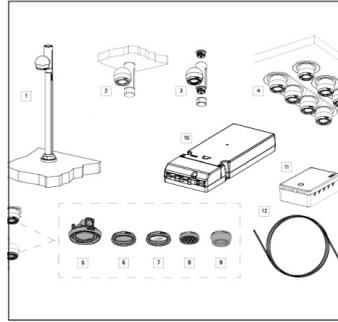


# Planning aid Axis showcase lighting

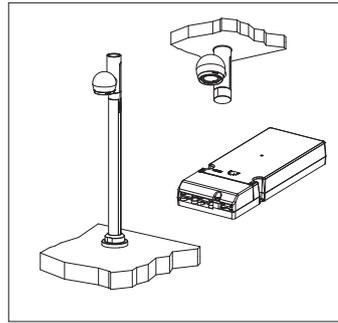


A handout for showcase builders, lighting designers  
and museum technology staff



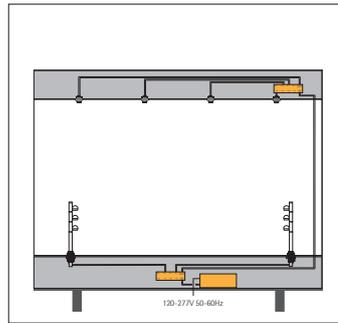
System overview

3



Components

4



Installation examples

7

**ERCO Axis planning aid**  
Appendix: Axis at a glance

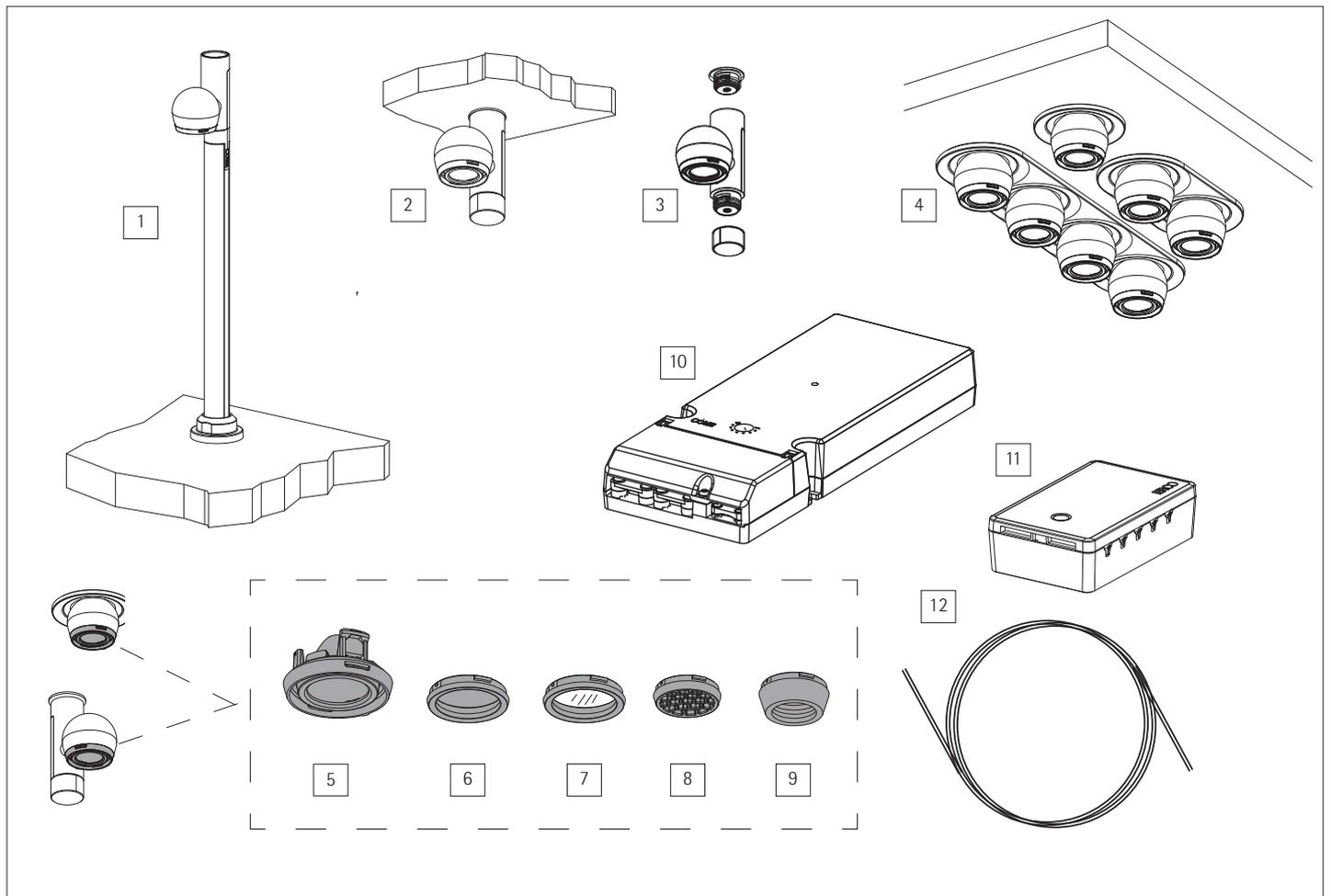
<b>Light distribution</b>	<ul style="list-style-type: none"> <li>Direct beam</li> <li>Direct beam with diffuser</li> <li>Direct beam with diffuser and sensor</li> <li>Direct beam with diffuser and sensor and sensor</li> </ul>	<ul style="list-style-type: none"> <li>Direct beam with diffuser</li> <li>Direct beam with diffuser and sensor</li> <li>Direct beam with diffuser and sensor and sensor</li> </ul>	<ul style="list-style-type: none"> <li>Direct beam with diffuser</li> <li>Direct beam with diffuser and sensor</li> <li>Direct beam with diffuser and sensor and sensor</li> </ul>
<b>Control unit</b>	<ul style="list-style-type: none"> <li>Control unit with sensor</li> <li>Control unit with sensor and sensor</li> <li>Control unit with sensor and sensor and sensor</li> </ul>	<ul style="list-style-type: none"> <li>Control unit with sensor</li> <li>Control unit with sensor and sensor</li> <li>Control unit with sensor and sensor and sensor</li> </ul>	<ul style="list-style-type: none"> <li>Control unit with sensor</li> <li>Control unit with sensor and sensor</li> <li>Control unit with sensor and sensor and sensor</li> </ul>
<b>Technical specifications</b>	<ul style="list-style-type: none"> <li>Power: 120-277V 50-60Hz</li> <li>Power: 120-277V 50-60Hz</li> <li>Power: 120-277V 50-60Hz</li> </ul>	<ul style="list-style-type: none"> <li>Power: 120-277V 50-60Hz</li> <li>Power: 120-277V 50-60Hz</li> <li>Power: 120-277V 50-60Hz</li> </ul>	<ul style="list-style-type: