



# Quick Installation Guide

**Philips InteGrade LED engine system**

for indoor environments and

refrigerated cabinets (-30 to +30°C / -22 to +86°F)



**PHILIPS**

# Important

Please take the time to read this installation guide before you install this Philips LED product and driver. The guide contains important information regarding installation and operation.

## Warranty

Warranty only applies when the appropriate Philips LED driver and Philips cabling (as described in this guide and leaflets) are used. Please contact your local sales representative for complete information regarding our limited warranty.

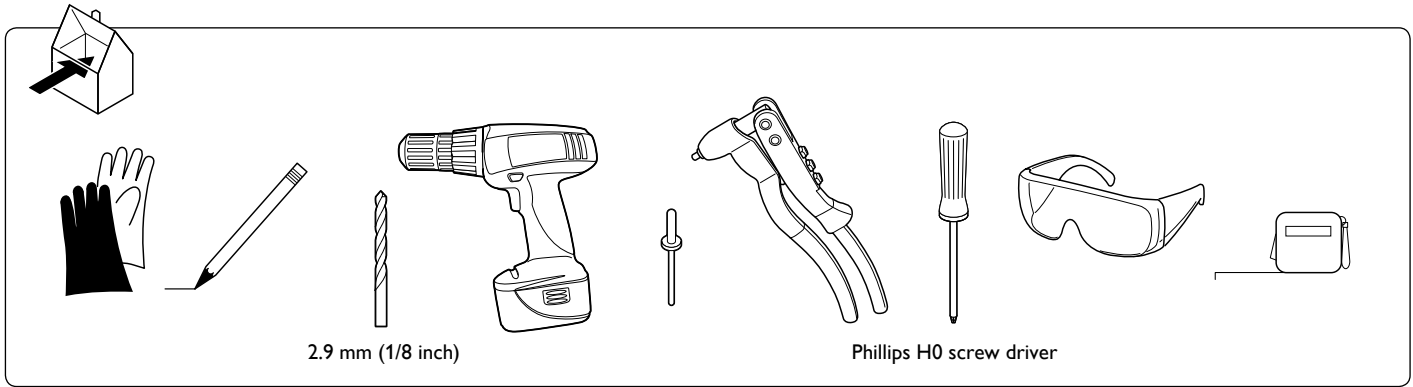
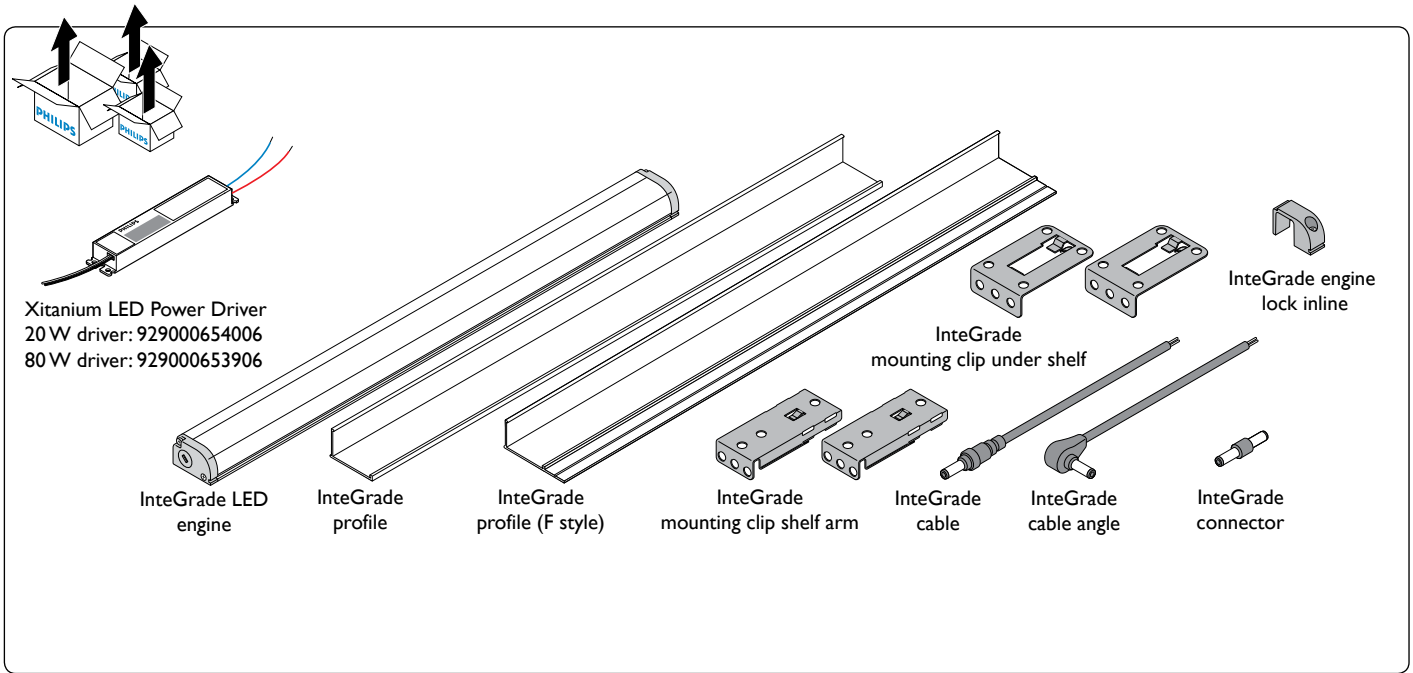
## Warnings

