



# TWINDOT

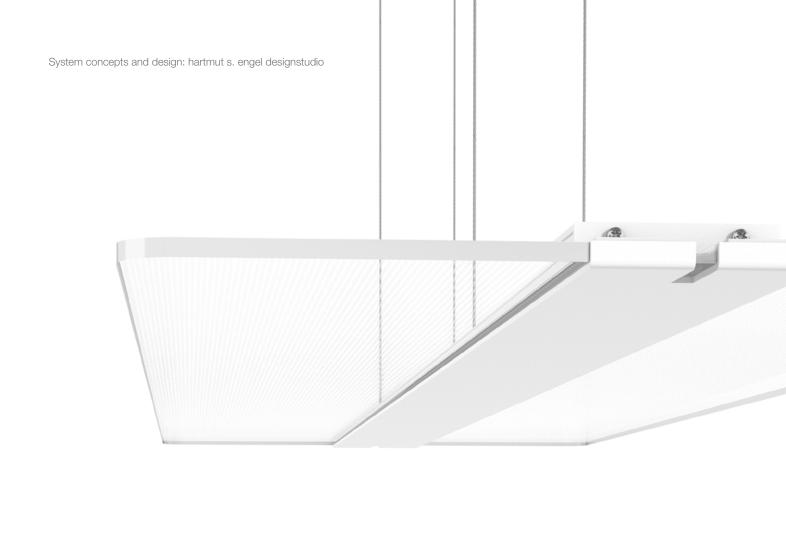
TRANSPARENT LED PENDANT LUMINAIRE SYSTEMS
FOR GENTLE LIGHT



# The elegance of invisible light control

Over the years, whilst carrying out my design experiments on prototypes for innovative LED luminaires, I have been fascinated with the design potential of "invisible light control". It's always amazing to see how the spotlighting of LED light in transparent perspex can produce fullness of light from this glass as if by magic. Microfine structures alone are responsible for the decoupling and emission of light in the room. The total reflection of the light waves in the perspex leads to the magical transformation of transparency into light. The room is bathed in a glowing and gentle light with soft shadows. A real pleasure to see and work by. Gentle light poetry becomes a sensual experience.

hartmut s. engel, industrial designer









Pendant luminaire systems

### GENTLE LIGHTING - POETRY FOR THE EYES

The ubiquity of mobile screens in smartphones, tablets and laptops in today's world means that glare-free lighting is a requirement that is not just confined to the office. In future, there will be a demand for a pleasant lighting atmosphere restricting direct glare for every environment. At RZB, our guiding principle is to focus on developing the kind of lighting systems that provide glare-free, gentle LED light in outstanding quality through transparent PMMA surfaces for universal use. The intention is also to achieve a magical lighting effect with the characteristics of "minimalist form" and "transparent light control", which make the luminaires suitable for open use in any architectural environment. These stimulating lighting systems are also ideal for supporting the biodynamic daylight rhythm (HCL). These tunable white versions are particularly good for users' emotional well-being.

RZB has created the TWINDOT range of LED suspended luminaires as the first product family to achieve a magical lighting effect. These lighting systems are based on the two designs for a new generation of light-decoupled microprismatic and authentic system design by the reputed designer Hartmut S. Engel, with whom RZB has worked successfully for a long time now.

The "TWINDOT light technology" ensures the success of the transformation: the innovative microprismatic transforms the total reflection of the light waves in the transparent perspex into a magical light. The room is bathed in a glowing and gentle light with soft shadows and glare-free light to see and work by. Gentle light poetry becomes a sensual experience.

## ADDITIONAL ADVANTAGES

- Made in Germany
- Brand new, perfectly glare-free TWINDOT prismatic
- Extremely uniform illumination of the ceiling thanks to above average wide distribution of indirect light
- Pleasantly gentle light with soft shadows
- Casambi smart+free Bluetooth® control and daylight and presence sensor optional
- Initial setting of luminaires with sensor complying with standards can be individually adjusted via app if necessary
- Tunable white version available
- Continuous lines can be created with standard luminaires to be positioned either in the beginning, in the middle or in the end of the row.
- Ideal for office areas (UGR < 19) and environments with computer screens in accordance with EN 12464-1
- Luminous efficiency up to 130 lm/W
- Light output 6,500 lm for 1,200 format and 8,100 lm for 1,500 format direct/indirect light emission 55 % / 45 %
- **CRI 80**
- LED service life > 60,000 hours L100 controlled CLO For a constant light output throughout the entire lifetime of the LEDs



















# TWIN**DOT**®

Transformation from transparency into light



# Gentle light

The mystical transformation of a transparent surface into bright fullness of light in the room is sure to enchant every observer









# TWINDOT®

LED light technology for perfect vision

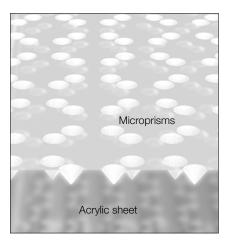
# TWINDOT LIGHT TECHNOLOGY

With superior efficiency and very wide light emission for pleasantly gentle light with soft shadows

