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Observe proprietary notice in accordance with DIN ISO 16016!

English translation

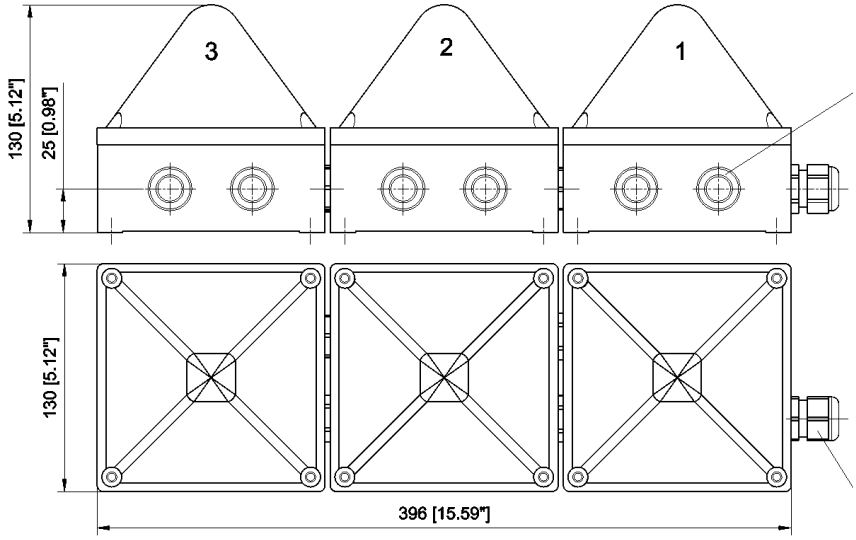
1. Intended use

Quadro LED-TL traffic lights are designed for the optical signaling of e.g. hazardous situations or for status displays of machines and systems. The light signals are generated by LEDs that have a high luminous efficacy and a robust mechanical design.
It is possible to choose between three different operating modes (continuous light, blinking light and flashing light). External control of DC versions is possible.
The devices must only be operated when undamaged and within the specified parameters.
The devices are designed for indoor and outdoor use and are only intended for fixed installation.

2. Scope of delivery

The scope of delivery consists of:
1x Signaling device
1x Quick guide

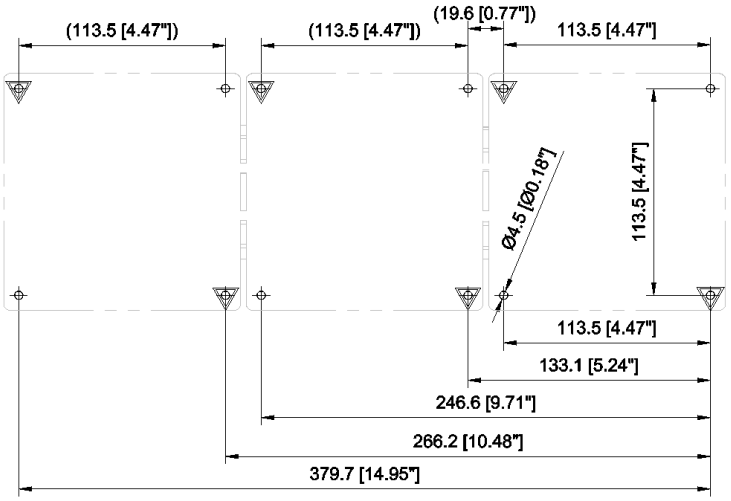
3. Dimensions



M16/ M25 cutout prepared

Suitable fastening material must be used.

Cable gland M20x1,5



Drilling pattern

▽ recommended mounting bores

4 Technical Data

4.1 General

Light intensity *	max. 75 cd (Blondel + Rey)
Light source	4 high-performance LEDs
Service life	> 50,000 h
Duty cycle	100%
Ingress protection	IP 66 (EN 60529)
Impact strength	IK 08 (EN 50102)
Protection class	II
Operating temperature	- 30 °C .... + 55 °C
Storage temperature	- 40 °C .... + 70°C
Relative air humidity	95 %
Cable inlet	1x M20x1,5
Connecting terminals	Cage clamp 0.08 – 2.5mm² / 28 – 14 AWG (solid/ fine stranded)
Housing material	Polycarbonate (PC), light grey RAL 7035
Lens material	Polycarbonate (PC)
Installation position	any
Lens colors	Standard color sequence: red (1), yellow (2), green (3)

* The light intensity may be reduced depending on the lens color and operating mode.