- The installation guide does not supersede federal, state, local or (inter)national laws, rules, regulations, ordinances, and codes that may apply for electrical installations.
- This Philips LED product and LED driver must be installed by a professional electrician in accordance with the applicable and appropriate electrical codes and the instructions provided by Philips.
- Please note that the driver should be built into an enclosure (Tcase max. 70 °C / 158 °F).
- This Philips LED product is designed to be connected to a circuit from a class 2 power source (e.g.: Philips Xitanium LED power driver) with energy-limited supply.
- This is a 24V DC product.
- Do not connect this LED product to mains voltages.
- To allow for variance in the installation, it is not recommended to load the power driver beyond 90% of its rated maximum power. The energy consumption of the engine is a nominal value, with an estimated 20% deviation.
- Before installation, maintenance or cleaning, always first switch off or disconnect the power and follow the appropriate safety procedures.
- Before removing any lens covers or fluorescent lamps, always first switch off or disconnect the mains power to the lighting system.
- Take care not to damage the existing (heating) wiring if the LED product is installed in a freezer.
- Do not use tape to fix this InteGrade LED product or LED profile in position; please use the appropriate mounting clips.
- Please note that the colors of the wires in existing designs, such as refrigeration systems or cabinets, may differ. The position of the (original) ballast may also differ.
- Do not make sharp bends with electrical wires.
- Due to the variety of designs and brands in which the Philips LED products can be installed, you may need to use customized mounting accessories to fit the specific design you are using. If you require further support, please contact your local Philips sales organization.
- To prevent unwanted tripping caused by the inrush current of the LED driver, an MCB (mini circuit breaker) / fuse (slow blow) of at least 6 A must be installed.
- Philips advises using a zero-crossing/switching solid-state relay to reduce the inrush current peak.
- This product is designed for damp and dry locations only. Do not use this product in any location that may come into direct contact with moisture.