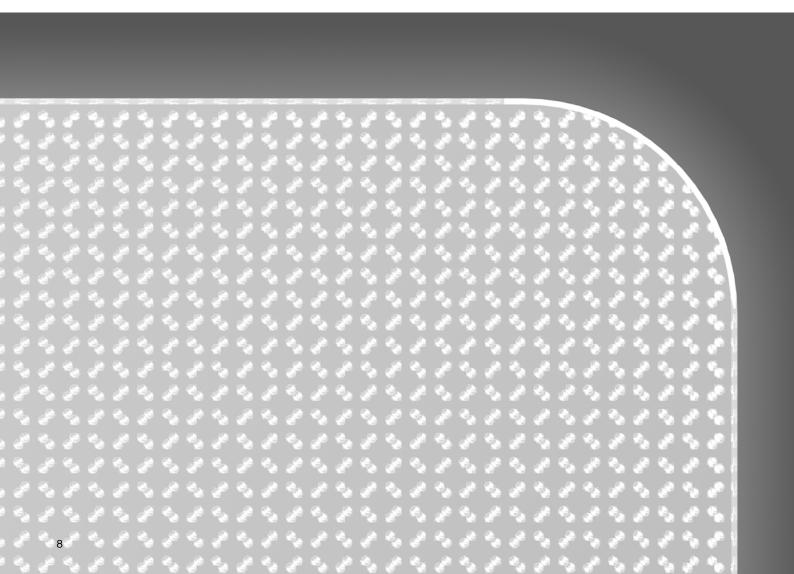
A transparent light guide measuring just 6 mm thin and made of UV-resistant acrylic glass (PMMA) is equipped with the TWINDOT microprism structure in a hot-embossing process. This structure consists of microfine twin prisms, which have been applied to the top surface of an acrylic sheet in a defined angle matrix.

This serves to decouple the light and bathe the room in gentle, glare-free lighting with soft shadows -perfect for evenly lit ceilings, walls and work surfaces, and ideal for a wide variety of screen-based tasks.

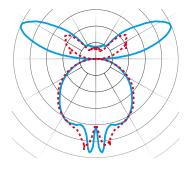
Direct/indirect light emission 55 % / 45 %.



Cut through the TWINDOT microprism structure







# **PHOTOMETRICS**

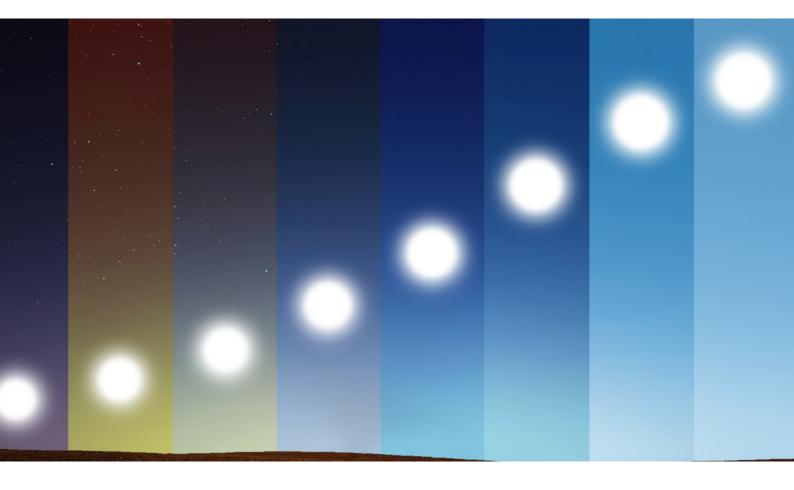
- Luminous efficiency up to 130 lm/W
- Ideal for office areas (UGR < 19) and environments with computer screens in accordance with EN 12464-1
- LED light output up to 8.100 lm
- Colour temperature 3.000 K, 4.000 K or Tunable White
- **CRI 80**
- Pleasantly gentle light with soft shadows
- Direct/indirect light emission 55 % / 45 %
- LED service life > 60,000 hours L100 controlled CLO

  For a constant light output throughout the entire lifetime of the LEDs
- Cther light outputs on request

# TWINDOT®

Human Centric Lighting (HCL)

Premium-quality lighting equipment and intelligent controls for a comprehensive HCL concept





### Moods

Changing light moods in the dynamic rhythm of daylight can have an extremely positive influence on wellbeing.

Light management systems such as RZB light control+3 with the appropriate sensor technology can automatically regulate these processes. Versions with the RZB smart+free Bluetooth® component allow personal access to light scenarios controlled by an app.

The fields of application for Human Centric Lighting range from private households, offices, common rooms and conference rooms to rooms used in the healthcare sector.









