



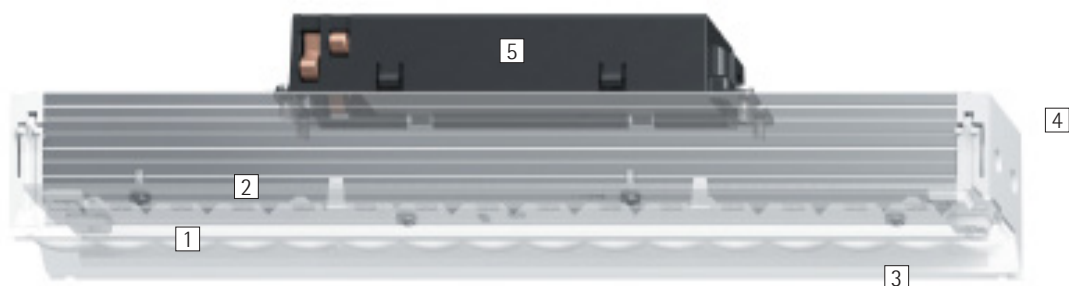
Invia 48V Light Structure – Drawing lines and illuminating spaces

Modular continuous line system with lens technology for all architectural lighting tasks

The Invia 48V continuous line lighting system draws lines that give rooms and spaces a sense of dynamism and emphasise their dimensions. Invia simultaneously offers complete architectural lighting with efficient and precise light distributions for room heights up to 8m: from linear wallwashers and downlights to spotlights on the Minirail 48V track insert and for projects ranging from public buildings and offices to museums. The system is suitable for recessing,

surface mounting and pendant mounting. Four conductors for 48V and the DALI control line are integrated in the basic profile. The luminaire inserts snap into place without tools to create uninterrupted light lines – even in corners and even with wallwashers. Digital connectivity, upright inserts and tunable white make Invia ideal for Human Centric Lighting.

Invia 48V Light Structure



Structure and characteristics

The features described here are typical of products in this range. Special versions may offer additional or varying features. A comprehensive description of the features of individual products can be found on our website.

1 ERCO lens system (downlight)

- Made of optical polymer
- Light distributions: wide flood, extra wide flood or diffuse

or

Reflector (wallwasher)

- Aluminium, silver anodised, highly specular

or

Diffuser (uplight)

- Luminaire consists of 3 permanently connected units
- Polymer

2 ERCO LED-module

- Mid-power LEDs: warm white (2700K or 3000K), neutral white (3500K or 4000K) or tunable white (2700-6000K)

3 Anti-glare cover

- Polymer
- Downlight: white (RAL9016) or black
- Wallwasher: white (RAL9002) or black

4 Housing

- Aluminium profile/polymer

5 Control gear

- Switchable or DALI dimmable
- Control with Casambi Bluetooth via accessories: please order Casambi DALI Gateway separately

6 Profile

- Aluminium profile, can be shortened on site
- Shapes: linear or corner
- 2 insulated copper conductors, 4.5mm². 1 circuit, max. 10A
- 2 insulated copper conductors, 4.5mm², for connection to DALI control line
- Underside: for accommodating luminaires
- Surface-mounted profile/pendant profile: white (RAL9002), black or silver powder-coated. Upper side for mounting to ceiling or for accommodating pendant accessories, uplights or connection cable
- Covered recessed profile: white (RAL9002) or black powder-coated, flanges for ceiling panels
- Flush recessed profile: mounting in drywall ceilings. Adjustable for ceiling thicknesses 12.5-25mm

Variants on request

- Profile: 10,000 further colours
- Please contact your ERCO consultant.



Design and application:
www.erco.com/invia-48V

Invia 48V Light Structure



Linear wallwashing
Linear Invia 48V wallwashers illuminate vertical surfaces extremely efficiently and with excellent uniformity, even around corners.



Suitable for office workstations
ERCO develops luminaires with the specifications of good glare control and high visual comfort. UGR values are used as support for purely norm-referenced lighting. With downlights though this should not be carried out using 'blanket' values, but should be implemented according to the individual arrangement of luminaires in the room.