none"> <li>Power: 120-277V 50-60Hz</li> <li>Power: 120-277V 50-60Hz</li> <li>Power: 120-277V 50-60Hz</li> </ul>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>Height: 120-277V 50-60Hz</li> <li>Height: 120-277V 50-60Hz</li> <li>Height: 120-277V 50-60Hz</li> </ul>	<ul style="list-style-type: none"> <li>Height: 120-277V 50-60Hz</li> <li>Height: 120-277V 50-60Hz</li> <li>Height: 120-277V 50-60Hz</li> </ul>	<ul style="list-style-type: none"> <li>Height: 120-277V 50-60Hz</li> <li>Height: 120-277V 50-60Hz</li> <li>Height: 120-277V 50-60Hz</li> </ul>
<b>Ordering</b>	<ul style="list-style-type: none"> <li>Ordering: 120-277V 50-60Hz</li> <li>Ordering: 120-277V 50-60Hz</li> <li>Ordering: 120-277V 50-60Hz</li> </ul>	<ul style="list-style-type: none"> <li>Ordering: 120-277V 50-60Hz</li> <li>Ordering: 120-277V 50-60Hz</li> <li>Ordering: 120-277V 50-60Hz</li> </ul>	<ul style="list-style-type: none"> <li>Ordering: 120-277V 50-60Hz</li> <li>Ordering: 120-277V 50-60Hz</li> <li>Ordering: 120-277V 50-60Hz</li> </ul>
<b>Notes</b>	<ul style="list-style-type: none"> <li>Notes: 120-277V 50-60Hz</li> <li>Notes: 120-277V 50-60Hz</li> <li>Notes: 120-277V 50-60Hz</li> </ul>	<ul style="list-style-type: none"> <li>Notes: 120-277V 50-60Hz</li> <li>Notes: 120-277V 50-60Hz</li> <li>Notes: 120-277V 50-60Hz</li> </ul>	<ul style="list-style-type: none"> <li>Notes: 120-277V 50-60Hz</li> <li>Notes: 120-277V 50-60Hz</li> <li>Notes: 120-277V 50-60Hz</li> </ul>
<b>Safety</b>	<ul style="list-style-type: none"> <li>Safety: 120-277V 50-60Hz</li> <li>Safety: 120-277V 50-60Hz</li> <li>Safety: 120-277V 50-60Hz</li> </ul>	<ul style="list-style-type: none"> <li>Safety: 120-277V 50-60Hz</li> <li>Safety: 120-277V 50-60Hz</li> <li>Safety: 120-277V 50-60Hz</li> </ul>	<ul style="list-style-type: none"> <li>Safety: 120-277V 50-60Hz</li> <li>Safety: 120-277V 50-60Hz</li> <li>Safety: 120-277V 50-60Hz</li> </ul>