# HCL: Daylight simulation for a dynamic circadian rhythm

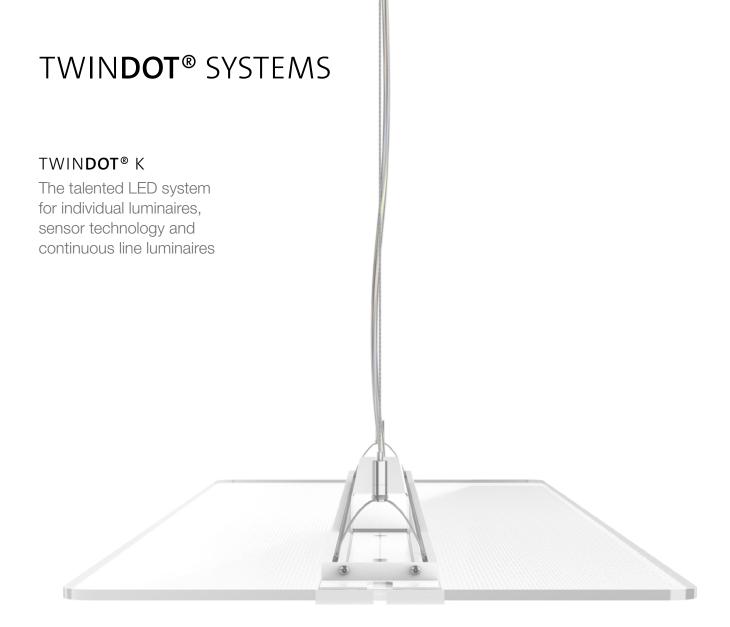
The human circadian rhythm is determined by the course of sunlight and influences the release or inhibition of the sleep hormone melatonin.

The blue part of natural daylight encourages alertness and concentration.

Biologically effective light in "tunable white" versions aims to support the hormone control process by simulating the light colour and intensity of the natural course of daylight.





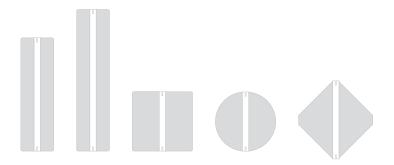


- 2 point steel cable suspension with transparent power cable, height adjustable steplessly between 500 and 1,200 mm. The horizontal is as well steplessly adjustable.
- Luminaires are available in two lengths. Continuous lines can be created with standard luminaires to be positioned either in the beginning, in the middle or in the end of the row.
- Compact, fitted drivers facilitate a wide range of control, sensor and continuous line options
- Casambi smart+free Bluetooth® control or daylight and presence sensor optional
- Initial setting of luminaires with sensor complying with standards can be individually adjusted via app if necessary
- Tunable White option available
- Featuring sophisticated TWINDOT Light Technology





- 4 point steel cable suspension. Power supply through suspension cable, height adjustable steplessly between 500 and 1,200 mm.
- Choice of four impressive single luminaire formats
- Super-flat, minimalistic appearance without any unwelcome cables or drivers
- Casambi smart+free Bluetooth® Control as an option
- Tunable White option available for TWINDOT S Square/Round/Diamond
- Featuring sophisticated TWINDOT Light Technology



# TWINDOT® K

Details at a glance

The talented LED system for individual luminaires, sensor technology and continuous line luminaires



Premium-quality LEDs offer exceptional light quality in light colours 830 or 840, or from 827 to 865 in the Tunable White option, which can be controlled via DALI or Bluetooth® (Casambi smart+free) Light distribution is up to 55 % direct

and up to 45 % indirect

A highly polished reflection trim finishes off the cover with TWINDOT prismatic

The TWINDOT K pendant luminaire systems feature a modular design, making them suitable for straightforward sandwich constructions for an extensive product family.

This universal design concept offers options for mechanical and electrical connection to multiple luminaires and continuous line luminaires.

The accessory set includes all the required com-

The accessory set includes all the required components. This connection is entirely reversible in the event of changing requirements.

