



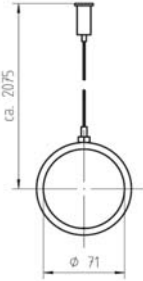

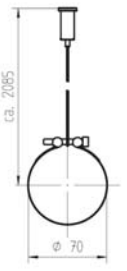
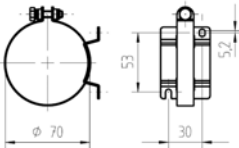
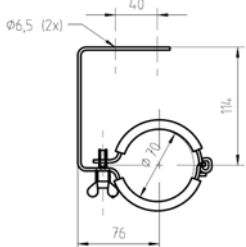
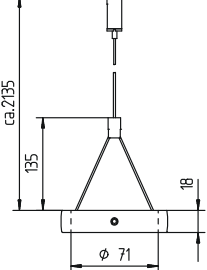
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1. Bracket for luminaire range RL 40

	Model	Order numbers
	<p>Bracket for luminaire range RL 40 (pendant bracket) Bracket: anodized aluminum Wire: stainless steel Ceiling bracket: nickel-plated</p>	190 176 019
	<p>Bracket for luminaire range RL 40 (screw bracket) Bracket: anodized aluminum Screw: galvanized</p>	190 177 019
	<p>Bracket for luminaire range RL 40 (pendant bracket) Bell: stainless steel Wire: stainless steel Ceiling bracket: nickel-plated</p>	190 179 019
	<p>Bracket for luminaire range RL 40 (wall bracket bell) Bell: stainless steel Wire: stainless steel</p>	190 174 019
	<p>Bracket for luminaire range RL 40 (wall bracket clip) Springband steel: galvanized</p>	306 266 022
	<p>Bracket for luminaire range RL 40 (pendant bracket horizontal for vertical hanging) Bracket: anodized aluminum Wire: stainless steel Ceiling bracket: nickel-plated</p>	190 203 019

2. Bracket for luminaire range RL 70

	Model	Order numbers
	Bracket for luminaire range RL 70 (pendant bracket) Bracket: anodized aluminum Wire: stainless steel Ceiling bracket: nickel-plated	190 173 019
	Bracket for luminaire range RL 70 (screw bracket) Bracket: anodized aluminum Screw: galvanized	190 175 019
	Bracket for luminaire range RL 70 (pendant bracket) Bell: stainless steel Wire: stainless steel Ceiling bracket: nickel-plated	190 178 019
	Bracket for luminaire range RL 70 (wall bracket bell) Bell: stainless steel Wire: stainless steel	190 147 019
	Folding bracket for luminaire range RL 70 Bell: stainless steel Wire: stainless steel	190 162 729
	Bracket for luminaire range RL 70 (pendant bracket horizontal for vertical hanging) Bracket: anodized aluminum Wire: stainless steel Ceiling bracket: nickel-plated	190 204 019

3. End caps

	Model	Order numbers
	<p>Aluminum end caps for luminaire range RL 40 closed with opening (for cable)</p>	<p>330 345 040 330 345 030</p>
	<p>Aluminum end caps for luminaire range RL 70 closed with opening (for cable) washer for securing the end caps</p>	<p>330 345 010 330 345 020 325 554 010</p>

4. Technical information on the installation of tube luminaires with external ballast (RL 40)

- Please always observe the manufacturer's information on the ballast!

4.1. Cables and cable lengths

- The maximum cable length between electronic ballast and lamp connection is approx. 1.5 m (ballast manufacturer's specifications).
- The cable lengths for dimmable electronic ballasts apply as specified by the ballast manufacturers. Where no such specifications are available, the following lengths are to be observed: Max. 1.0 m for T16 lamps, max. 1.5 m for T26 lamps.
- The max. cable length for DALI electronic ballasts is 1 m or 100pF.

4.2. Installation of the luminaires

- When installing the luminaires in horizontal position with T16 lamps, the cold spot of the lamp must be at the bottom. The cold spot is located at the end of the lamp on which the lamp's designation is printed.

4.3. Operation of the luminaires outdoors

- The permissible temperature range is specified in the catalogue.
- If the permissible temperature is exceeded, e.g. as a result of sunlight, the service life of the electronic components will be reduced.

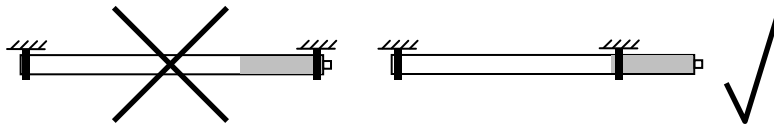
4.4. Switching cycles

- When frequent switching is involved, the electronic ballasts recommended by our company should be used and cold-start devices should not be used.
- Where switching is effected via presence detection using PIR detectors or when using an automatic staircase system, the operating time must be at least 10 min.