4.2 Electrical data AC version and 230 V DC

Rated voltage range		115 V – 230 V AC				115 V – 230 V DC			
Operation voltage range		90 – 253 V AC				90 – 253 V DC			
Rated frequency		50/ 60 Hz				--			
Rated current RMS [mA] Values apply per stage		yellow, green		Red		yellow, green		Red	
		115 V	230 V	115 V	230 V	115 V	230 V	115 V	230 V
	Flashing light 0.1 Hz	30	30	25	25	18	17	16	15
	Flashing light 0.5 Hz	50	40	40	35	29	20	26	17
	Flashing light 0.75 Hz	65	50	50	40	36	25	30	19
	Flashing light 1 Hz	75	55	55	45	40	30	35	22
	Flashing light 2 Hz	100	75	75	55	60	35	40	25
	Blinking light 1 Hz	50	45	48	40	20	16	17	14
	Blinking light 2 Hz	50	45	48	40	20	16	17	14
	Continuous light	70	65	65	55	25	19	20	17

4.3 Electrical data DC version

Rated voltage range	12 V – 48 V DC					
Operation voltage range	11 V – 60 V DC					
Control input voltage range	11 V – 60 V DC					
Rated current RMS [mA] Values apply per stage	yellow, green			Red		
	12 V DC	24 V DC	48 V DC	12 V DC	24 V DC	48 V DC
Flashing light 0.1 Hz	105	55	30	100	45	25
Flashing light 0.5 Hz	230	120	60	215	100	55
Flashing light 0.75 Hz	270	140	75	265	120	65
Flashing light 1 Hz	320	165	85	305	165	60
Flashing light 2 Hz	450	230	120	430	200	90
Blinking light 1 Hz	280	155	80	260	135	70
Blinking light 2 Hz	280	155	80	260	135	70
Continuous light	390	220	110	360	195	100

5. Commissioning

5.1 Safety information

DANGER - Indicates an unusually high-level hazardous situation. Non-compliance with this warning may result in serious irreversible injury or death.
WARNING - Indicates an unusually high-level hazardous situation. Non-compliance with this warning may result in serious, irreversible or fatal injury.
CAUTION - Indicates a hazardous situation. Non-compliance with this warning may result in minor or moderate injury.

	DANGER - Danger to life due to electric shock Voltage-carrying devices and exposed connection cables may cause electric shocks and serious accidents. ➢ Only trained and authorized electricians may work on electrical connections. ➢ Disconnect all supply lines from mains before installation and secure them against reconnection. Always ensure absence of voltage. ➢ Wait for the discharge phase of 5 minutes for the electrical components. The device should only be opened afterwards. ➢ The operating voltage must only be applied when the housing is firmly closed.
	WARNING - Danger due to unauthorized use of the devices Improper use may lead to serious accidents. ➢ Ensure that the connection cable is protected against pulling and twisting during installation. The devices are only intended for fixed installation.
	DANGER - Danger due to damage to the devices **Non-compliance with the information on the type plate can lead to serious accidents.** ➢ Always observe the information on the type plate when installing and maintaining the devices.
	CAUTION - Risk of injury due to sharp edges or heated components ➢ Wear suitable personal protective equipment (PPE) for installation, assembly or service/maintenance work. ➢ Lay wires well away from sharp edges, corners and internal components; avoid collisions with parts.
	CAUTION - Impairment of vision ➢ Avoid constant, direct glances into the activated lights to prevent impairment of vision. ➢ Unexpected triggering of the flash can lead to startled reactions.

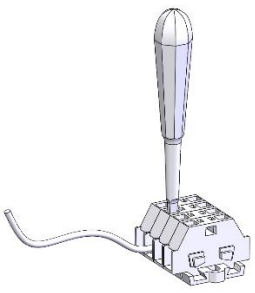
5.2 Assembly and installation

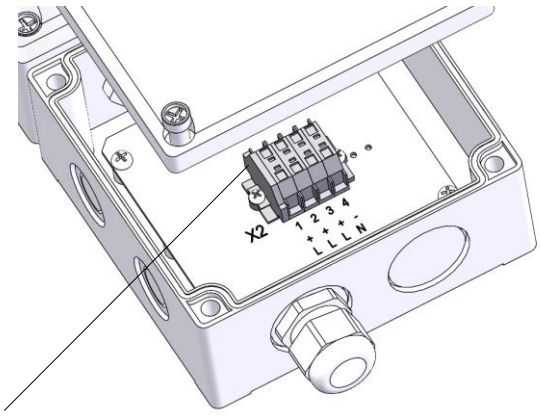
Installation:

➢ Loosen the four cross-head screws in all lenses and remove them upwards.
The holes for mounting the housing are then accessible, for dimensions and the recommended mounting bores see chapter 3. Dimensions.