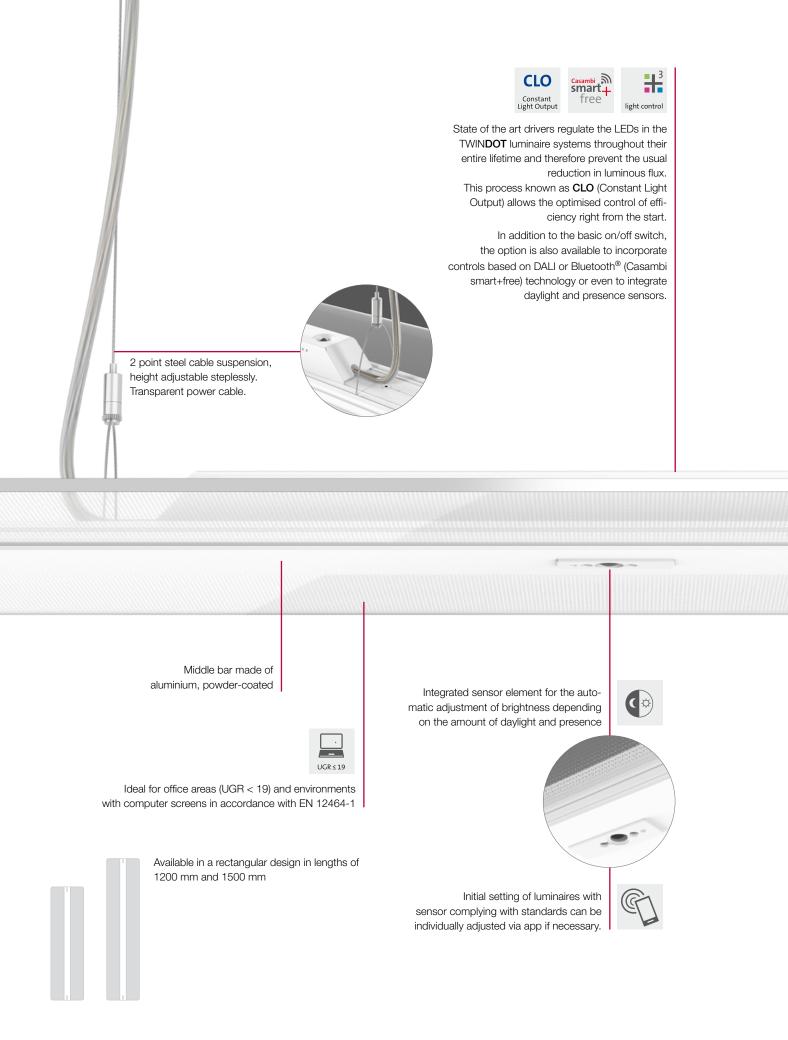




Transparent light guide measuring just 6 mm thick and made of UV-resistant acrylic glass (PMMA) with TWINDOT microprism structure.

The TWINDOT structure consists of microfine twin prisms, which have been applied to the top surface of an acrylic cover by means of a hot-embossing process in a defined angle matrix.







# TWINDOT® K

# Product overview



#### Pendant luminaires | TWINDOT K

Type of protection: IP 20 Protection class: I Impact Protection: IK03

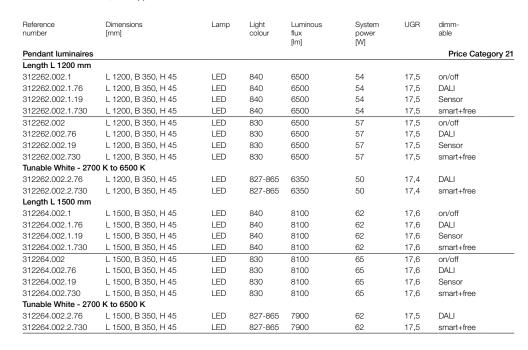
Suspension Length: 500-1200 mm

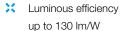
Extremely flat and frameless appearance. Middle bar made of aluminium extrusion profile, powder-coated with integrated converter. Transparent light guide made of UV-resistant acrylic glass (PMMA). TWINDOT technology light control, light emission direct 55% / indirect 45%. UGR ≤ 19 (screen-compliant according to EN-12464-1). 2 point steel cable suspension, height adjustable steplessly with transparent power cable.

Expandable to continuous line luminaire with connection kit (on/off or DALI models).

Available colour: 2 = white

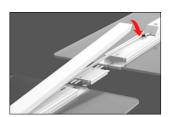
Versions with Casambi smart+free Bluetooth® control for wireless network and operation using Android / iOS devices, free app available for download.





UGR < 19





Accessories | Decorative recessed pendant set Mounting kit for aesthetically pleasing ceiling connection of pendant luminaires.

Decorative recesse	d pendant set		Price Category 11
982565.002*	L 146, B 60, H 12, HE 80	Mounting kit for plasterboard ceilings	
982564.009	L 180, B 148, H 124, HE 130	Mounting set for concrete ceilings	
982563.009	L 180, B 180, H 124, HE 130	Mounting set for plastered concrete ceilings	

<sup>\*</sup> Not suitable for DALL version.

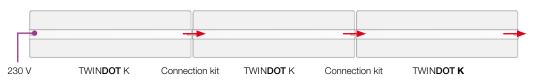
## Accessories | Connection kit for multiple luminaires and light channel

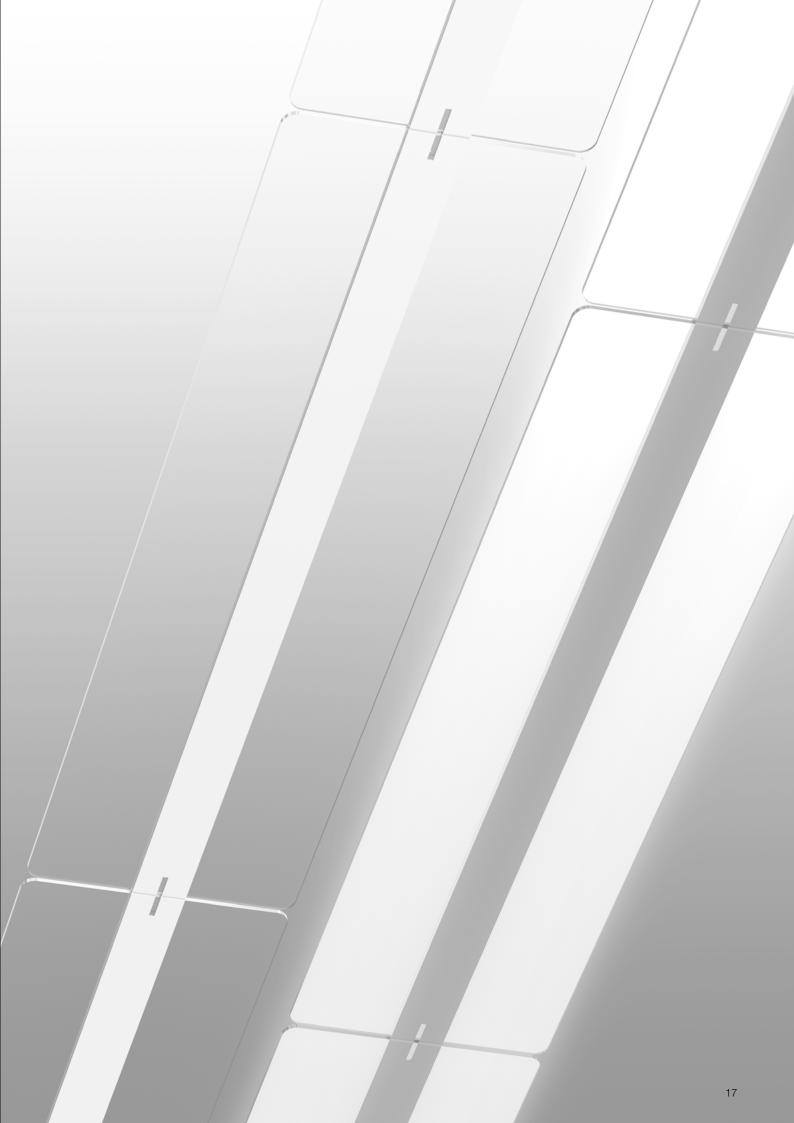
The connection kit contains all necessary components for the mechanical and electrical connection of two TWINDOT K luminaires. Not suitable for luminaires with sensors or Casambi smart+free controls.