5. Technical information on the installation of tube luminaires with built-in ballast (RL 40 E, RL 70 E, RL 70 EP)

5.1. Installation of the luminaires

- When installing the luminaires in horizontal position with T16 lamps, the cold spot of the lamp must be at the bottom. The cold spot is located at the end of the lamp on which the lamp's designation is printed.
- When the RL 40 is ceiling-mounted, we recommend mounting the bracket on the side of the built-in ballast so that it is facing inwards in order to prevent the luminaire from hanging too low.



5.2. Operation of the luminaires outdoors

- The permissible temperature range is specified in the catalogue.
- If the permissible temperature is exceeded, e.g. as a result of sunlight, the service life of the electronic components will be reduced.

5.3. Switching cycles

- When frequent switching is involved, the electronic ballasts recommended by our company should be used and cold-start devices should not be used.
- Where switching is effected via presence detection using PIR detectors or when using an automatic staircase system, the operating time must be at least 10 min.

6. Technical information on the installation of luminaires with built-in transformer (RL 40 LE)

6.1. Operation of the luminaires outdoors

- The permissible temperature range is specified in the catalogue.
- If the permissible temperature is exceeded, e.g. as a result of sunlight, the service life of the electronic components will be reduced.

7. Technical information on series installation (RL 70 E with through wiring)

7.1. Maximum number of luminaires

- The max. number of luminaires is to be observed when carrying out installation in series with through wiring.
- The maximum number is specified on the rating plate (e.g. max. 10 luminaires per series connection).

7.2. Cable cross-section

- The local regulations are to be observed with regard to required cable cross-sections, type of cabling (e.g. outside applications – H05 RNF) and fusing.

8. Technical information on the specifications of tube luminaires

8.1. Tube material

Tube luminaires from Waldmann are made of impact-resistant modified acrylic glass (PMMA). They combine the excellent product characteristics of PMMA, such as weather resistance, with the robustness of polycarbonate (PC) and are available in colorless or satined.

» PMMA acrylic impact-resistant«

- robust
- highly transparent
- brilliant
- weather-resistant

8.2. Class of protection

- SK I (earthing protection)



8.3. IP system of protection

- IP 67

First digit

Level	Effective against
0	No protection against contact and ingress of objects
1	Any large surface of the body, such as the back of a hand, but no protection against deliberate contact with a body part (>50 mm)
2	Fingers or similar objects (>12,5 mm)
3	Tools, thick wires, etc. (>2,5 mm)
4	Most wires, screws, etc. (>1 mm)
5	Ingress of dust is not entirely prevented, but it must not enter in sufficient quantity to interfere with the satisfactory operation of the equipment; complete protection against contact
6	No ingress of dust; complete protection against contact

Second digit

Level	Effective against
0	not protected
1	Dripping water (vertically falling drops) shall have no harmful effect.
2	Vertically dripping water shall have no harmful effect when the enclosure is tilted at an angle up to 15° from its normal position.
3	Water falling as a spray at any angle up to 60° from the vertical shall have no harmful effect.
4	Water splashing against the enclosure from any direction shall have no harmful effect.
5	Water projected by a nozzle against enclosure from any direction shall have no harmful effects.
6	Water projected in powerful jets against the enclosure from any direction shall have no harmful effects.
7	Ingress of water in harmful quantity shall not be possible when the enclosure is immersed in water under defined conditions of pressure and time (up to 1 m of submersion).
8	The equipment is suitable for continuous immersion in water under conditions which shall be specified by the manufacturer.

Source: Wikipedia

8.4. IK degree of protection

- IK 05 – impact resistance in accordance with VDE 0470



The **IK impact resistance** is a measurement for the resistance of the housing of electric appliances to stress caused by impact. It is based on the DIN EN 50102/VDE 0470 classifications and describes how much impact energy in joules the housing can take without breaking.

- There are 10 classes:
K00 not impact-resistant at all
IK01 up to 0.150 J
IK02 up to 0.2 J
IK03 up to 0.35 J
IK04 up to 0.5 J
IK05 up to 0.7 J
IK06 up to 1 J
IK07 up to 2 J
IK08 up to 5 J
IK09 up to 10 J
IK10 up to 20 J

8.5. Burning behavior

- B2 in accordance with DIN 4102 (normal degree of flammability)

8.6. Ambient temperature

Fitted with	Type	Permissible ambient temperature
T26 18W	RL40, RL70	-20 to +40°C
T26 36W	RL40	-20 to +40°C
T26 36W	RL70	-25 to +40°C
T26 58W	RL40, RL70	-20 to +40°C
T16 24W	RL40, RL70	-20 to +40°C
T16 39W	RL40	-15 to +40°C
T16 54W	RL40	-15 to +40°C
LED	RL40	-20 to +45°C
T16 39W	Electronic ballast in protective housing	-20 to +40°C
T16 54W	Electronic ballast in protective housing	-20 to +40°C
T26 58W	Electronic ballast in protective housing	-20 to +40°C