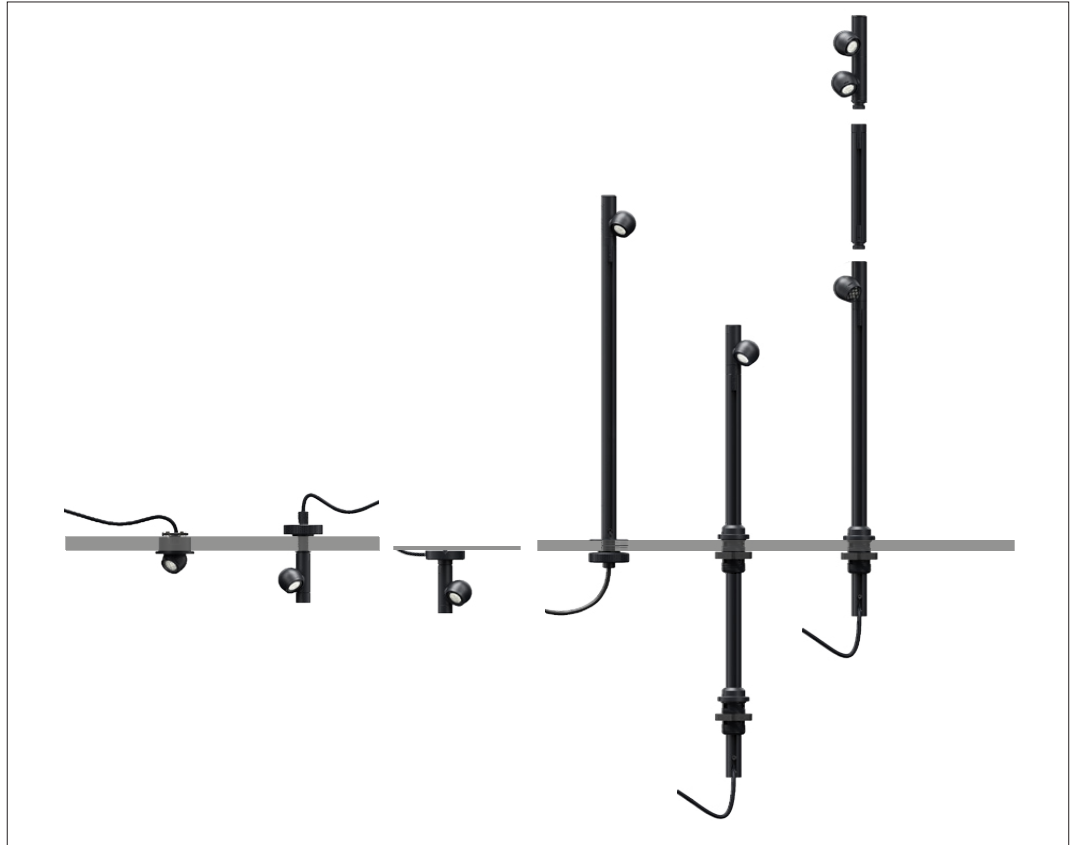


Planning aid

Axis showcase lighting

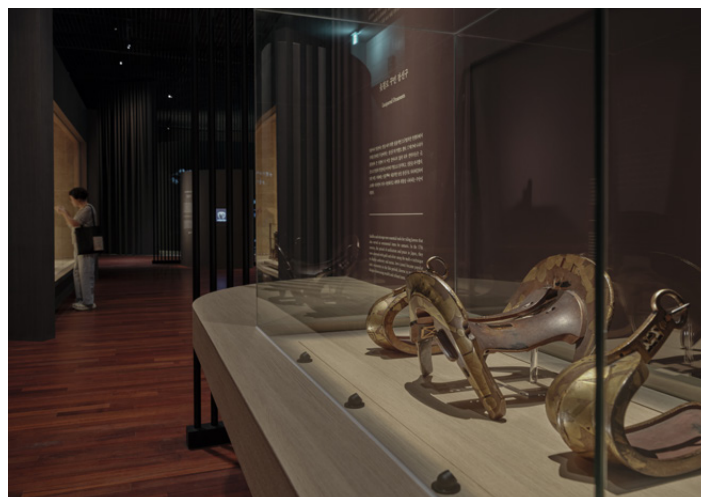


A guide for planners in showcase construction,
museum technology, and lighting design
A separate document is available for Axis recessed spotlights.