Connection kit for	Price Category 21		
982449.002	L 567, B 66, H 24	Connection kit 3-pin L 1200 mm (on/off variant)	
982449.012	L 567, B 66, H 24	Connection kit 5-pin L 1200 mm (DALI variant)	
982450.002	L 847, B 66, H 24	Connection kit 3-pin L 1500 mm (on/off variant)	
982450.012	L 847, B 66, H 24	Connection kit 5-pin L 1500 mm (DALI variant)	

TWINDOT K continuous line comprising up to ten connected luminaires.

All TWINDOT K single luminaires are suitable for use as on/off or DALI models. The connections are entirely reversible.





Details at a glance

The light frame at just 6 mm determines the extra flat design The luminaire appears to float almost immaterially in the room



Premium-quality LEDs offer exceptional light quality in light colours 830 or 840, or from 827 to 865 in the Tunable White option (for TWINDOT S Square, Round and Diamond only), which can be controlled via DALI or Bluetooth® (Casambi smart+free)

Light distribution is up to 55% direct and up to 45% indirect

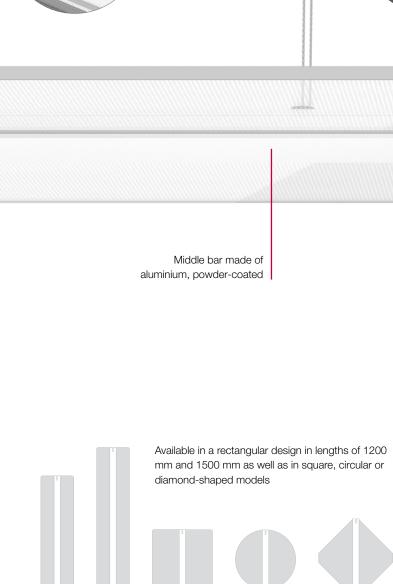
A highly polished reflection trim finishes off the cover with TWINDOT prismatic



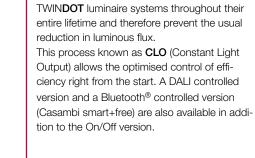
Transparent light guide measuring just 6 mm thick and made of UV-resistant acrylic glass (PMMA) with TWINDOT microprism structure.

The TWINDOT structure consists of microfine twin prisms, which have been applied to the top surface of an acrylic cover by means of a hot-embossing process in a defined angle matrix.