➢ Perform the electrical connection in the 1st stage housing (red lens) as follows:

Connection of the line



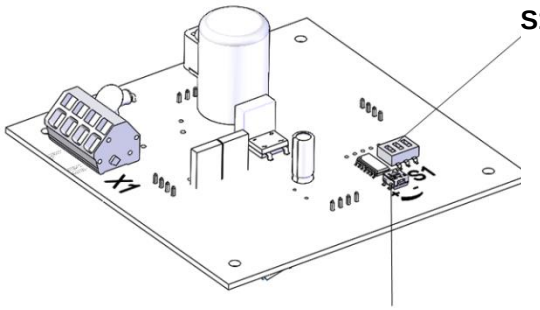


Operating voltage connection

5.2.1 Setting the operating mode

The operating mode can be set as follows on the circuit board in each lens:

AC Version



Light intensity control
(15 - 100%)

S1, Selection of operating mode

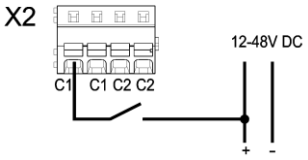
S1			Operating mode No.	
1	**2**	**3**		
OFF	OFF	OFF	1	Flashing light 0.75 Hz
OFF	OFF	ON	2	Flashing light 1 Hz
OFF	ON	OFF	3	Continuous light *****
OFF	ON	ON	4	Blinking light 1 Hz
ON	OFF	OFF	5	Flashing light 2 Hz
ON	OFF	ON	6	Blinking light 2 Hz
ON	ON	OFF	7	Flashing light 0.1 Hz
ON	ON	ON	8	Flashing light 0.5 Hz

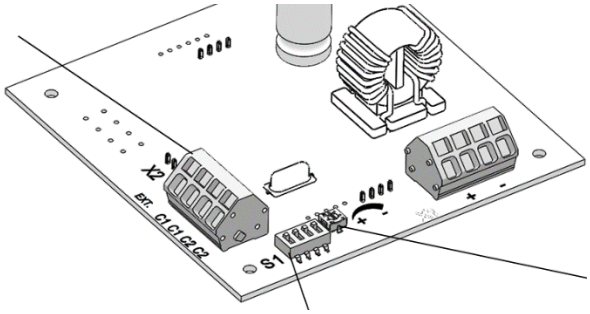
***** Factory setting

DC Version

X2
External control input
(not wired)

Example for control by **C1**





S1, Selection of operating mode

Light intensity control
(15 - 100%)

5.2.2 External control (DC versions)

S1			Operating mode No.		Switchover by …		
1	**2**	**3**			**C1** operating mode No. ...	**C2** operating mode No. ...	**C1 + C2** operating mode No. ...
OFF	OFF	OFF	1	Standby for external control	**3**	**2**	**4**
OFF	OFF	ON	2	Flashing light 1 Hz	**4**	**--**	**4**
OFF	ON	OFF	3	Continuous light *****	**--**	**4**	**4**
OFF	ON	ON	4	Blinking light 1 Hz	**--**	**--**	**--**
ON	OFF	OFF	5	Flashing light 2 Hz	**7**	**6**	**8**
ON	OFF	ON	6	Blinking light 2 Hz	**8**	**--**	**8**
ON	ON	OFF	7	Flashing light 0.1 Hz	**--**	**8**	**8**
ON	ON	ON	8	Flashing light 0.5 Hz	**--**	**--**	**--**

Switch position **S1.4** for external control: ON

***** Factory setting

Note: Devices with DC voltage are equipped with reverse polarity protection. The function is guaranteed if the polarity of the connections is reversed.

- Only cable glands with a degree of protection of at least IP66 should be fitted to the corresponding openings.
- Secure the connecting cables against pulling and twisting during installation.
- Close the device again after connecting the cables.
- Carry out a final functional test to ensure reliable signaling.

6. Alternative color sequences

If other color sequences are required, it is possible to combine individual lights together with the corresponding housing connector.

Item No.	Designation
28112000003	Housing connectors, for connecting several lights
2110864**x**000	Single light Quadro LED, AC version
2110863**x**000	Single light Quadro LED, DC version

x:
1: clear **2**: white **3**: yellow **4**: amber **5**: red **6**: green **7**: blue

7. Maintenance, service, repairs

- Observe the Safety information during all work on the device.

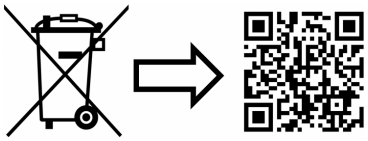
The device requires no special maintenance.

- Do not use abrasive, solvent-containing or chemically aggressive cleaners for cleaning the outside.
- Do not use sharp tools for cleaning and especially avoid scratching the lens.
- Do not clean with high pressure.
- Only replace components using original spare parts.
- Only have repairs carried out at the manufacturer's premises.

Conversions, modifications, improper and impermissible use as well as failure to observe the notes in these operating instructions shall void any warranty.

8. Decommissioning, dismantling and disposal

- Observe the Safety information during all work on the device.



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