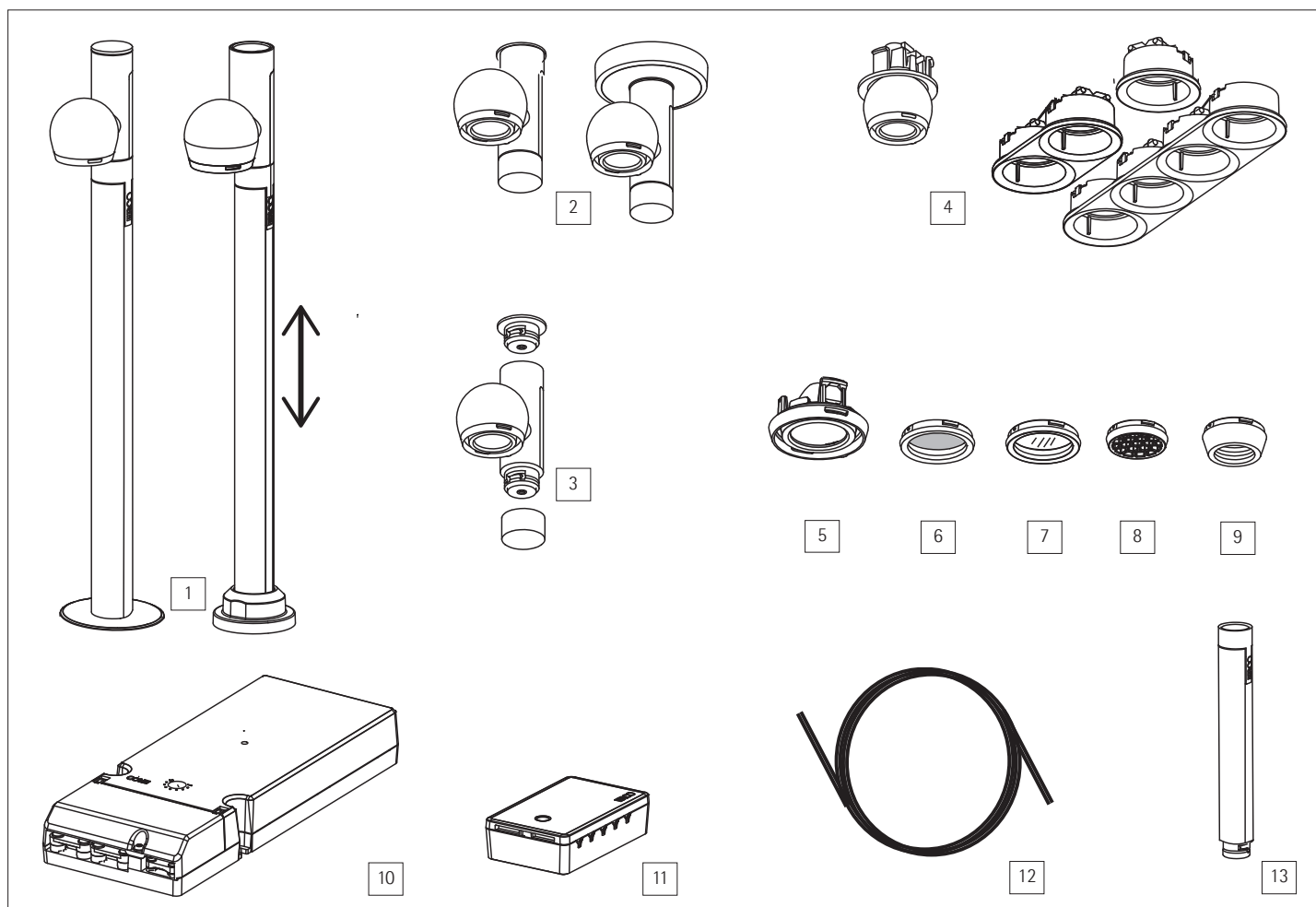
System overview

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. Well-designed accessories allow easy adaptation to changing requirements. The following overview shows the components of the Axis system.

Please also refer to the Planning Aid for Axis recessed spotlights, which can be used in large showcases



Korean National Museum, Seoul / South Korea
Photography: East Asian lacquerwork (Korea, Japan and China), July 10, 2024 – September 22, 2024, Raphael Olivier



- | | | |
|---|---|--------------|
| 1 Stem-mounted luminaire (2 variants: height-adjustable / fixed) | 7 Sculpture lens / Softening lens | 13 Extension |
| 2 Surface-mounted luminaire (2 variants: fastening with knurled nut / screws or magnet) | 8 Honeycomb louver (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 32ft (10.0m) cable extension | |

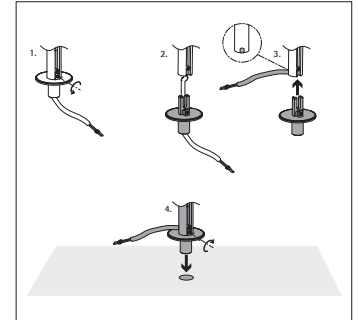
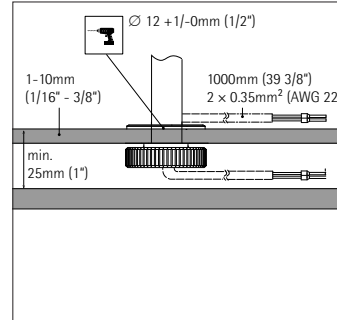
Components: Stem-mounted luminaires

The ERCO Axis stem-mounted luminaire is available in two versions
 - a height-adjustable luminaire
 - a luminaire for shallow installation spaces in a showcase

The light head is attached by magnets at the end of the stem and at the light head. Due to the polarity of the magnets, the light head can only be mounted in one direction.

The supplied light head is a terminating light head. It cannot accommodate any additional light heads and cannot be fitted to the surface-mounted luminaire.

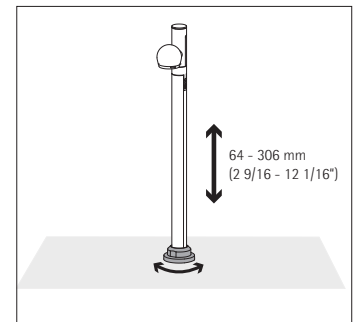
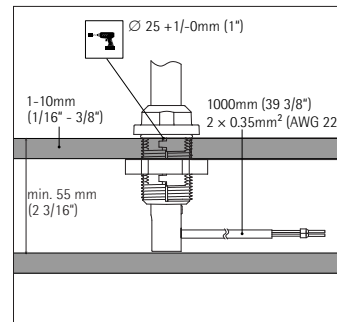
Stem-mounted luminaire height-adjustable



Space requirement in the installation area
 The luminaire requires an installation depth of at least 2-3/16" (55 mm), measured from the installation surface. Take into account the thickness of the mounting surface. If you want full adjustability, you will need up to an additional 9-1/2" (242 mm).

Tool-free height adjustment
 After loosening the upper fixing nut, you can move the luminaire stem into the installation space. Take this into account when routing the connecting cable.

Stem-mounted luminaire for shallow installation spaces



Space requirement in the installation area
 The luminaire requires an installation depth of at least 1" (25 mm), measured from the installation surface. Take into account the thickness of the mounting surface.

Convert cable routing
 With a few simple steps, you can convert the luminaire so the connecting cable can be routed inside the showcase.