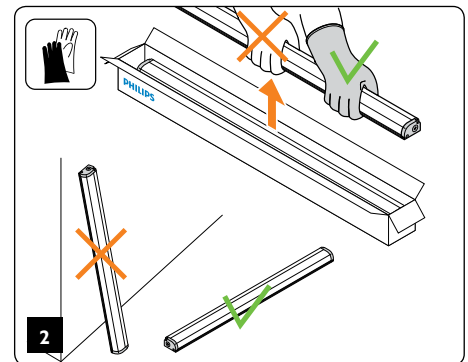
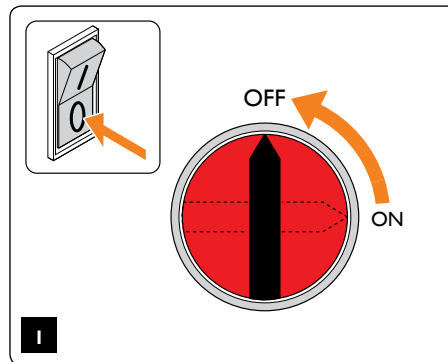
## Cleaning

- Use a clean, damp cloth and a mild cleaning agent. Failure to do so may result in damage to the LED product due to residue.
- Do not use abrasive cleaners, scouring pads, bleach or cleaners containing chlorine because they can scratch and damage the LED product.