Appendix: Axis at a glance

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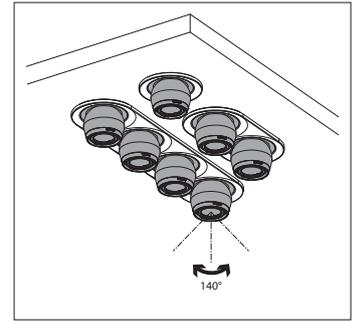
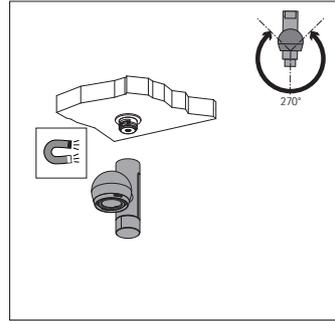
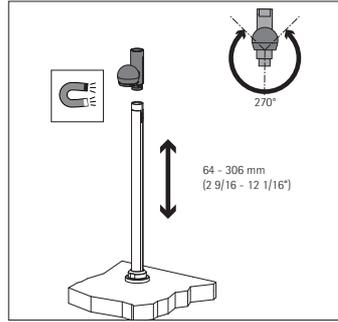
## System overview

Axis is a comprehensive system for effective and efficient lighting of objects in a showcase. Even with small distances between luminaire and object, the conservation requirements are met. Sophisticated accessories allow easy adaptation to changing requirements. The following overview shows the components of the Axis system.



- |   |   |    |   |
|---|---|----|---|
| 1 | Stem-mounted luminaire  | 7  | Sculpture lens / Softening lens             |
| 2 | Ceiling mounted luminaire   | 8  | Honeycomb louvre (including Softening lens) |
| 3 | Extension light head for stem-mounted and surface-mounted luminaires    | 9  | Snoot                                       |
| 4 | Semi-recessed luminaire with 1-fold, 2-fold, 4-fold frame (accessories) | 10 | Control gear                                |
| 5 | Lens unit   | 11 | Distributor                                 |
| 6 | ND / Blue light filter  | 12 | 10.0m cable extension                       |

### Axis luminaires



### Tips:

Please note that a maximum of 12 light heads may be connected to one control gear. For example, a stem-mounted luminaire with two extension light heads uses a total of three light heads. The heat input of a light head is approx. 0.6W.

### Stem luminaire

The stem-mounted luminaire consists of the stem and at least one light head. The luminaire is suitable for floor or ceiling mounting in a showcase. The stem is height-adjustable. The light head is attached by magnets at the end of the stem and at the light head. You can mount the light head in one direction only because of the polarity of the magnets. The light head has a swivel angle of 270° directed towards the mounting plane and can be rotated 360°. The luminaire can be extended with one extension light head for ceiling mounting and with up to 2 extension light heads for floor mounting. The light head that comes with the luminaire is a termination light head. The light head itself cannot accommodate any other light heads or be attached to the surface-mounted luminaire.