Various luminaire inserts
You can insert Invia 48V luminaires into the profile without tools. Downlights for various applications, an uplight and wallwashers with tunable white enable qualitative lighting concepts.



Tunable white technology
Just as the colour temperature outdoors changes continuously during the day, the colour temperature of the lighting can be adjusted indoors to e.g. support lighting concepts for Human Centric Lighting.



Integration of 48V spotlights
From accentuation with a 5° narrow spot to zoom optics and precise framing with tunable white and RGBW. By integrating Minirail 48V, you can use all ERCO 48V spotlights.

Special characteristics	
	Outstanding uniformity
	Suitable for office workstations
	Different light distributions
	Tunable white
	Integration of 48V spotlights

	ERCO mid-power LEDs
	Different light colours

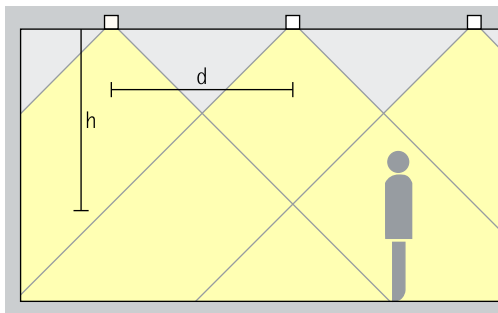
	Excellent thermal management
	EMC-optimised
	Various housing colours
	Various construction sizes
	Easy installation
	Continuous line arrangements are possible

	Switchable
	DALI controllable
	Casambi Bluetooth

Invia 48V Light Structure – Luminaire arrangement

Downlights

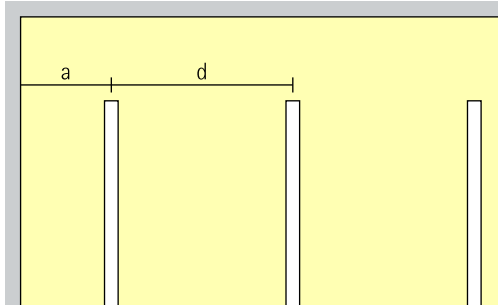
Wide flood, Extra wide flood, Diffuse



General lighting

For uniform general lighting with high visual comfort, the luminaire spacing (d) between two linear Invia 48V downlights may be up to 1.5 times the height (h) of the luminaire above the working plane (rough guide).

Arrangement: $d \leq 1.5 \times h$

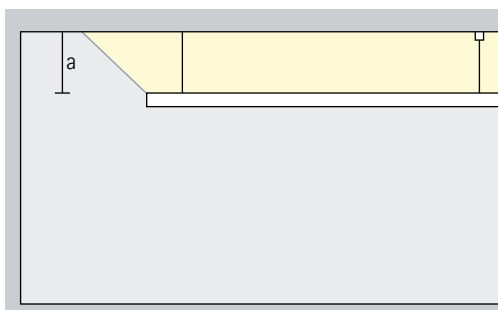


The wall offset should be half the luminaire spacing.

Arrangement: $a = d / 2$

Uplights

Diffuse



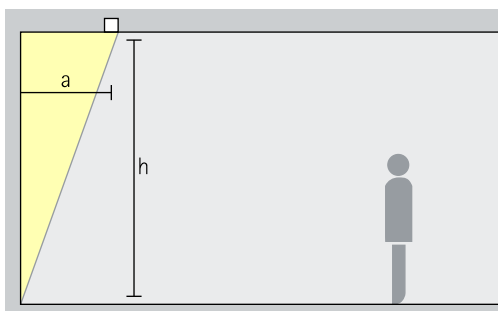
General lighting

Indirect lighting on bright ceilings increases the visual comfort due to diffusely reflected light. The room also appears to be higher. The profile should be suspended from a height of at least 0.5m.