Power supply via the suspension cables



State of the art drivers regulate the LEDs in the

Smart+

**CLO** Constant Light Output

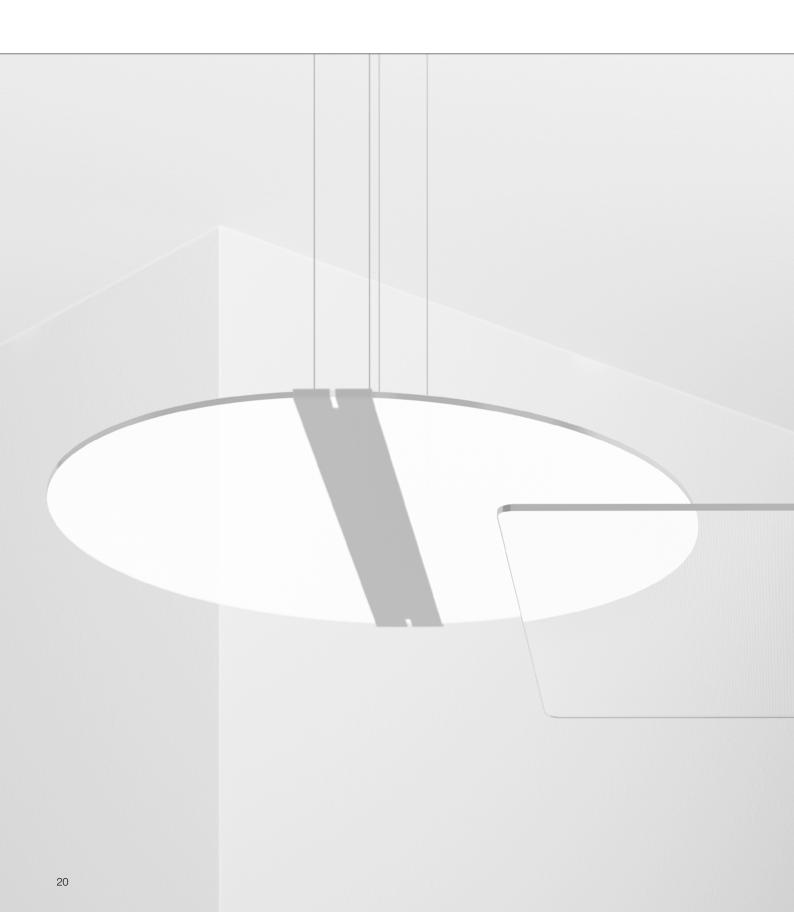




Ideal for office areas (UGR < 19) and environments with computer screens in accordance with EN 12464-1



Expansion of the product family with concentric formats



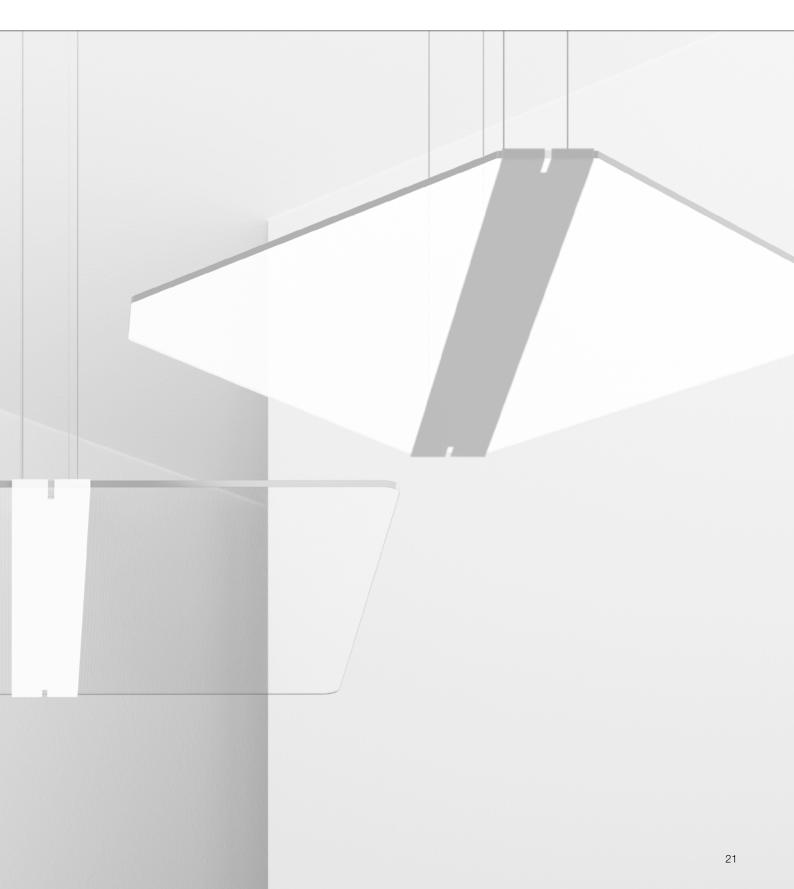
# Gentle light

Lively diversity with the same design for the planning of emotional light experiences











# Product overview



#### Pendant luminaires | TWINDOT S

Type of protection: IP 20 Protection class: I Impact Protection: IK03

Suspension Length: 500-1200 mm

Extremely flat and frameless appearance. Middle bar made of aluminium extrusion profile, powder-coated. Transparent light guide made of UV-resistant acrylic glass (PMMA). TWINDOT technology light control, light emission direct 55% / indirect 45%. UGR ≤ 19 (screen-compliant according to EN-12464-1). Converter integrated in the canopy (powder coated white). Power supply through suspension cable. 4-point steel cable suspension, steplessly adjustable.

Versions with Casambi smart+free Bluetooth® control for wireless network and operation using Android / iOS devices, free app available for download.

Available colour: 2 = white



×	Luminous efficiency
	up to 130 lm/W

**UGR < 19** 

Reference number	Dimensions [mm]	Lamp	Light colour	Luminous flux [lm]	System power [W]	UGR	dimm- able
Pendant luminaires							Price Category 21
Length L 1200 mm							
312263.002.1	L 1200, B 350, H 20	LED	840	6500	54	17,5	on/off
312263.002.1.76	L 1200, B 350, H 20	LED	840	6500	54	17,5	DALI
312263.002.1.730	L 1200, B 350, H 20	LED	840	6500	54	17,5	smart+free
312263.002	L 1200, B 350, H 20	LED	830	6450	57	17,5	on/off
312263.002.76	L 1200, B 350, H 20	LED	830	6500	57	17,5	DALI
312263.002.730	L 1200, B 350, H 20	LED	830	6500	57	17,5	smart+free
Length L 1500 mm							
312265.002.1	L 1500, B 350, H 20	LED	840	8100	62	17,6	on/off
312265.002.1.76	L 1500, B 350, H 20	LED	840	8100	62	17,6	DALI
312265.002.1.730	L 1500, B 350, H 20	LED	840	8100	62	17,6	smart+free
312265.002	L 1500, B 350, H 20	LED	830	8100	65	17,6	on/off
312265.002.76	L 1500, B 350, H 20	LED	830	8100	65	17,6	DALI
312265.002.730	L 1500, B 350, H 20	LED	830	8100	65	17,6	smart+free



