</b>
T8 Tube 150 cm (26 mm) 58 Watt	1-flame	58 W + 13 W (KVG) = <b>71 W</b>	58 W + 8 W (VVG) = <b>66 W</b>	58 W + 5 W (EVG) = <b>63 W</b>	33 W + 2 W (VG*) = <b>35 W</b>	<b>33 W</b>
	2-flame	2 x 58 W + 23 W (KVG) = <b>139 W</b>	2 x 58 W + 14 W (VVG) = <b>130 W</b>	2 x 58 W + 9 W (EVG) = <b>125 W</b>	2 x 33 W + 3 W (VG*) = <b>69 W</b>	<b>66 W</b>
Panel with 4 x T8 Tubes 60 cm (26 mm), 18 wates		4 x 18 W + 12 W (KVG) = <b>84 W</b>	4 x 18 W + 9 W (VVG) = <b>81 W</b>	4 x 18 W + 5 W (EVG) = <b>77 W</b>	4 x 9 W + 3 W (VG*) = <b>39 W</b>	<b>36 W</b>

VG\* ballast; KVG\*\* conventional ballast; VVG\*\*\* low-loss ballast; EVG\*\*\*\* electronic ballast and integrated starter

## T8 ISOLED® Highline Tube - Power supply via 3-pin cable

A very unique feature of the T8 ISOLED® Highline Tube is its 3-pin power supply connection, which makes it truly innovative and sustainable LED lighting solution.



Fig.: Pins are without contact- no danger when changing tubes!

### T8 ISOLED® Highline Tube - ballasts are out

T8 ISOLED® Highline Tubes eliminate the disadvantages typically associated with ballasts. Thanks to its 3-pin connector cable, the T8 ISOLED® Highline tube connect directly to the grid, making ballasts redundant.

- No ballast-related power loss- achieve a higher energy efficiency
- Eliminate the annoying ballast hum.
- No grid-related 50Hz flicker!
- Less Watts- more lumens!

### Diff erent service life: ballasts vs. LED bulbs

LED lamps (retrofit tube) and ballast offer different service lives. If you convert fluorescent tubes to LED retrofit tubes, it should be recalled that the ballast must be replaced at a later date. On the other hand, no subsequent ballast replacement is required when changing to T8 ISOLED® Highline Tubes. Simply because the ballast is no longer necessary.

### In summary:

With the T8 ISOLED® Highline Tube, customers enjoy the desired illumination throughout the life of the tube without unnecessary maintenance work.





## T8 ISOLED® Highline Tubes - Pins and Clips

Conventional fluorescent tubes are powered via their side-pins. That is to say, the tube holder also serves the power-supply of the lamp.

On the other hand, T8 ISOLED® Highline Tubes featuring a 3-pin connection cable can be mounted as independent lights.

- » in the tube holders (thanks to the contactless and rotatable pins),
- » attached with clips to the building material in hassle-free fashion, or
- » be installed by rope suspension.



Fig.: Functionality combined with aesthetics

## Critical review of the safety aspects of commercial LED retrofit tubes

T8 ISOLED® Highline Tubes connect to the mains via a 3-pin connector cable. Commercial LED retrofit tubes, however, are powered via pins from one or both sides. To prevent accidents when installing LED retrofit tubes, it is extremely important to observe

- » the inserting direction,
- » the marks, as well as the
- » safety instructions on the tube ends.

**Otherwise, there is danger of electric shock.**

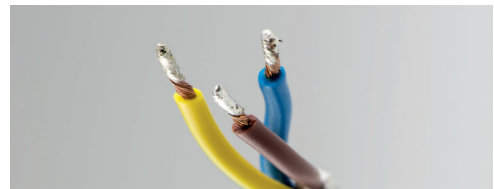
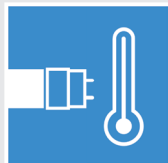


Fig.: The T8 ISOLED® Highline tube eliminates the risk of accidental electric shock due to the 3-pole connecting cable.



PC  
850°C



PC 30J  
IK10



G13  
Ø 26 mm

## T8 ISOLED® Highline Tubes are sturdy and shatterproof

The tube covering of T8 ISOLED® Highline Tubes is made of polycarbonate and, therefore, offers a much higher strength than those made of acrylic or PVC.