### Surface-mounted luminaire

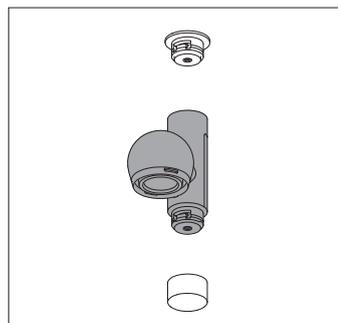
The surface-mounted luminaire consists of a fitting and the light head. The luminaire is suitable for floor or ceiling mounting in a showcase. The light head is attached by magnets at the end of the stem and at the light head. You can mount the light head in one direction only because of the polarity of the magnets. The light head can be rotated 360° and has a swivel angle of 270° directed against the mounting plane. The luminaire can be extended with one extension light head for ceiling mounting and with up to 2 extension light heads for floor mounting. The light head that comes with the luminaire is a termination light head. The light head itself cannot accommodate any other light heads or be attached to the stem-mounted luminaire.

### Semi-recessed luminaire

For the semi-recessed luminaire, a 1-fold, 2-fold or 4-fold mounting frame must be ordered in addition to the light head(s). The light heads are identical in terms of lighting technology to those of the stem-mounted or surface-mounted luminaires. The light heads can be rotated max. 360°; the swivel angle is 70° to each side. The luminaires can be mounted in the ceiling of a showcase or on the floor, with fixing via the spring clips on the mounting frame. The luminaire must not be covered with insulating materials.

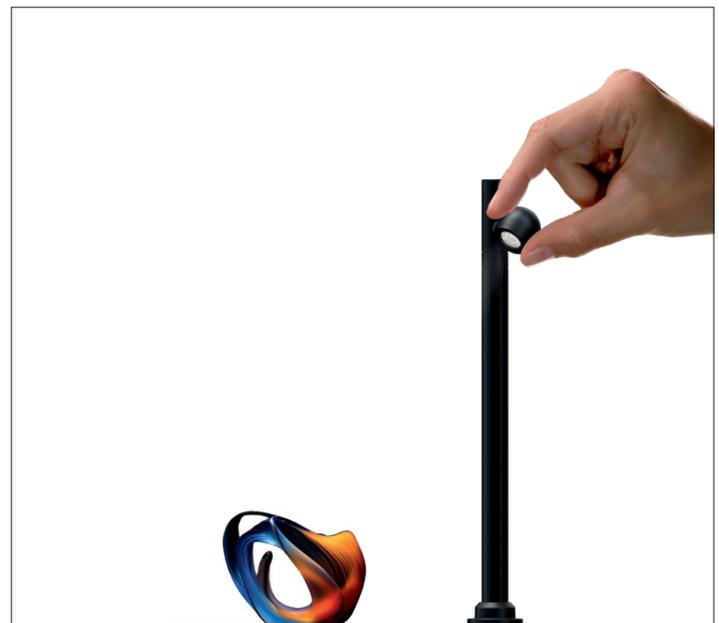
### Tip:

An extension lighting head is suitable for both stem-mounted and surface-mounted luminaires.



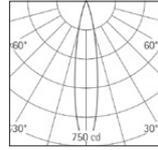
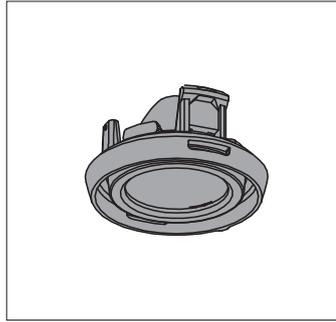
### Extension light head

You can supplement your stem-mounted luminaire or surface-mounted luminaire with the extension light head. For ceiling mounting, one extension light head is allowed. For floor mounted luminaires, you may use two extension light heads between the supplied light head and the stem or fitting. If it is necessary to use the extension luminaire as a terminating luminaire, it is imperative to use an end cap to close the circuit of the Axis luminaires. When ordering, please note that the caps for use on the stem-mounted luminaire and the surface-mounted light are different!