### Pendant luminaires | TWINDOT S Square

Type of protection: IP 20 Protection class: I Impact Protection: IK03 Suspension Length: 500-1200 mm

Extremely flat and frameless appearance. Middle bar made of aluminium extrusion profile, powder-coated. Transparent light guide made of UV-resistant acrylic glass (PMMA). TWINDOT technology light control, light emission direct 55% / indirect 45%. UGR  $\leq$  19 (screen-compliant according to EN-12464-1). Converter integrated in the canopy (powder coated white). Power supply through suspension cable. 4-point steel cable suspension, steplessly adjustable.

Versions with Casambi smart+free Bluetooth® control for wireless network and operation using Android / iOS devices, free app available for download.

Available colour: 2 = white



×	Luminous efficiency
	up to 117 lm/W

**UGR < 19** 

Reference number	Dimensions [mm]	Lamp	Light colour	Luminous flux [lm]	System power [W]	UGR	dimm- able
Pendant luminaires							Price Category 21
312352.002.1	L 645, B 637, H 20	LED	840	4800	41	17,5	on/off
312352.002.1.76	L 645, B 637, H 20	LED	840	4800	41	17,5	DALI
312352.002.1.730	L 645, B 637, H 20	LED	840	4800	41	17,5	smart+free
312352.002	L 645, B 637, H 20	LED	830	4800	43	17,5	on/off
312352.002.76	L 645, B 637, H 20	LED	830	4800	43	17,5	DALI
312352.002.730	L 645, B 637, H 20	LED	830	4800	43	17,5	smart+free
Tunable White - 270	0 K to 6500 K						
312352.002.2.76	L 645, B 637, H 20	LED	827-865	3200	27	15,9	DALI
312352.002.2.730	L 645, B 637, H 20	LED	827-865	3200	27	15,9	smart+free



# Product overview

#### Pendant luminaires | TWINDOT S Diamond

Type of protection: IP 20 Protection class: I Impact Protection: IK03

Suspension Length: 500-1200 mm

Extremely flat and frameless appearance. Middle bar made of aluminium extrusion profile, powder-coated. Transparent light guide made of UV-resistant acrylic glass (PMMA). TWINDOT technology light control, light emission direct 55% / indirect 45%. UGR  $\leq$  19 (screen-compliant according to EN-12464-1). Converter integrated in the canopy (powder coated white). Power supply through suspension cable. 4-point steel cable suspension, steplessly adjustable.

Versions with Casambi smart+free Bluetooth® control for wireless network and operation using Android / iOS devices, free app available for download.

Available colour: 2 = white

Reference number	Dimensions [mm]	Lamp	Light colour	Luminous flux [lm]	System power [W]	UGR	dimm- able
Pendant luminaires							Price Category 21
312354.002.1	L 645, B 700, H 20	LED	840	3500	37	17,8	on/off
312354.002.1.76	L 645, B 700, H 20	LED	840	3500	37	17,8	DALI
312354.002.1.730	L 645, B 700, H 20	LED	840	3500	37	17,8	smart+free
312354.002	L 645, B 700, H 20	LED	830	3500	39	17,8	on/off
312354.002.76	L 645, B 700, H 20	LED	830	3500	39	17,8	DALI
312354.002.730	L 645, B 700, H 20	LED	830	3500	39	17,8	smart+free
Tunable White - 270	0 K to 6500 K						
312354.002.2.76	L 645, B 700, H 20	LED	827-865	3000	27	17,0	DALI
312354.002.2.730	L 645, B 700, H 20	LED	827-865	3000	27	17,0	smart+free





- Luminous efficiency up to 95 lm/W
- **X** UGR < 19

#### Pendant luminaires | TWINDOT S Round

Type of protection: IP 20 Protection class: I Impact Protection: IK03

Suspension Length: 500-1200 mm

Extremely flat and frameless appearance. Middle bar made of aluminium extrusion profile, powder-coated. Transparent light guide made of UV-resistant acrylic glass (PMMA). TWINDOT technology light control, light emission direct 55% / indirect 45%. UGR  $\leq$  19 (screen-compliant according to EN-12464-1). Converter integrated in the canopy (powder coated white). Power supply through suspension cable. 4-point steel cable suspension, steplessly adjustable.

Versions with Casambi smart+free Bluetooth® control for wireless network and operation using Android / iOS devices, free app available for download.