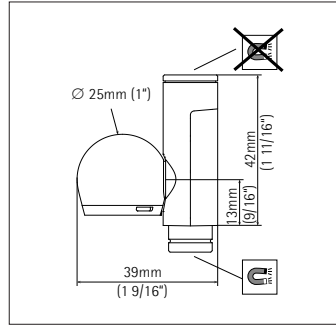
Axis stem-mounted luminaires compared

Item	Overall height	Recess depth	Ceiling opening	Mounting surface thickness	Cable routing	Cable length	Mounting location
Stem luminaire, height-adjustable	2-1/2"-1' (64-306mm)	2-3/16"-1' (55-297mm)	\varnothing 1" (25mm)	max. 1" (25mm)	lateral	3ft (1.0m)	Floor / ceiling / wall
Stem-mounted luminaire Shallow installation space	1 ft (306mm)	1" (25mm)	\varnothing 15/32" (12mm)	1/32"-1/8" (1-10mm)	central	3ft (1.0m)	Floor / ceiling / wall

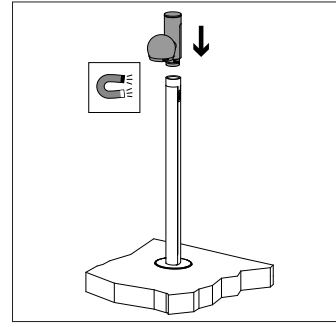
Notes on planning and installation

Tip:

Please note that a maximum of 12 light heads may be connected to one control gear unit. 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.

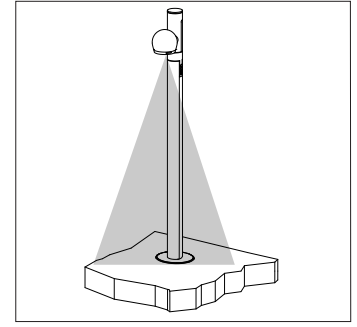


Light head dimensions



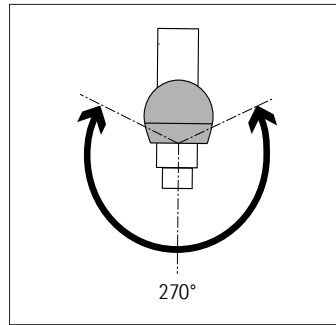
Magnetic attachment of the light head

The light head is attached by magnets at the end of the stem and at the light head. Always fit the light head with light pressure. It cannot accommodate any additional light head or extension.



Main beam direction of the light head

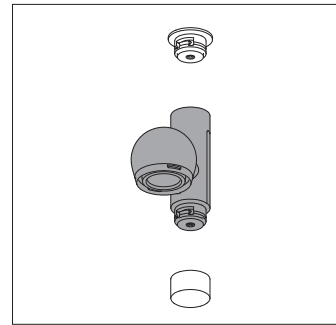
The main beam direction of the light head is always in the direction of the mounting of the luminaire, regardless of the mounting location. When mounted on the base, the luminaire cannot be aligned vertically upwards.



Set up the luminaire

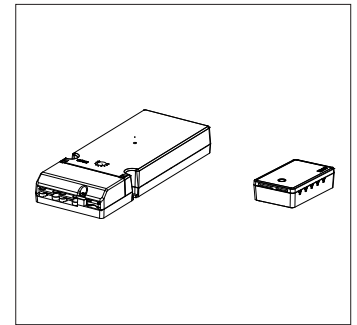
The light head has a swivel range of 270° towards the mounting plane and can be rotated 360°. It can rotate freely on the stem.

Avoid neighbouring light heads facing each other directly. This can cause unwanted overheating of the light head and reduce its service life.



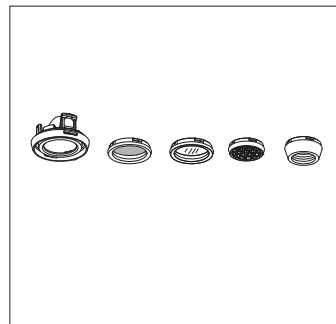
Extension light head

You can supplement your stem-mounted luminaire or surface-mounted luminaire with the extension light head. For ceiling and wall mounting, one extension light head is permitted; for floor-mounted luminaires, you may use two extension light heads between the supplied light head and the stem or fitting. See also page 8.



Control gear / distributor

To operate Axis luminaires, you always need the appropriate ERCO control gear. Only use the devices assigned to the luminaire in the data sheet. These enable "plug & play," which is a prerequisite for trouble-free operation with magnetic mounting. If multiple luminaires are to be connected, the ERCO Axis distributor is recommended. See also page 11.



Accessories

In addition to the extension, optical accessories and glare-control accessories are available. See also page 10.

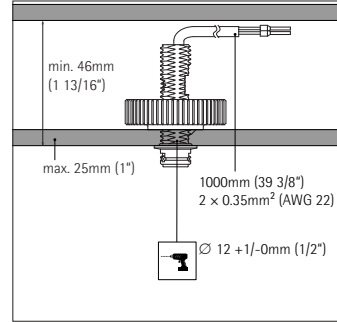
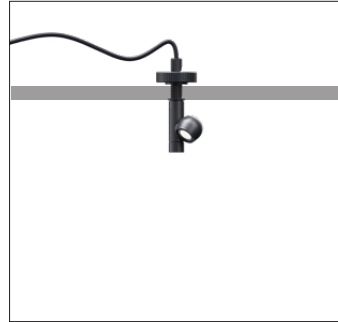
ERCO Axis surface-mounted luminaires are available in two versions

- luminaire with central screw fixing and cable routing
- luminaire for screw or magnetic mounting with central or lateral cable routing.

Due to the polarity of the magnets, the light head can only be mounted in one direction.

The supplied light head is a terminating light head. It cannot accommodate any additional light heads and cannot be fitted to the surface-mounted luminaire.