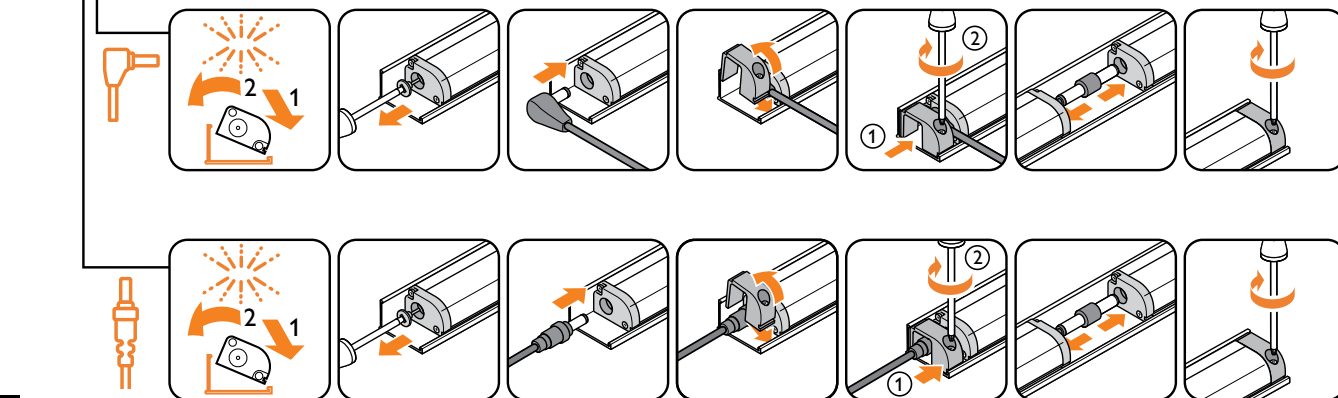
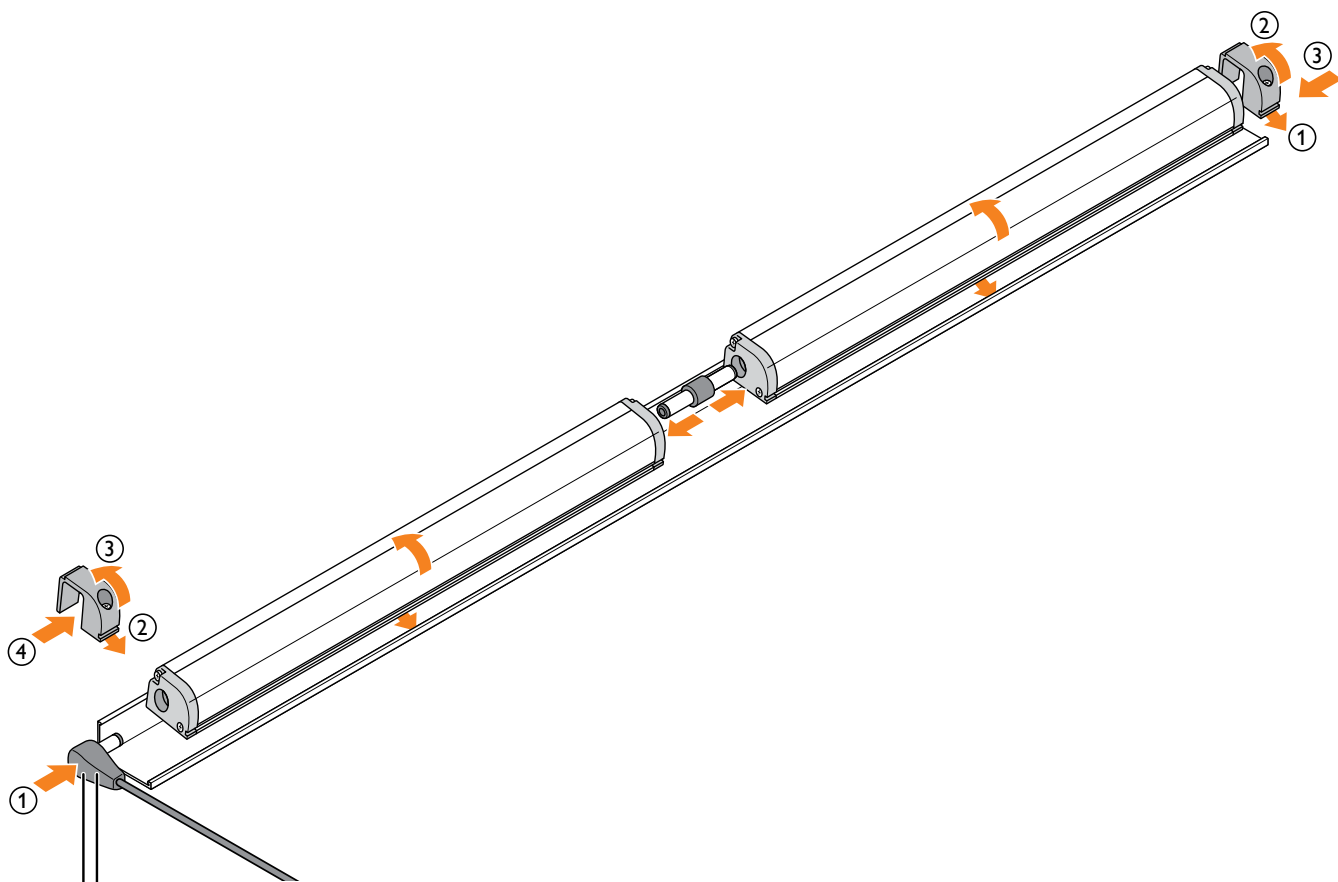
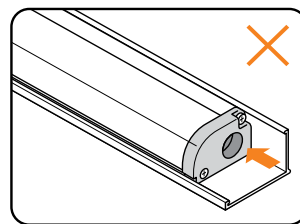
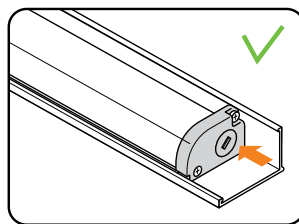
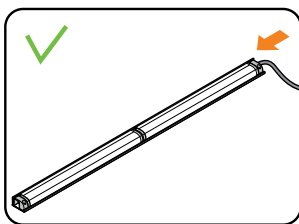
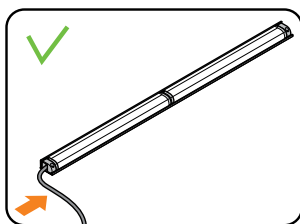
# Products and tools