Available colour: 2 = white

Reference number	Dimensions [mm]	Lamp	Light colour	Luminous flux [lm]	System power [W]	UGR	dimm- able
Pendant luminaires							Price Category 21
312353.002.1	D 645, H 20	LED	840	4500	39	17,4	on/off
312353.002.1.76	D 645, H 20	LED	840	4500	39	17,4	DALI
312353.002.1.730	D 645, H 20	LED	840	4500	39	17,4	smart+free
312353.002	D 645, H 20	LED	830	4500	41	17,4	on/off
312353.002.76	D 645, H 20	LED	830	4500	41	17,4	DALI
312353.002.730	D 645, H 20	LED	830	4500	41	17,4	smart+free
Tunable White - 2700 K to 6500 K							
312353.002.2.76	D 645, H 20	LED	827-865	3100	27	16,4	DALI
312353.002.2.730	D 645, H 20	LED	827-865	3150	27	16,5	smart+free





- Luminous efficiency up to 115 lm/W
- **UGR < 19**





# LIGHT MANAGEMENT SYSTEMS

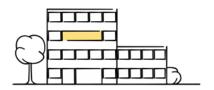
### Overview

Smart+

tree

#### light control +3 Economy Multi DALI

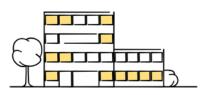
The unbeatable price/performance winner for smaller installations. The system combines simple commissioning via smartphone, low wiring effort and flexible configuration and is therefore ideal for **group offices**, **conference rooms and classrooms**. Programmable buttons and sensors can also be integrated via DALI connections in order to achieve even greater energy savings. The system has an integrated timer and can therefore be used to set up HCL.



#### Casambi smart+free

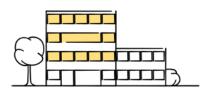
The wireless light management system for maximum functions and configuration options. Casambi smart+free solutions are perfect for **residential** 

**buildings, shop und hotel**, as 3-wire cabling is enough - also suitable as a module for subsequent installation into existing luminaires. The module is already integrated into luminaires with the article number ending .730. You can configure the system to your individual needs due to the wide range of accessories from the Casambi ecosystem. The integration here is very intuitive and can be completed by users without prior knowledge in just a few minutes.



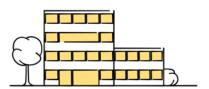
#### light control +3 Professional Control

The system is suitable for complex applications in warehouses, room and floor control and production areas; daylight dependant control, dynamic light control to circadian daylight simulation in Human Centric Lighting (HCL) and monitoring of energy data. In addition, the systems can be networked to make luminaire data available to other systems. light control+<sup>3</sup> Professional is the perfect entry level lighting system for the loT world.



# light control +3 Professional Customised

Lighting management can integrate with your building management system in office buildings, production halls and terminals. In this way, you can combine trades such as heating, sanitation, ventilation, security and blinds with lighting in one control system and even add additional functions such as monitoring, predictive maintenance and energy reporting if desired. Other additional functions can be programmed and integrated as per your individual requirements. Our support team would be happy to help in this regard, from planning up to commissioning.



### You still haven't found the right system for you?

Along with the systems shown here, we would also be happy to create a customised control system for your project. Please contact your designated on-site sales employee or contact our Planning department via e-mail at Ims@rzb-leuchten.de or by phone at +49 951/79 09-396.

	light control +³ Economy Multi DALI	Casambi smart+free	light control +3 Professional Control	light control +3 Professional Customised
	Economy Multi DALI	smart+ free	Professional Control	Professional Customised  and an analysis of the state of
Application	Group offices Conference rooms Classrooms	Residential buildings Shop Hotel	Warehouses Floor control Production areas	Office buildings Production halls Terminals
Integration of indoor/outdoor lighting	✓	✓	✓	✓
Can be combined with	smart + free		smart. free	smart +
Communication	wired	wireless	wired	wired + wireless
Infrastructure requirements	L, N, PE, DA, DA (5 wires cable)	L, N, PE (3 wires cable)	L, N, PE, DA, DA (5 wires cable)	L, N, PE, DA, DA (5 wires cable)
Commissioning	by electrician	by electrician	RZB service technician	RZB service technician
Configuration	App, Plug&Play	App, Remote access	PC-Tool, Remote access	RZB service technician
Operation	Switches, Buttons, App	Switches, Buttons, App	Switches, Buttons, App, Web access	Switches, Buttons, PC, Web access
Number of luminaires (1 EB) (Number of luminaires depends on on the number of EB in the luminaire)	32	1	256	any
Number of sensors (presence, motion)	4	1 per module	50	any
Dimmable	✓	✓	<b>✓</b>	✓
Motion/presence detection	✓	✓	✓	✓
Daylight-dependent control	✓	✓	✓	✓
Scenes/Groups	✓	✓	✓	✓
Timer/Calendar functions	✓	✓	✓	✓
HCL / Tunable White	✓	✓	✓	✓
RGB		✓	✓	✓
Network integration		✓	✓	✓
Remote access: programming, operation, maintenance		✓	✓	✓
IoT ready		✓	✓	✓
Predictive maintenance, monitoring, read out luminaire data			✓	✓
Beacon for indoor navigation, tracking, asset management		✓		✓
Integration of additional sensors (CO <sub>2</sub> , temperature, gas)				✓
Integration of other trades (heating, air conditioning, security)				✓
Order number with extension	.76 (DALI)	.76 (DALI) .730 (smart+free)	.76 (DALI)	.76 (DALI)



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The digital version of this publication contains interactive links that lead you from the article number directly to the web.