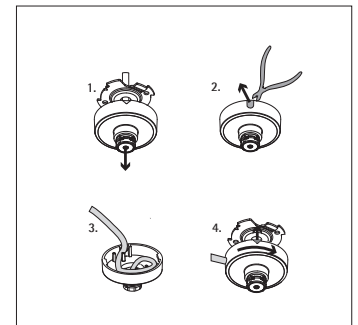
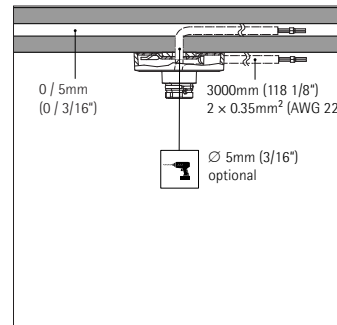
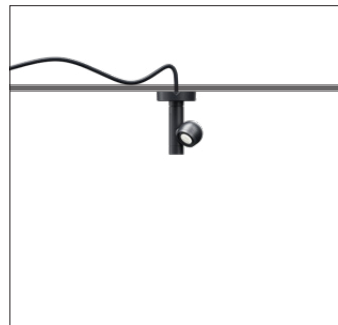
Surface-mounted luminaire with central knurled nut, screw fixing and cable routing



Space requirement in the installation area

The luminaire requires an installation depth of at least 1-3/4" (45 mm), measured from the installation surface. Take into account the thickness of the mounting surface. Maximum mounting surface thickness: 1" (25 mm).

Surface-mounted luminaire for attachment with magnets or screws

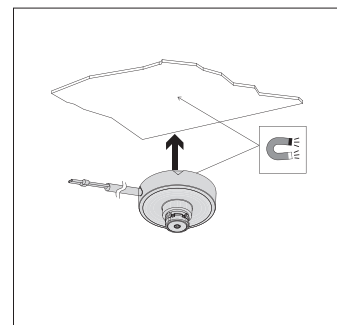


Space requirement in the installation area

An installation depth of approx. 15/64" (6 mm) is only required for central cable routing. No installation depth is required for lateral cable routing.

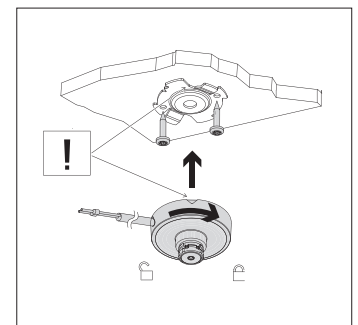
Convert cable routing

With a few simple steps, you can convert the luminaire so the connecting cable can be routed inside the showcase.



Magnetic mounting

The luminaire can also be attached magnetically to a steel plate. No magnetic mounting on a vertical surface. No drilling is required for lateral cable routing.



Screw fixing

The luminaire can also be mounted using conventional screw fixings to a showcase wall, ceiling or floor.

Axis surface-mounted luminaires compared

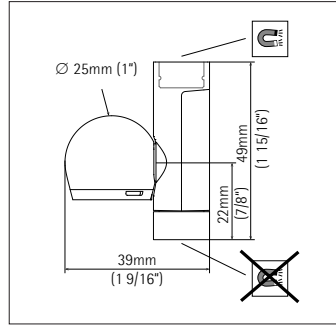
Item	Luminaire height	Mounting location	Magnetic / screw fixing	Cable	Cable routing	Recess depth	Ceiling opening
Surface-mounted luminaire	–	Floor / ceiling / wall	– / Yes	3 ft (1.0m), 2x1/32in. ² (2x0.75mm ²)	central	1-13/16" (46mm)	Ø 15/32" (12mm)
Surface-mounted luminaire for attachment with magnets or screws	5/16" (8mm)	Floor / ceiling / wall*	Yes / Yes	9 ft (3.0m), 2x1/32in. ² (2x0.75mm ²)	central lateral	11/64"-15/64" (4.5-6mm) –	Ø 11/64"-15/64" (4.5-6mm) –

* Wall mounting is not suitable when using magnetic mounting

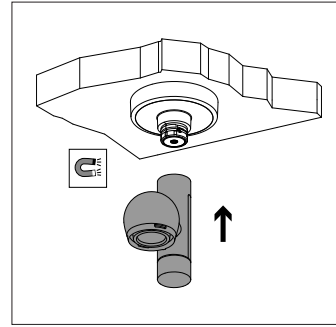
Notes on planning and installation

Tip:

Please note that a maximum of 12 light heads may be connected to one control gear unit. 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.

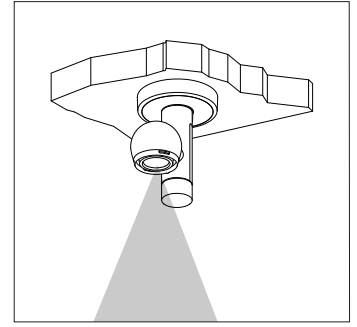


Light head dimensions



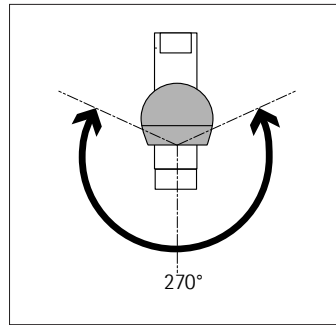
Magnetic attachment of the light head

The supplied light head can only be placed with the side marked "magnetic". Always fit the light head with light pressure. It cannot accommodate any additional light head or extension



Main alignment of light head

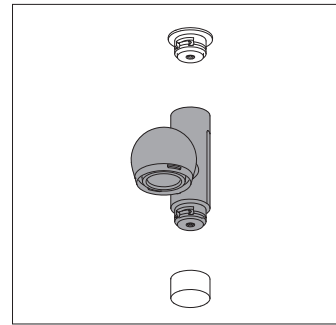
The main beam direction of the luminaire is always in the opposite direction of the mounting of the luminaire, regardless of the mounting location. With e.g. ceiling mounting, this means towards the base of the showcase.



Set up the luminaire

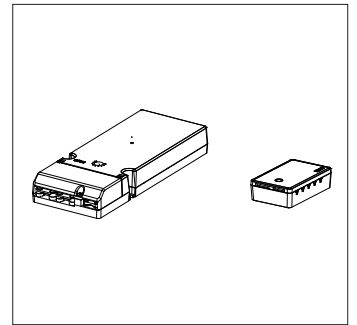
The light head has a swivel range of 270° towards the mounting plane and can be rotated 360° freely on the stem.

Avoid neighbouring light heads facing each other directly. This can cause unwanted overheating of the light head and reduce its service life.



