



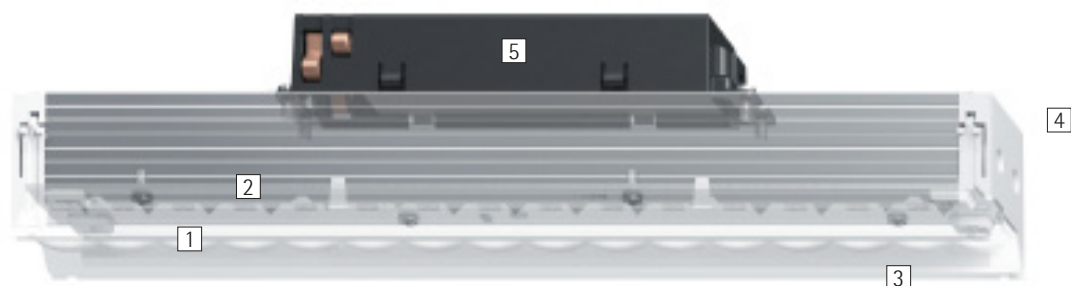
## Invia 48V Light Structure – Drawing lines and illuminating spaces

### **Modular continuous row system with lens technology for all architectural lighting tasks**

The Invia 48V continuous row lighting system draws lines that give rooms and spaces a sense of dynamism and emphasize their dimensions. Invia simultaneously offers fully-fledged architectural lighting with efficient and precise light distributions for room heights up to 26ft (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 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)

- Aluminum, silver anodized, 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

- Aluminum profile/polymer

### 5 Control gear

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

### 6 Profile

- Aluminum profile, can be shortened on site
- Shapes: linear or corner
- 2 insulated copper conductors, 4.5mm<sup>2</sup>. 1 circuit, max. 10A
- 2 insulated copper conductors, 4.5mm<sup>2</sup>, 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 colors
- Please contact your ERCO consultant.



Design and application:  
[www.erco.com/invia-48V](http://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.



**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 color temperature outdoors changes continuously during the day, the color 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 Mini-rail 48V, you can use all ERCO 48V spotlights.

Special characteristics	
	Outstanding uniformity
	Different light distributions
	Tunable white
	Integration of 48V spotlights

	ERCO mid-power LEDs
	Different light colors

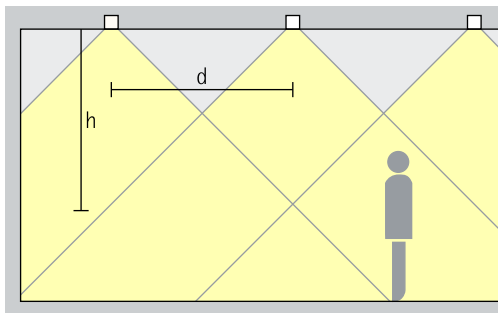
	Excellent thermal management
	EMC-optimized
	Various housing colors
	Various construction sizes
	Easy installation
	Continuous line arrangements are possible

	Switchable
	DALI controllable
	Casambi Bluetooth

# Invia 48V Light Structure – Luminaire arrangement

## Downlights

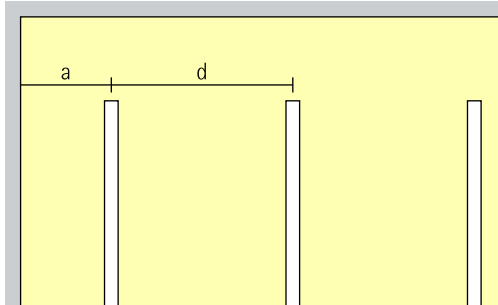
Wide flood, Extra wide flood, Diffuse



## 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:  $d \leq 1.5 \times h$

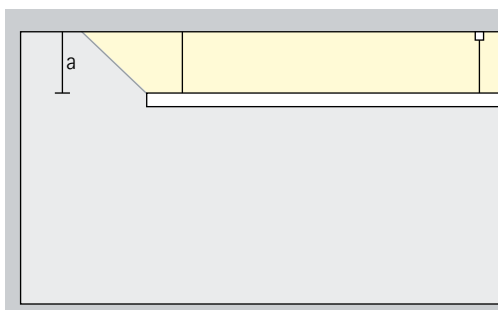


The wall offset should be half the luminaire spacing.

Arrangement:  $a = d / 2$

## Uplights

Diffuse



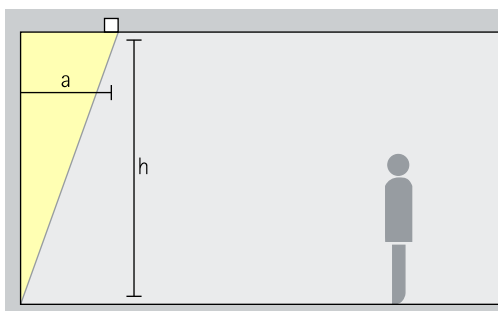
## General lighting

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).

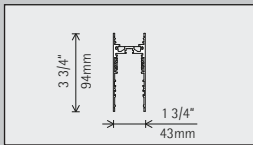
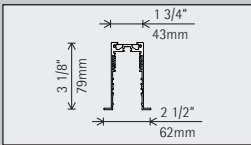









Arrangement:  $a = 0,4 \times h$

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







Invia 48V modular  
in offices. Visual-  
ization: Electric  
Gobo

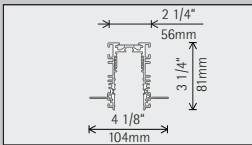


# Invia 48V light structure

Profile				
Type of mounting	 Surface-mounted		 Recessed (covered)	
Length	11 13/16" corner	Special length *	11 13/16" corner	Special length *
	70 7/8"		70 7/8"	
Control	<ul style="list-style-type: none"> <li>✓ Switchable</li> <li>✓ DALI controllable</li> <li>✓ Casambi Bluetooth (via gateway)</li> </ul>		<ul style="list-style-type: none"> <li>✓ Switchable</li> <li>✓ DALI controllable</li> <li>✓ Casambi Bluetooth (via gateway)</li> </ul>	
Color (housing)	 White	 Silver	 White	 10,000 colors *
	 Black	 10,000 colors *	 Black	

## Accessories

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



Recessed  
(flush)

11 13/16" corner	Special length *
70 7/8"	

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

\* available on request

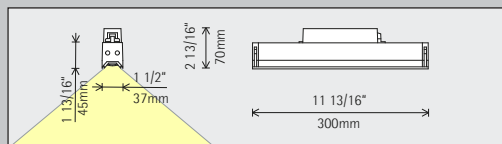
Article numbers and planning data:  
[www.erco.com/022544-us](http://www.erco.com/022544-us)

Design and application:  
[www.erco.com/invia-48v/en\\_us](http://www.erco.com/invia-48v/en_us)



# Invia 48V light structure

Size (luminaire)



11 13/16"

LED module  
Maximum value with 4000K CRI 82

4.1W/749lm	8.2W/1498lm (corner)
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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

Color (anti-glare cover)

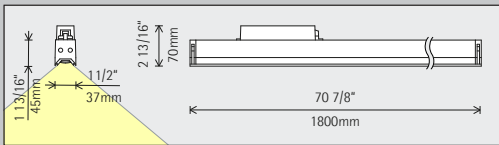
	White
	Black

	White
	Black

Accessories

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





70 7/8"

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

Article numbers and planning data:  
[www.erco.com/022544-us](http://www.erco.com/022544-us)

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## Ernest Wayland Early Volcanism

1923 - 2015  
Magnus from the mantle or lower crust rises 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!"