## Start

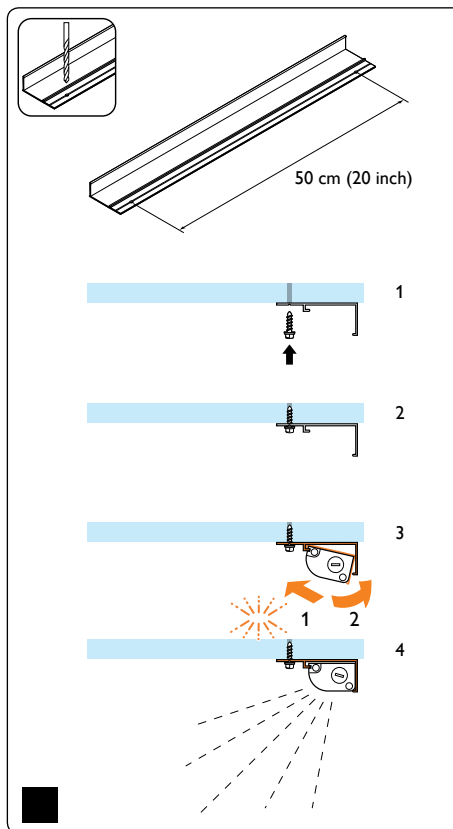
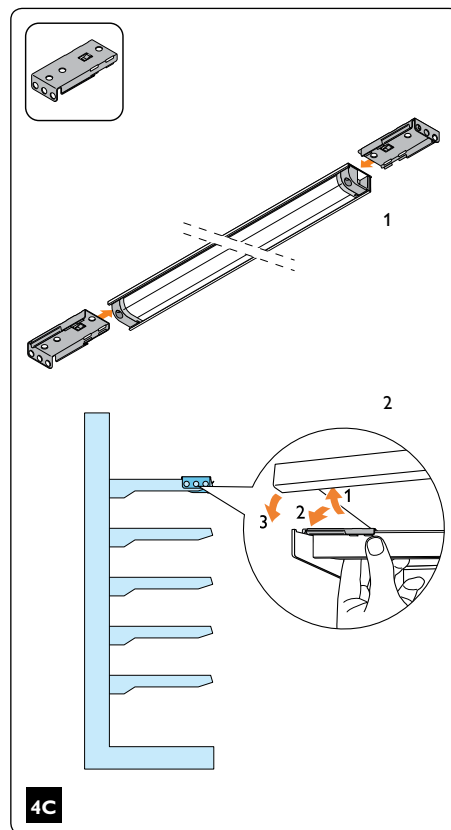
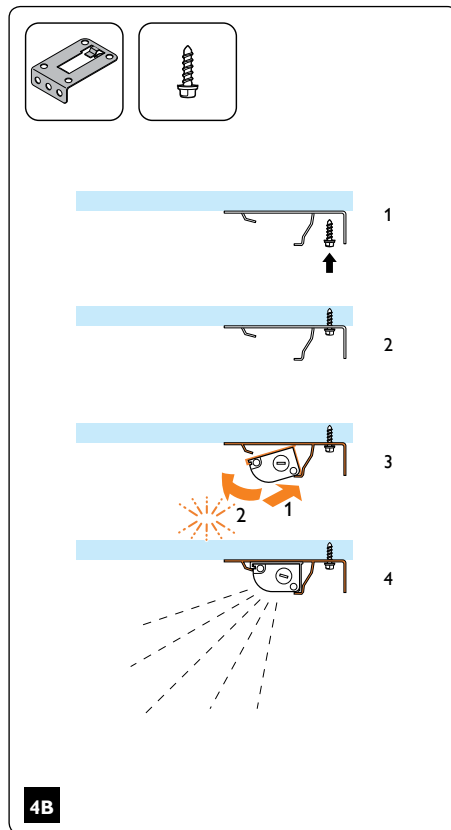
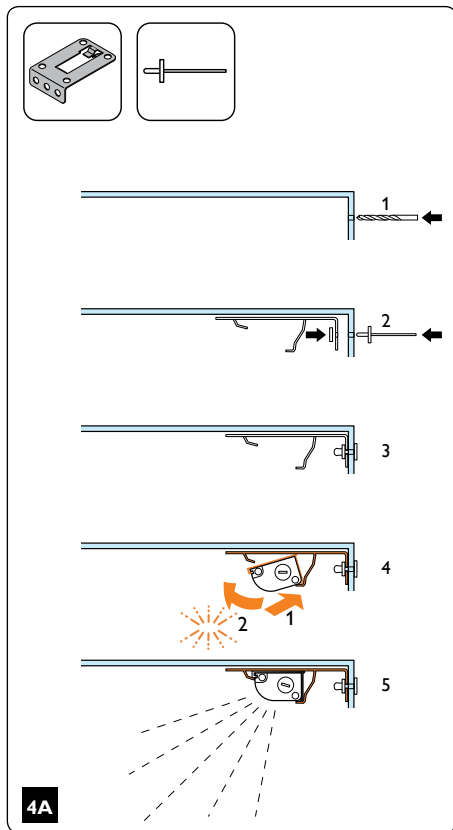