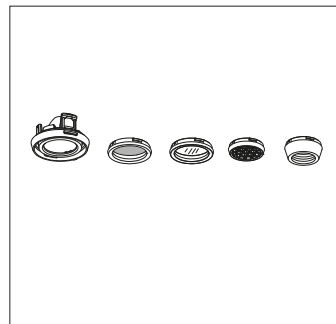
Extension light head

You can supplement your stem-mounted luminaire or surface-mounted luminaire with the extension light head. For ceiling and wall mounting, one extension light head is permitted; for floor-mounted luminaires, you may use two extension light heads between the supplied light head and the stem or fitting. See also page 8.



Control gear / distributor

To operate Axis luminaires, you always need the appropriate ERCO control gear. Only use the devices assigned to the luminaire in the data sheet. These enable "plug & play," which is a prerequisite for trouble-free operation with magnetic mounting. If multiple luminaires are to be connected, the ERCO Axis distributor is recommended. See also page 11.



Accessories

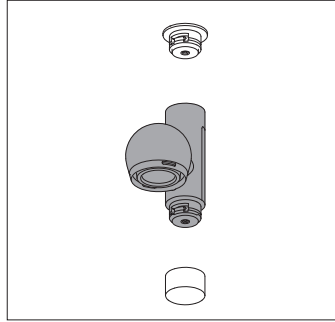
In addition to the extension, optical accessories and glare-control accessories are available. See also page 10.

Avoid neighbouring light heads facing each other directly. This can cause unwanted overheating of the light head and reduce its service life.

Axis planning aid

Components for stem luminaire and surface-mounted luminaire only

Extension light head



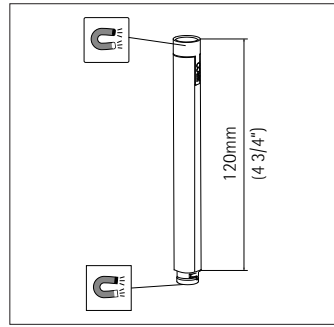
You can supplement your stem-mounted luminaire or surface-mounted luminaire with the extension light head. For ceiling and wall mounting, one extension light head is permitted; for floor-mounted luminaires, you may use two extension light heads between the supplied light head and the stem or fitting. If you need to use the extension luminaire as a terminating luminaire, an end cap is required to close the Axis luminaire circuit. When ordering, please note that the end caps differ for use on the stem-mounted luminaire and on the surface-mounted luminaire.



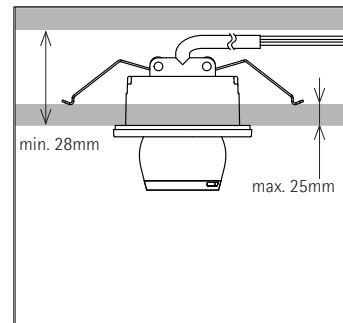
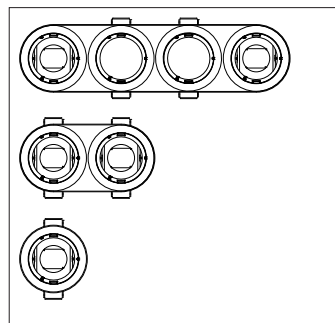
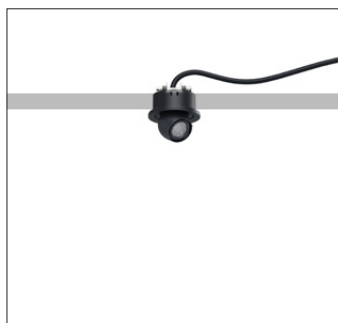
Extension



Application
If you require spacing between two light heads or a greater distance between the light head and the mounting surface, you can use the extension accessory. Use on wall-mounted luminaires is not permitted. For ceiling-mounted luminaires, one extension per luminaire is possible; for floor-mounted luminaires, two extensions are possible.



Magnetic attachment
Like the extension light head, the extension has a magnet on both ends for attachment to the light head or luminaire.



Tip:

Please note that a maximum of 12 light heads may be connected to one control gear unit. 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.

Mounting location

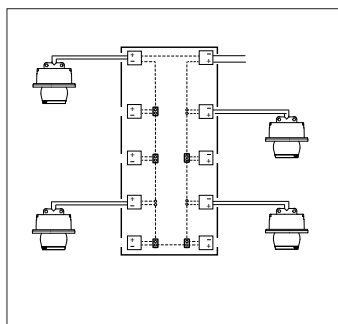
The luminaire is suitable for mounting on a showcase floor, ceiling or wall. The light heads are photometrically identical to those of the stem-mounted or surface-mounted luminaires.

Necessary accessories

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).

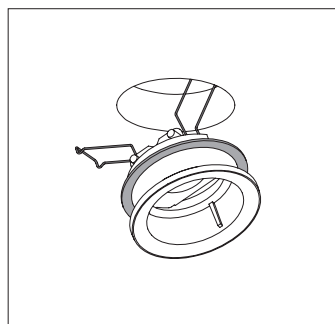
Recess depth

Minimum installation depth: 1-1/8" (28 mm). The luminaire must not be covered with insulating material.



Series connection

Axis luminaires must be connected in series; the ERCO distributor is recommended to simplify wiring. A single luminaire can also be connected directly to the control gear unit. Details can be found in this document on page xx. Be sure to observe the maximum cable lengths specified there, which depend on the number of light heads.

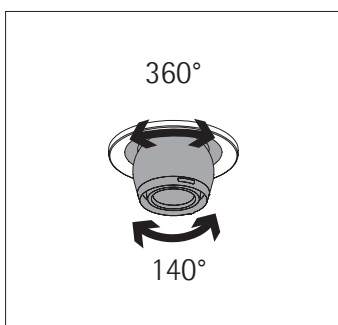


Installation

The luminaire is secured to the mounting frame using the spring clips. The seal prevents dust from entering the showcase. The luminaire simply snaps into the mounting frame.