Arrangement: $a \geq 0.5\text{m}$

Wallwasher

Wallwash



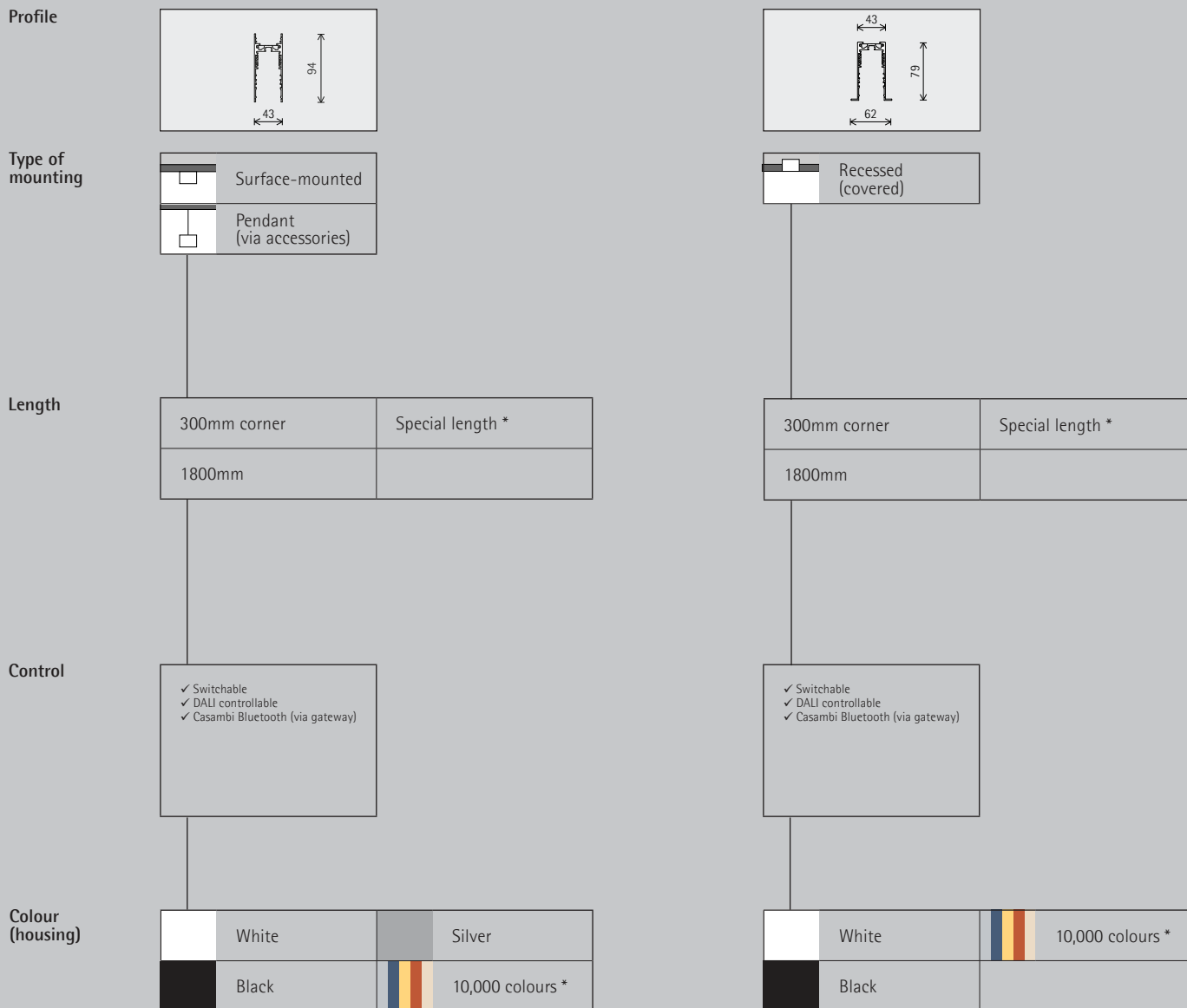
Wallwashing

For uniform vertical lighting, the distance to the wall (a) of linear Invia 48V wallwashers should be at least one third of the room height (h).







Arrangement: $a = 0,4 \times h$

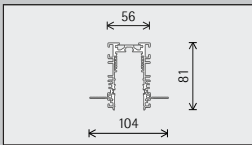
Optimal wall distances for individual products are specified in the wallwasher tables.