The cover provides a minimum shock resistance of 30 joules. This is roughly equivalent to the force that would be exerted by a 6-kg object dropping from 0.5 m height on the cover.

The melting temperature of polycarbonate is 850°





**T8 ISOLED® Highline Tube - No drivers needed**


Unlike LED retrofit tubes, T8 ISOLED® Highline Tubes require no drivers. In turn, this reduces electronics to a minimum and with it the associated electromagnetic radiation.

**T8 ISOLED® Highline Tube - No hazardous waste**

Unlike fluorescent tubes, T8 ISOLED® Highline Tubes constitute no hazardous waste and can be properly disposed of as electronic waste.




Example of use: Underground lights with T8 ISOLED® Highline Tubes

		RETROFIT OF TRADITIONAL T8 FLUORESCENT TUBES	
		REGULAR T8 LED TUBE RETROFIT	T8 LED TUBE WITH 3-PIN CONNECTOR CABLE FROM ISOLED®
	with KVG or VVG	Bridge starter Workload: about 3 minutes Optional Remove or disconnect KVG/VVG and bridge Workload: about 10 minutes	Disconnect the light body incl. ballast from the mains and connect directly the T8 ISOLED® Highline Tube. Workload: max. 10 Mins
	with remote EVG	Remove or disconnect the EVG and bridge Workload: about 10 minutes	

Note: LED retrofit tubes that should function smoothly with the remaining ECG LED were brought during a certain period. In our own long-term tests, we have uncovered that this might lead to a reduction in the service life of the electronic ballasts. For this reason, we recommend that you wait for further test reports and experiences.



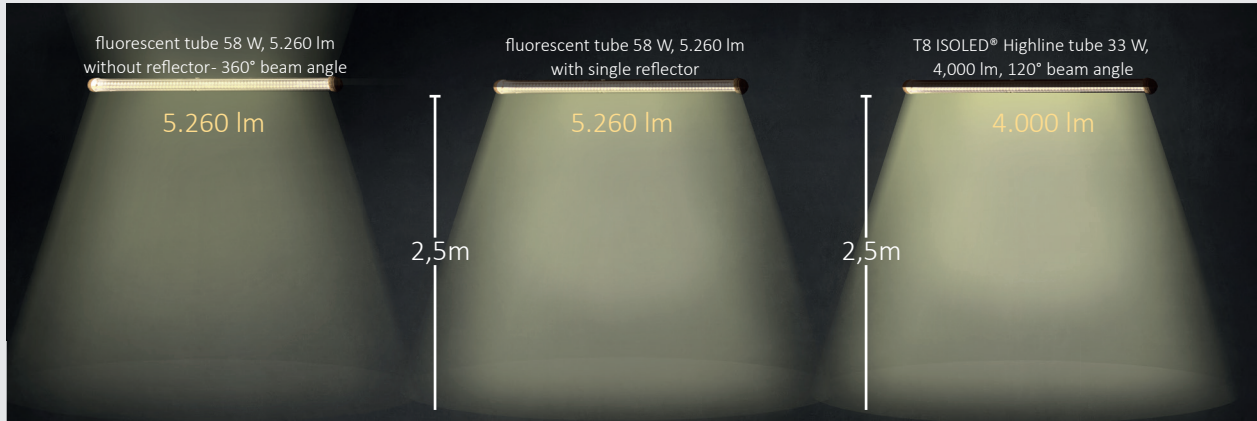
		ADVANTAGES AND DISADVANTAGES OF RETOOLING	
		COMMERCIALY AVAILABLE T8 LED TUBE RETROFIT	T8 ISOLED® HIGHLINE TUBE WITH 3-PIN CONNECTION CABLE
Disadvantages	with KVG or VVG	<ul style="list-style-type: none"> <li>» Power loss, if the KVG/VVG was neither removed nor bridged.</li> <li>» Voltage peaks (especially when switching off) of the ballast damage the LED electronics and reduce the service life.</li> <li>» High reactive power in the mains supply due to the ballast not being removed or bridged.</li> <li>» The service life of ballasts is generally shorter than that of LEDs. This means that ballasts must be replaced prematurely.</li> <li>» G13 base (made of plastic) in the luminaire body is not approved for 230 V continuous voltage (conventional fluorescent tubes are always fed with 110 V in continuous operation).</li> <li>» The lamp body is modified or an intervention is made and therefore conformity is no longer given. New approval/acceptance is absolutely necessary!</li> <li>» RISK: if a conventional fluorescent tube is used instead of an LED tube, an electric shock may occur!</li> </ul>	<ul style="list-style-type: none"> <li>» Slightly higher workload</li> </ul>
	with removed ECG	<ul style="list-style-type: none"> <li>» G13 socket (made of plastic) in the luminaire body is not approved for 230 V continuous voltage (conventional fluorescent tubes are only fed with 110 V in continuous operation).</li> <li>» The body of the lamp is modified or an intervention is made and therefore conformity is no longer given. New approval/acceptance is absolutely necessary!</li> <li>» RISK: if a conventional fluorescent tube is used again instead of an LED tube, an electric shock or an explosion may occur!</li> </ul>	
Advantages	with KVG or VVG	<ul style="list-style-type: none"> <li>» Fast exchange (if only the starter is bypassed)</li> <li>» Remaining KVG/VVG serves as surge protection during operation</li> <li>» Less Watt - more Lumen</li> <li>» Significant cost saving</li> </ul>	<ul style="list-style-type: none"> <li>» No additional, unnecessary power consumption through ballasts</li> <li>» No power loss of the ballast unit</li> <li>» No 50 Hz flickering (ballast is no longer connected to the mains)</li> <li>» No noise pollution due to the humming of the ballast</li> <li>» T8 ISOLED® Highline tube is considered a full LED luminaire</li> <li>» No intervention in the lamp body</li> <li>» Conformity is maintained</li> <li>» No additional acceptance or approval required</li> <li>» The 3-pin connection cable additionally grounds the metallic heat sink via the protective conductor.</li> <li>» Retrofitting to fluorescent tubes is possible without risk.</li> <li>» Fixation with pins in tube holder possible without changes</li> <li>» Can be attached directly to the T8 ISOLED® Highline tubes using clips.</li> <li>» Less Watt - more Lumen</li> <li>» Significant cost saving!</li> </ul>
	with removed ECG	<ul style="list-style-type: none"> <li>» No power loss of the ballast unit</li> <li>» Less Watt - more Lumen</li> </ul>	