Set up the luminaire

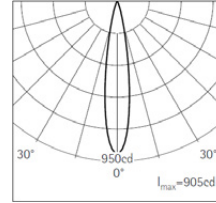
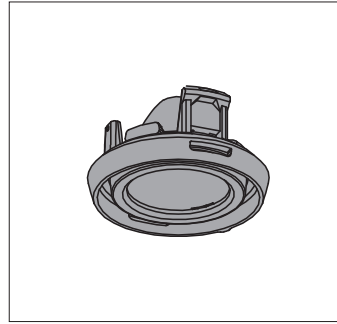
Tip: You can influence the light distribution of your luminaire using optical accessories. Details can be found on page 9



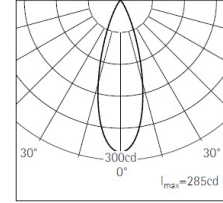
The light heads can be rotated max. 360°; the swivel angle is 70° to each side.

Avoid neighbouring light heads facing each other directly. This can cause unwanted overheating of the light head and reduce its service life.

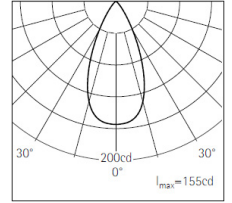
Lens units



Spot (17°)



Flood (32°)



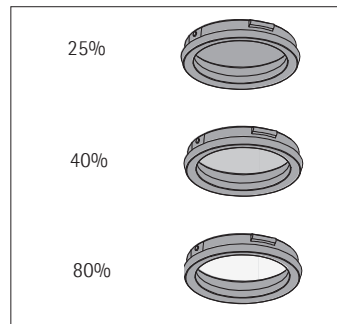
Wide flood (47°)

Lens units

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

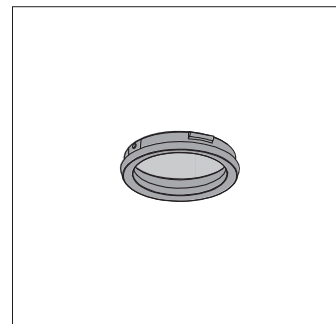
Tip:

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



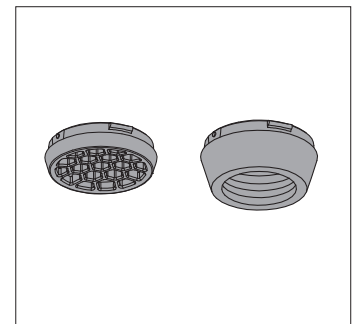
ND filter

ND filter (Neutral Density): With three different ND filters (25%, 40%, 80%), the luminous intensity of individual light heads can be reduced. This reduces the illuminance on the exhibit while leaving the spectrum unchanged. Note: Do not use this filter with Axis recessed spotlights V02.



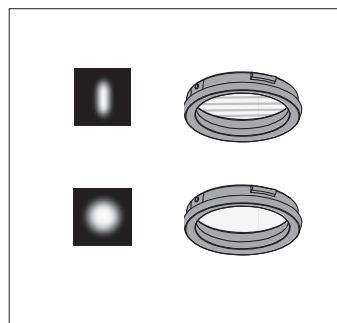
Blue light filter

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



Honeycomb louver, Snoot

For increased glare control, the honeycomb louver or snoot is available. Always use the honeycomb louver with the supplied softening lens.



Lenses

The sculpture lens shapes the beam into an oval with an aspect ratio of approx. 1:3. The light cone is aligned at 90° to the visible surface structure of the lenses.

The softening lens softens the otherwise hard beam edges.

Control gear for showcase luminaires

Tip:

If you want to control the luminaires via DALI, use the ERCO DALI Casambi Gateway.

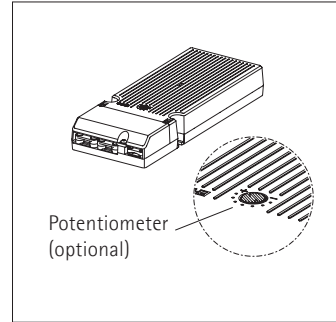
Two control gear units with different control methods are available for Axis showcase luminaires.

Control options

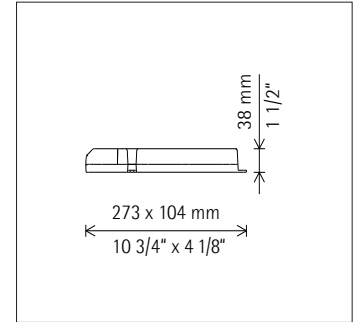
A switchable version with a potentiometer on the housing and a version with Casambi Bluetooth are available. Please note that this will dim all luminaires simultaneously. Dimming of a single light head is not possible. If required, use ND filters!

Hot-pluggable

With stem-mounted and surface-mounted luminaires, you can add, remove, reposition, or adjust light heads even when the luminaires are switched on, without damaging the control gear unit. Therefore, only use the specified control gear for Axis showcase luminaires.



AC012001 (On-board Dim)
AC012002 (Casambi Bluetooth)



Dimensions

Electrical planning and installation

Tip:

Only use ERCO Axis control gear units, as they are optimized for the respective Axis luminaires.

Series connection

The luminaires/light heads must be connected in series. The optional Axis distributor reduces the wiring effort.

Number of light heads

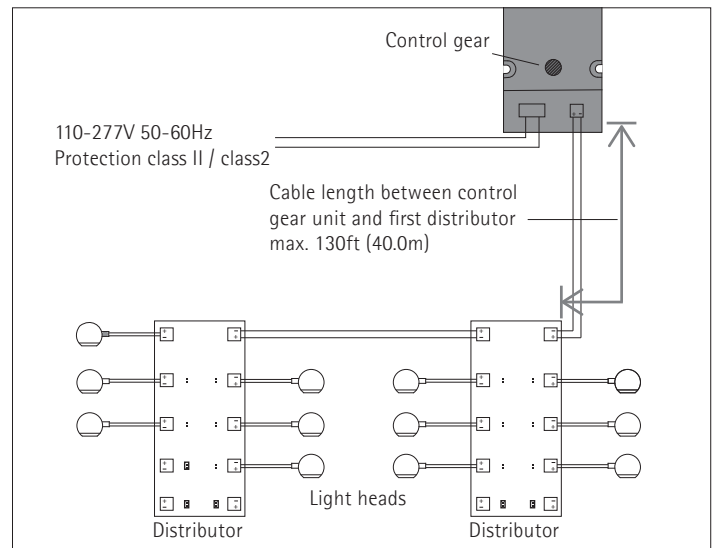
This control gear unit can supply up to 12 light heads with constant power. Please note the distinction between luminaire and light head: A stem-mounted luminaire or surface-mounted luminaire can accommodate up to 3 light heads. Only use one control gear unit per luminaire circuit. If more than one control gear unit is required in larger installations, the luminaire circuits must be galvanically isolated.