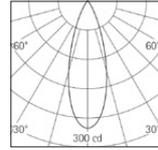


## Components

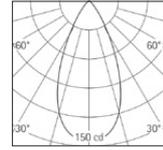
### Axis accessories Lens units



Spot (17°)  
Examples:  
3000K CRI 92



Flood (32°)



Wide flood (45°)

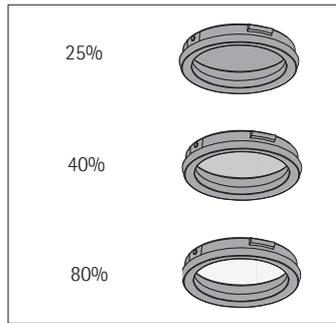
### Lens units

Lens units can be changed without tools; the light distributions spot, flood and wide flood are available. The lens units are identical for all Axis luminaires and light heads.

### Tip:

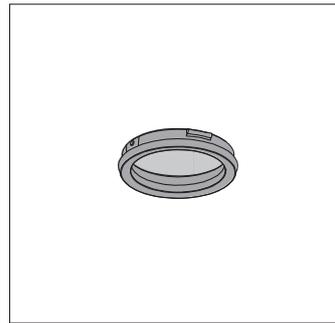
Filters and lenses are attached to the lens unit with the adapter ring supplied. Instead of the adapter ring, you may also use the snoot or the honeycomb louvre.

The ERCO filter foils can be pushed out of the adapter ring and replaced with your own foils. These foils must have a diameter of 17mm, the material thickness should be between 0.03mm and 0.25mm.



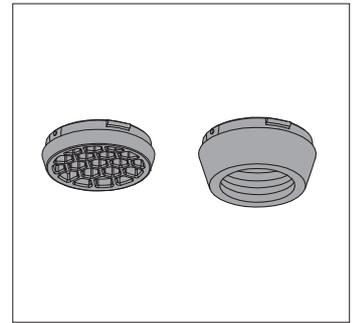
### ND Filter

ND Filter (Neutral Density): With 3 different ND filters (25%, 40%, 80%) the light intensity of individual light heads can be reduced. This reduces the illuminance on the exhibit while leaving the spectrum unchanged.



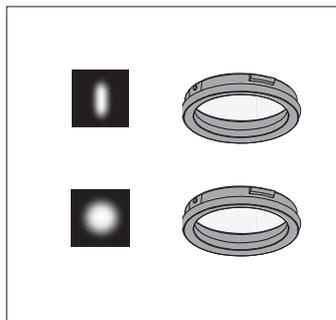
### Blue light filter

The filter effect starts in the blue range at approx. 440nm. Short-wave radiation <380nm is entirely removed. This provides excellent protection for particularly sensitive objects.



### Honeycomb louvre, Snoot

The honeycomb louvre or snoot is available for increased glare control. Always use the honeycomb louvre with the softening lens provided.

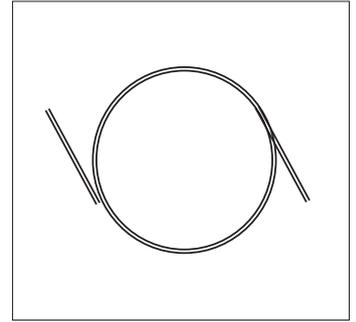
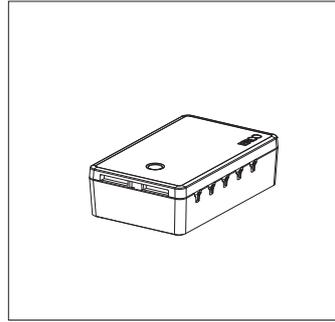
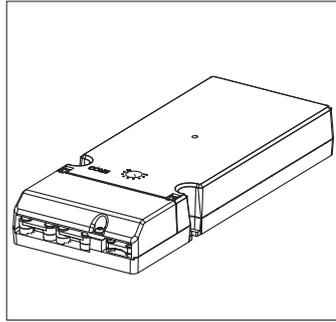


### Lenses

The sculpture lens brings the light cone into an oval shape with an aspect ratio of approx. 1:3. The softening lens softens hard contours of the light cone.

## Components

### Axis accessories Electrics



#### Tip:

Only use ERCO Axis control gear. It is hot-plug capable and prevents damage to the luminaire or control gear.