Invia 48V light structure



Accessories

	Mounting kit for Minirail		Suspensions		Power supply units
	Electrical connectors		Mounting devices		Casambi DALI gateway



Recessed
(flush)

300mm corner	Special length *
1800mm	

- ✓ Switchable
- ✓ DALI controllable
- ✓ Casambi Bluetooth (via gateway)

* available on request

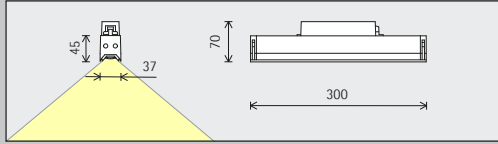
Article numbers and planning data:
www.erco.com/022544

Design and application:
www.erco.com/invia-48V



Invia 48V light structure

Size
(luminaire)



300mm

LED module
Maximum value
with 4000K
CRI 82

4.1W/749lm	8.2W/1498lm (corner)	5.4W/771lm	10.8W/1542lm (corner)
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Light colour

	2700K CRI 92		3500K CRI 92
	3000K CRI 82		4000K CRI 82
	3000K CRI 92		4000K CRI 92

	Tunable white
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Downlights		Wallwasher	
	Wide flood		Wallwash
	Extra wide flood		
	Diffuse		

Downlights		Wallwasher	
	Wide flood		Wallwash
	Extra wide flood		
	Diffuse		

Control

	Switchable
	DALI controllable
	Casambi Bluetooth + DALI via Gateway

	DALI controllable
	Casambi Bluetooth + DALI via Gateway

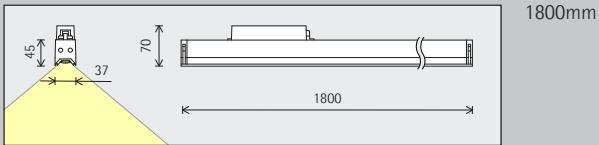
Colour
(anti-glare
cover)

	White
	Black

	White
	Black

Accessories

	Mounting kit for Minirail		Suspensions		Power supply units
	Electrical connectors		Mounting devices		Casambi DALI gateway



24.4W/4493lm

32.4W/4627lm

	2700K CRI 92		3500K CRI 92
	3000K CRI 82		4000K CRI 82
	3000K CRI 92		4000K CRI 92

Tunable white

Downlights		Wallwasher	
	Wide flood		Wallwash
	Extra wide flood		Uplight
	Diffuse		Diffuse

Downlights		Wallwasher	
	Wide flood		Wallwash
	Extra wide flood		Uplight
	Diffuse		Diffuse

	Switchable
	DALI controllable
	Casambi Bluetooth + DALI via Gateway

	DALI controllable
	Casambi Bluetooth + DALI via Gateway

	White
	Black

	White
	Black

ERCO Minirail 48V products
 Miniaturised, flexible and efficient.
 The low voltage system from ERCO enables high quality lighting concepts with extremely compact tracks and spotlights.

For an overview of our Minirail 48V luminaires as well as 48V track, visit www.erco.com/48V

Article numbers and planning data:
www.erco.com/022544

Design and application:
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Ernest Wayland Early Volcanism

1923 - 2015
Magnus from the mantle or lower crust flows through the crust towards the surface.

On Earth, volcanoes are most often found where tectonic plates are diverging or converging, and most are found under water. For example, a mid-ocean ridge, such as the Mid-Atlantic Ridge, has volcanoes caused by divergent tectonic plates whereas the Pacific Ring of Fire has volcanoes caused by convergent tectonic plates. Volcanoes can also form where there is stretching and thinning of the earth's plates, such as in the East African Rift and the Basin and Range volcanic field and Rio Grande rift in North America. Volcanism away from plate boundaries has been predicted to arise from spreading sheets from the open mantle boundary 3,000 kilometers (1,900 mi) deep in the Earth. This results in hotspot volcanism, of which the Hawaiian hotspot is an example. Volcanoes are usually not created where two tectonic plates slide past one another. "Take the lid!"