Cable length

Be sure to observe the cable lengths specified in the following drawings.

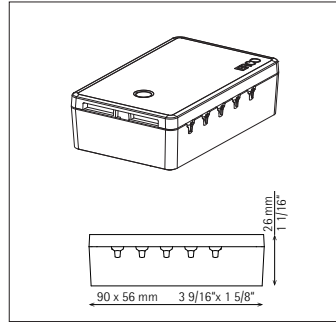
Through-wiring

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.



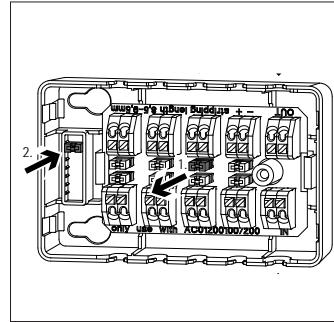
Connection example

Distributor Connection cable

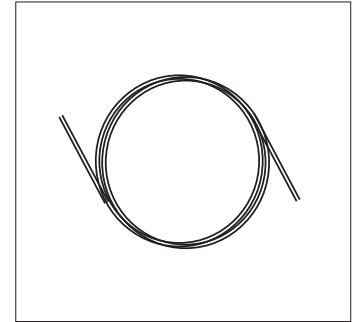


Distributor

The Axis distributor facilitates wiring. You may connect up to 9 luminaires/light heads and additional distributors. Always observe the specifications for the control gear regarding the number of light heads that may be connected.



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

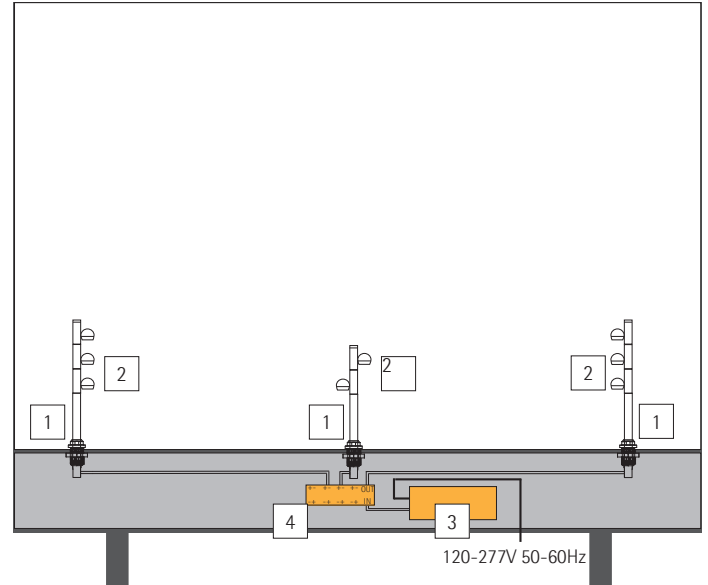
If the connecting cables of the luminaires are not sufficient, an additional extension cable of 32ft (10.0m) length is available as an accessory. This extends the connecting cables of the luminaires; also use the cable to connect the control gear and the distribution board. When extending the luminaire cables, note the possible total length of the connecting cables between control gear and distributors. Attention! This connection cable is not suitable for mains connection. Only use it on the output side of the control gear!

Sample installations

Stem 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.

In general, 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 manifold - 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 AC012001
4	1	ERCO Axis distributor

Sample installations

Stem-mounted luminaires and semi-recessed luminaires

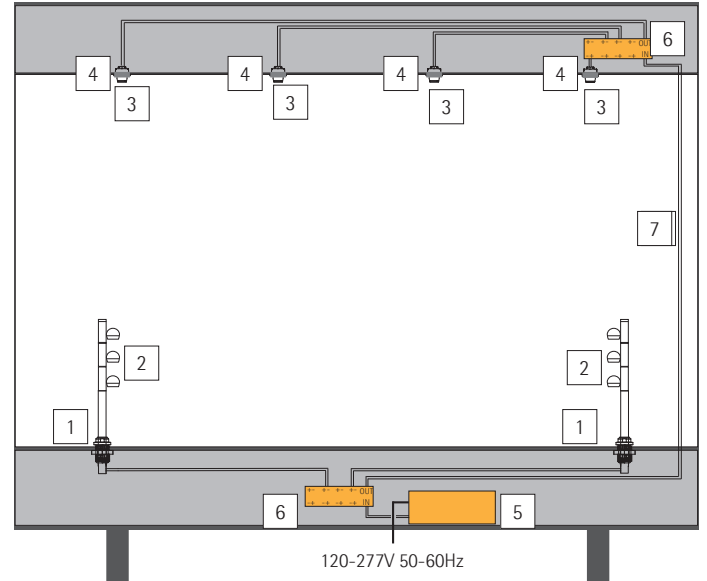
The sample showcase has a space at the top and bottom that can be used for installation.

The upper room is connected via a 2-wire line and another distributor.

The electrical connection is made in the lower compartment 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 manifold - so heat input does not have to be taken into account for the distributor.