**When converting to the T8 ISOLED® Highline tube, NO intervention in the existing luminaire is required. Its conformity remains unaffected and therefore remains valid.**





**Tube comparison - 2.5 m height, darkened hall**



- Left:** Fluorescent tube 58 W, 5,260 lm, 360° beam angle
- Middle:** fluorescent tube 58 W, 5,260 lm with single reflector
- Right:** T8 ISOLED® Highline tube 33 W, 4,000 lm, 120° beam angle

The T8 ISOLED® Highline tube with 33 W achieves the same luminous intensity of 120 lux directly below the luminaire as the 58 W fluorescent tube with 5,260 lm and the use of a reflector.

**Note:** The human eye perceives the light of the LED tube as brighter, because in contrast to the fluorescent tube, the 50 Hz mains flicker is eliminated.

The innovative range of T8 ISOLED® Highline tubes with 3-pole connection cable in all versions as well as all technical data and specifications can be found at [www.ISOLED.de](http://www.ISOLED.de) or on the ordering platform [shop.ISOLED.de](http://shop.ISOLED.de).

**Of course, our employees are always at your disposal for any inquiries!**

**T8 ISOLED® HIGHLINE TUBE WITH 3-POLE CONNECTION CABLE - PROGRESS THROUGH INNOVATION!**

- |   |   |   |
|---|---|---|
| Conversion fast, gentle on building materials and sustainable                       | Conformity as a fully-fledged LED luminaire- no approvals for conversion                      | Constant light output, as no 50 Hz mains flicker  |
| Sustainable profitability due to high energy efficiency and fast amortisation       | Less Watt- more Lumen   | Grounding of the metallic heat sink via the protective conductor of the 3-pole connection cable |
| Excellent performance values  | High economic and ecological energy efficiency  | Rotatable pins serve to align the light beam  |
| TÜV Certification   | No power loss through ballasts and therefore less power consumption                           | Pins without contact- no risk of accidents  |
| 24 months full warranty   | No noise pollution due to humming of the ballasts   | Robust and shatterproof polycarbonate tube cover  |
| Electronics and electromagnetic radiation reduced to a minimum- no drivers required | Mounting with clips or wire suspension- Fixing in tube brackets possible without modification | No hazardous waste  |