#### Control gear

The Axis luminaires are connected exclusively to the Axis control gear. The control gear can supply up to 12 luminaires with constant current.

A switchable version with a potentiometer on the housing and a version with Casambi Bluetooth are available as control options. Please note that all luminaires are always dimmed simultaneously!

The luminaires/light heads must be connected in series. The optional Axis distributor reduces the wiring effort. If you use the distributor, the wire cross-section of the connecting cable between the control gear and the distributor must not be larger than 0.35mm<sup>2</sup>.

The control gear is designed for through-wiring on the primary side, which reduces the installation effort if, for example, several showcases are controlled via one supply line. Only use a maximum of one operating device per circuit. If you use more than one operating device in larger systems, the circuits must be galvanically isolated.

#### Distributor

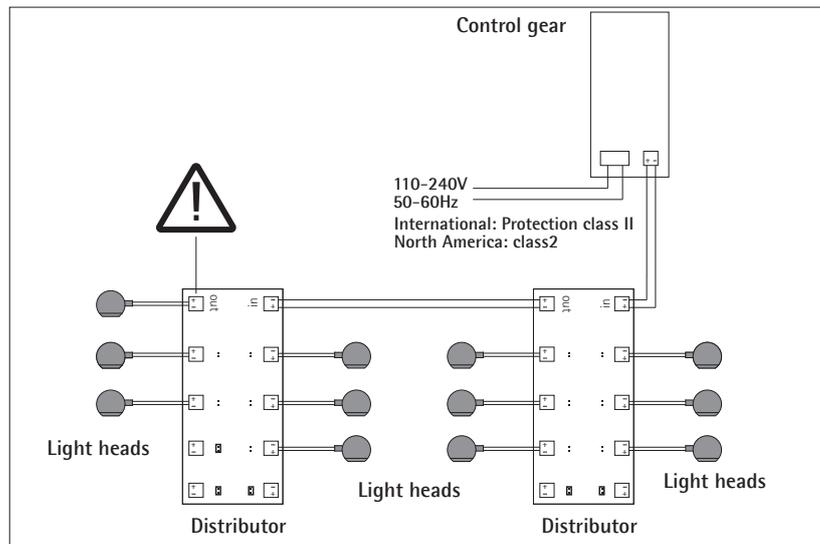
The Axis distributor facilitates wiring. You may easily connect up to 9 luminaires/light heads and additional distributors. Attention: A maximum of 12 light heads with a cable of 0.35mm<sup>2</sup> may be connected to all distributors connected to one control gear. Due to the necessary series connection of the luminaires, all connections are bridged except for the out terminal when delivered. When connecting a luminaire, remove the jumper and place it in the storage in the distribution board.

The out terminal must always be occupied, either with a luminaire or another distributor.

A distributor may only be connected to one operating device!

#### Connection cable

If the connecting cables of the luminaires are not sufficient, an additional extension cable of 10.0m length is available as an accessory. This extends the connecting cables of the luminaires; also use the cable to connect the control gear and the distribution board. Attention! This cable is not suitable for mains connection, use it only on the output side of the control gear!

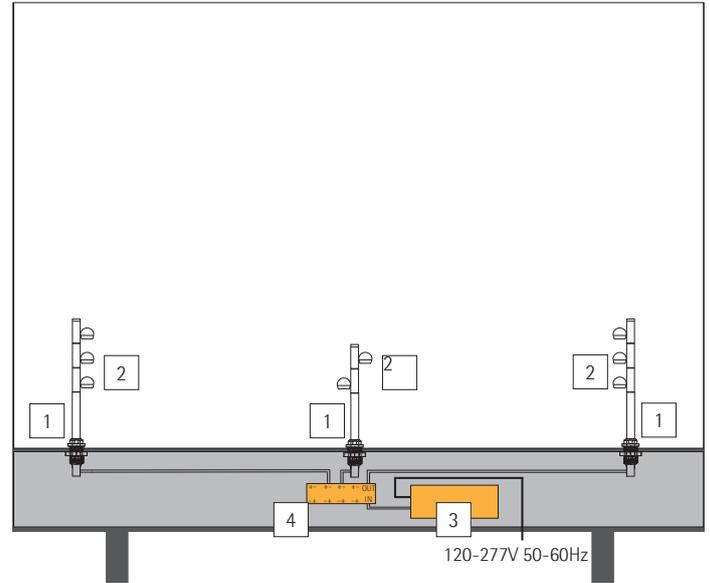


## Sample installations

### Stem-mounted luminaires

In frameless glass showcases or table-top showcases, stem-mounted luminaires are suitable for illuminating exhibits from above. Each Axis stem-mounted luminaire can be extended with up to two light heads for this purpose.