Material requirements

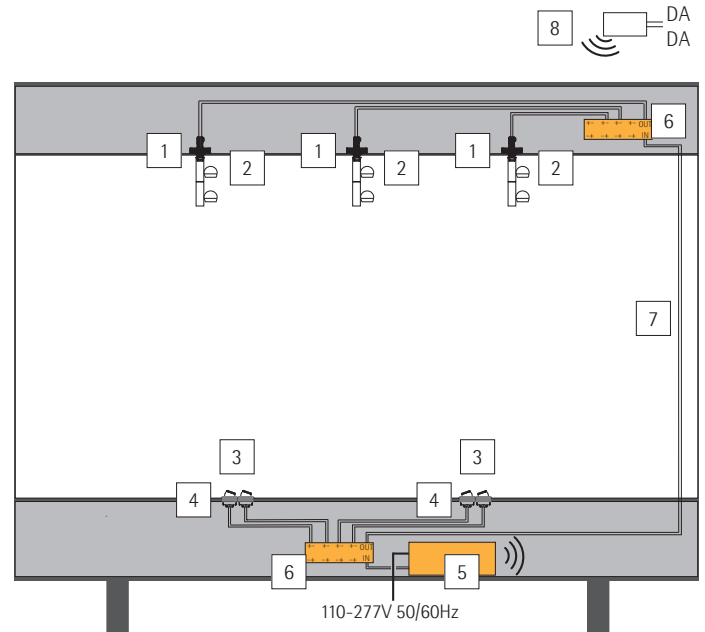
For this sample installation with a total of 10 light heads you will need:

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	mounting frame
5	1	ERCO Axis control gear AC012001
6	2	ERCO Axis distributor
7	1	32ft (10.0m) wire 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-conductor 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 manifold - 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	2-fold frame
5	1	ERCO Axis control gear AC012002
6	2	ERCO Axis distributor
7	1	32ft (10.0m) wire extension
8	1	ERCO DALI-Casambi Gateway

Sample installations

Stem-mounted luminaires and semi-recessed luminaires

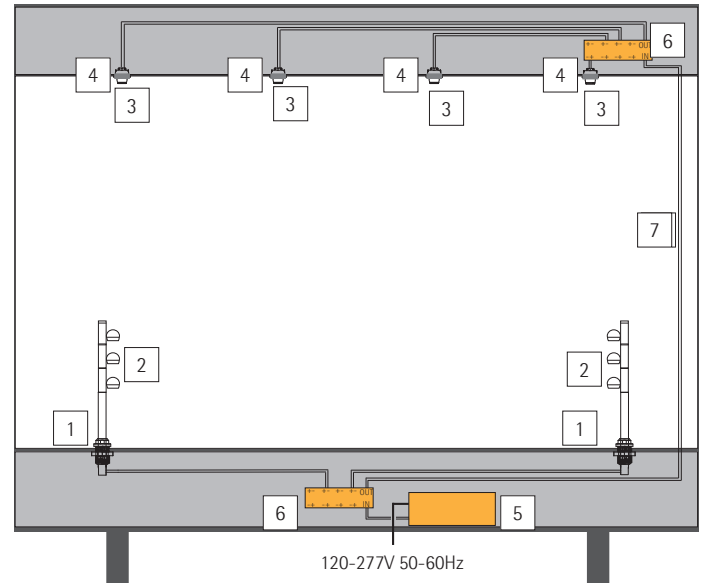
The sample showcase has a space at the top and bottom that can be used for installation.

The upper room is connected via a 2-wire line and another distributor.

The electrical connection is made in the lower compartment 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 manifold - 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	mounting frame
5	1	ERCO Axis control gear AC012001
6	2	ERCO Axis distributor
7	1	32ft (10.0m) wire extension

	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, wall mounting, ceiling mounting	Floor mounting, wall mounting, ceiling mounting	on stem-mounted or surface-mounted luminaire	Floor mounting, wall mounting, ceiling mounting
Wire length	3ft 3" (1.0m)	3ft 3" (1.0m) / 10ft (3.0m)	-	3ft 3" (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	2-1/2"-12" (64-306mm) / 12" (306mm)* (light head)	1-7/8" (47mm) / 2-3/16" (55mm)**	1-7/8" (47mm)	11/16" (17mm)
Recess depth	min. 2-11/64" (55mm) / >1" (25mm)*	1-13/16" (46mm) / 0-1/4" (0-6mm)**	-	1-1/8" (28mm)
Mounting hole	1" (25mm) / 1/2" (12mm)*	15/32" (12mm) / 0-1/4" (0-6mm)**	-	1-3/8" (35mm)
Material thickness floor / ceiling	3/64"-1" (1-25mm)	3/64"-1" (1-25mm)		3/64"-1" (1-25mm)
Necessary accessories	Axis control gear only AC012001 AC012002	Axis control gear only AC012001 AC012002	For stem luminaire and surface-mounted luminaire only	- Axis control gear - 1/2/4-fold frame
Accessories	- Distributor - Lens units, sculpture lens, softening lens - ND filter, Blue light filter - Snoot, honeycomb louver - 32ft (10.0m) wire extension	- Distributor - Lens units, sculpture lens, softening lens - ND filter, Blue light filter - Snoot, honeycomb louver - 32ft (10.0m) wire extension	- Lens units, sculpture lens, softening lens - ND filter, Blue light filter - Snoot, honeycomb louver - Top/bottom end cap (only if the extension light head is used as an end light head)	- Distributor - Lens units, sculpture lens, softening lens - ND filter, Blue light filter - Snoot, honeycomb louver - 32ft (10.0m) wire extension

* height-adjustable / fixed

**Fastening with central knurled nut / screws or magnetic fastening

Electrical accessories	Control gear AC012001 / AC012002	Distributor	Wire 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. AWG14 (2.5mm ²) Secondary max. AWG16 (1.5mm ²)	AWG24-22 (0.2-0.35 mm ²) ∅ 5/32" (4mm)	2 x AWG22 (0.35mm ²)
Operating devices per circuit breaker B16			
Light control	Potentiometer Casambi Bluetooth		
Dimensions (L x W x H)	10-3/4" x 2-1/4" x 1-1/2" (273 x 104 x 38mm)	3-7/8" x 2-1/4" x 1" (90 x 56 x 26mm)	32ft (10.0m)