# Connecting the LED InteGrade engines in the profile



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# Installation examples with various InteGrade mounting clips and profiles

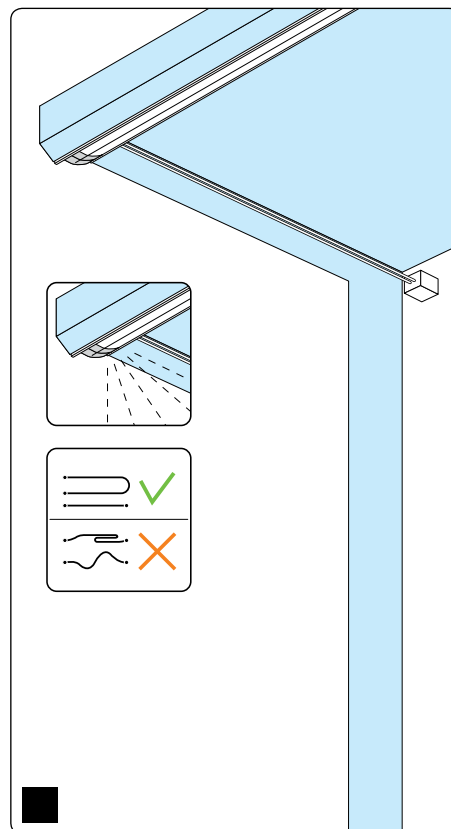


Attach a single profile beneath two connected engines in order to ensure stability.



Never attach separate profiles beneath individual connected engines.

When using the 2 m (79 inch) F style profile please ensure it is properly fastened. Engines can then be placed in infinite lines BUT should be powered in accordance with the instructions in this guide. Each powered section should be locked in place by two "lock in-line's" to ensure proper contacting of the engines and power cables.