As a rule, the space under the showcase can be used to install the control gear and distributor. To reduce the heat input from the lighting, it is advisable not to mount the control gear in the showcase or directly on the showcase floor. Adequate ventilation is necessary for enclosed areas. No heat is generated in the distributor - so heat input does not have to be taken into account for the distributor.



### Material requirements

For this sample installation with a total of eight light heads you need:

Number	Quantity	Description
1	3	stem-mounted luminaire (one light head per luminaire included)
2	5	extension light head
3	1	ERCO Axis control gear
4	1	ERCO Axis distributor

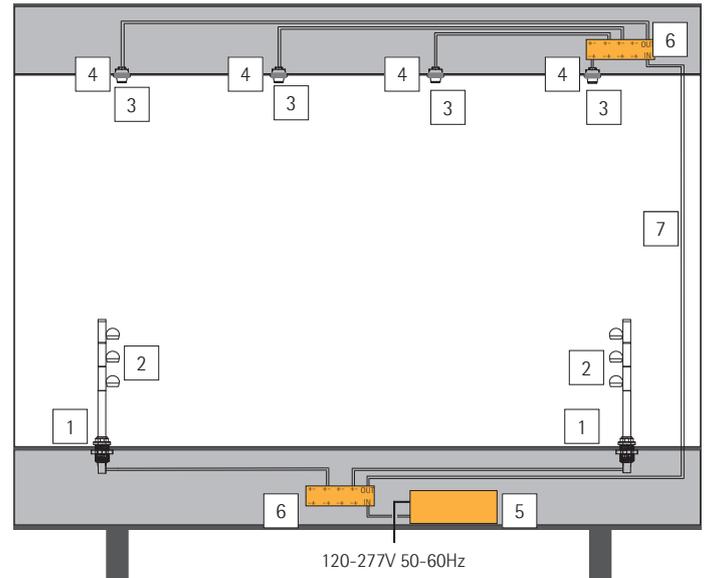
## Sample installations

### Stem-mounted luminaires and semi-recessed luminaires

The sample showcase has a space at the top and bottom that can be used for installation.

The upper space is connected via a 2-wire line and another distributor. The electrical connection is made in the lower space of the showcase. You may also mount the control gear elsewhere. Because of the heat input, it is not recommended to install the control gear in the showcase or directly on the showcase floor.

Adequate ventilation is necessary for enclosed areas. No heat is generated in the distributor - so heat input does not have to be taken into account for the distributor.



## Material requirements

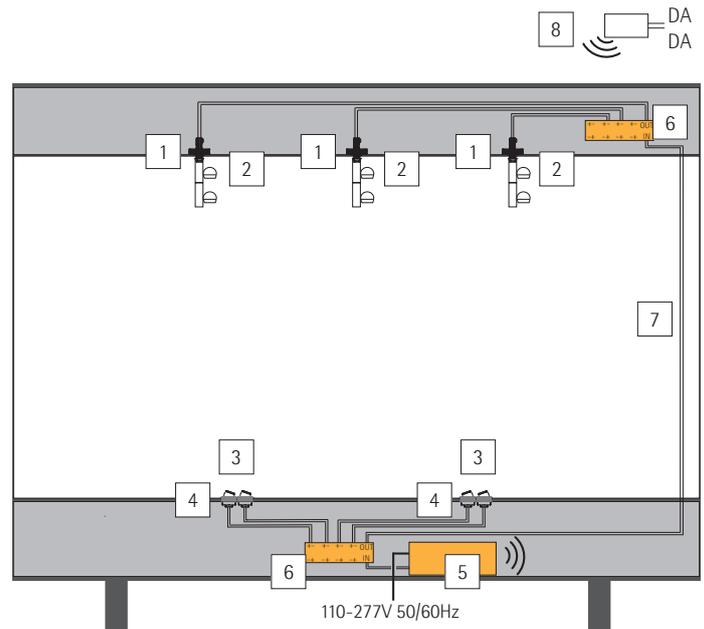
For this sample installation with a total of 10 light heads you will need:

Number	Quantity	Description
1	2	stem-mounted luminaire (one light head per luminaire included)
2	4	extension light head
3	4	semi-recessed luminaire
4	4	one-fold frame
5	1	ERCO Axis control gear unit
6	2	ERCO Axis distributor
7	1	10.0m cable extension

## Sample installations

### Surface-mounted and semi-recessed luminaires

The showcase has an installation space in the upper and lower areas. The upper installation space is accessed via a 2-core cable and another distributor and accommodates the 3 surface-mounted luminaires. Control is via an on-site DALI system, the control signals are transmitted to the control gear via the ERCO DALI-Casambi gateway. To reduce heat input, it is recommended not to fix the operating unit in the showcase or directly on the showcase floor. Adequate ventilation is necessary for enclosed areas. No heat is generated in the distributor - so heat input does not have to be taken into account for the distributor.



### Material requirements

For this installation you will need:

Number	Quantity	Description
1	3	surface-mounted luminaire (1 light head per luminaire included in delivery)
2	3	extension light head
3	4	semi-recessed luminaire
4	2	two-fold frame
5	1	ERCO Axis control gear with Casambi Bluetooth
6	2	ERCO Axis distributor
7	1	10.0m cable extension
8	1	ERCO DALI-Casambi Gateway

	Stem luminaire	Surface-mounted luminaire	Extension light head	Semi-recessed luminaire
Light distribution	Spot, Flood, Wide flood	Spot, Flood, Wide flood	Spot, Flood, Wide flood	Spot, Flood, Wide flood
Installation	Floor mounting, ceiling mounting	Ceiling mounting, floor mounting	on stem-mounted or surface-mounted luminaire	Ceiling mounting, floor mounting
Line length	1.0m	1.0m	-	1.0m
Light control	via control gear (accessories) Switchable with potentiometer Casambi Bluetooth	via control gear (accessories) Switchable with potentiometer Casambi Bluetooth	via luminaire	via control gear (accessories) Switchable with potentiometer Casambi Bluetooth
Installed height	64-306mm + 47mm (Light head)	47mm	47mm	17mm
Recess depth	min. 55mm	46mm	-	28mm
Mounting hole	25mm	12mm	-	35mm
Material thickness floor / ceiling	1-25mm	1-25mm		1-25mm
Necessary accessories	Control gear (max. 12 light heads)	Control gear (max. 12 light heads)	-	- Control gear - 1/2/4-fold frame
Accessories	- Distributor - Lens units, sculpture lens, soft focus lens - ND filter, Blue light filter - Snoot, honeycomb louvre - 10.0m cable extension	- Distributor - Lens units, sculpture lens, soft focus lens - ND filter, Blue light filter - Snoot, honeycomb louvre - 10.0m cable extension	- Lens units, sculpture lens, soft focus lens - ND filter, Blue light filter - Snoot, honeycomb louvre - Top/bottom end cap (only if the extension light head is used as an end light head)	- Distributor - Lens units, sculpture lens, soft focus lens - ND filter, Blue light filter - Snoot, honeycomb louvre - 10.0m cable extension

	Control gear	Distributor	Line extension	
Connections	Primary: AC 120-277V, 50-60Hz; max. 0.15A Secondary: 350mA, SELV LED max. 15W (max. 12 Axis light heads)	In: Axis control gear (SKII) Out: 9 Axis light heads (or 1 Axis distributor and 8 light heads)	Only approved for connection between luminaire and distributor or control gear. Not suitable for mains voltage!	
Safety class	II	III		
Connection cross-section	Primary max. 2.5mm <sup>2</sup> Secondary max. 1.5mm <sup>2</sup>	0.2-0.35 mm <sup>2</sup> d 4mm	2 x 0.35mm <sup>2</sup>	
Light control	Potentiometer Casambi Bluetooth			
Dimensions (L x W x H)	273 x 104 x 38mm	90 x 56 x 26mm	10.0m	