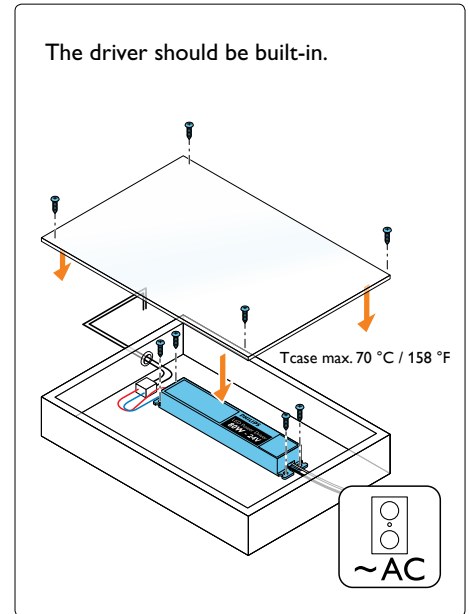


# Power driver and wiring

- To allow for variance in the installation, it is not recommended to load the power driver beyond 90% of its rated maximum power
  - Xitanium LED driver 20 W (logistic code 929000654006) max 18 W
  - Xitanium LED driver 80 W (logistic code 929000653906) max 72 W
- The maximum number of engines that can be connected depends on the ambient temperature of the InteGrade engine in the application (< 10 °C and > 10 °C / < 50 °F and > 50 °F)
- Use Philips InteGrade LED power cable of 1 m (39 inch) or 2.5 m (98 inch)
- If InteGrade power cables are extended, only use 0.75 mm<sup>2</sup> (AWG 18) or thicker cable up to a length of max 10 m (32 feet) between driver and Philips LED power cable
- If you wish to make any other configuration, please contact Philips.

## Parallel connection

- You can make any combination of 140 and 575 mm (6 and 23 inch) engines but:
  - do not exceed the maximum total load on one driver and
  - stay within the boundaries of the maximum load allowed for series connection, see tables below!



## Series connection with Xitanium 20 W driver

Xitanium 20 W driver (logistic code 929000654006)	Ambient temperature	Maximum quantity of InteGrade engines 140 mm (6") and/or 575 mm (23")
I	< 10 °C / < 50 °F	3
I	> 10 °C / > 50 °F	3

## Series connection with Xitanium 80 W driver\*

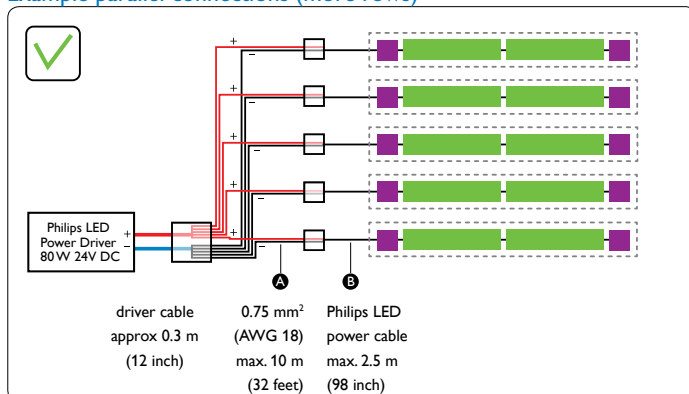
Xitanium 80 W driver (logistic code 929000653906)	Ambient temperature	Maximum quantity of InteGrade engines 140 mm (6") and/or 575 mm (23")
I	< 10 °C / < 50 °F	7
I	> 10 °C / > 50 °F	12

\* In case only InteGrade LED engines 575 mm / 23" are used with Xitanium LED driver 80 W the maximum length in series connection can be:

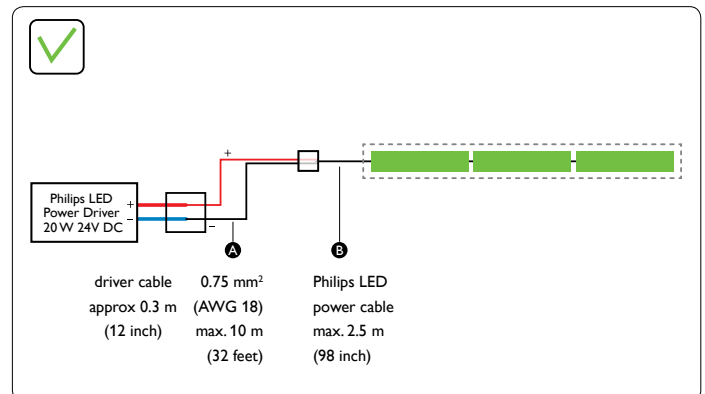
- < 10 °C / < 50 °F up to 4 meter / 13 feet
- > 10 °C / > 50 °F up to 7 meter / 23 feet

## Wiring diagram with Philips InteGrade LED engines

### Example parallel connections (more rows)



### Example series connections (one row)



■ InteGrade LED engine 140 mm (6") ■ InteGrade LED engine 575 mm (23") □ I profile





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