



SmartForm – the new standard for office lighting with slender recessed luminaires

SmartForm TBS415

Reflecting Philips' drive for simplicity and sustainability, SmartForm recessed is a complete family of highly versatile modular and semi-modular luminaires. These luminaires are available with a choice of LED or MASTER TL5 light sources in very small, slender versions. Designed to fit in a wide range of ceiling types, this complete family can fulfill the majority of project requirements in most applications. Energy efficiency As well as incorporating energy-efficient light sources and electronic ballasts, the SmartForm recessed family can be equipped with lighting controls. These include solutions for presence detection and daylight regulation (ActiLume) or daylight regulation only (Luxsense), thereby further reducing energy consumption (W/m^2 is very low). In this way, this Green Flagship range lowers overall cost of ownership as well as CO₂ levels, making SmartForm an environmentally friendly choice. SmartForm recessed TBS415 – 'light beam' semi-modular – 600 mm module SmartForm recessed luminaires are designed for integration in linear ceiling systems with a width of 148 mm (half module 300 mm) for exposed and concealed T-bar and the extended versions for bandrastrer ceilings. 'Light surface' TBS415 1-lamp MLO and asymmetrical optic in 1/2 modular concept, width 148 mm. Modular length 600, 900, 1200 and 1500 mm. To extend till 2400 mm. 'Light beam' TBS415 1-lamp: micro-optics in 1/2 modular concept with AIR function, width 148 mm. Modular length 600, 900, 1200 and 1500 mm. To extend till 2400 mm. 'Light beam' TBS415 2-lamps Mini-optics, 2-lamps in 1/2 modular concept with AIR function, width 148 mm. Modular length 600, 900, 1200 and 1500 mm. To extend till 2400 mm.

Benefits

- Slender, recessed 'light surface' luminaires with MLO Micro Lens Optics or 'light beam' luminaires with micro- or mini-optics for unobtrusive ceiling integration
- Complete family of linear luminaires designed to fit a wide range of ceiling types
- Available with either 1 or 2 TL5 lamps for excellent, energy-efficient office lighting solutions

Features

- Choice of LED or MASTER TL5 light sources
- MLO optics
- Electronic ballast
- Can be equipped with lighting controls for presence detection and daylight regulation (ActiLume) or daylight regulation only (Luxsense)

Application

- Offices
- Education
- Healthcare
- Recreation
- Retail
- Industry

Specifications

Type	TBS415 (semi-modular light beam)
Ceiling grid	Width of all luminaires is 150 mm; module size in length: 600 mm for exposed- and symmetrical concealed- T-bar ceiling and plaster (board) ceilings Extended versions, length max. 2400 mm, for bandrastr ceilings
Light source	Fluorescent: - 1 x or 2 x MASTER TL5 ECO / G5 / 13, 20, 25, 32, 45, 50, 73 W - 1 x or 2 x MASTER TL5 / G5 / 14, 21, 24, 28, 35, 39, 49, 54, 80 W
Lamp included	Yes, TL5 ECO (lamp color 830 or 840) Yes, TL5 (lamp color 827, 830 or 840) In certain versions no lamps are included
Gear	Electronic, 220-240 V / 50-60 Hz: - High Frequency Performer (HFP) - High Frequency Performer, intelligent, multi-watt (HFPI) - High Frequency Regulator, DALI (HFD) - High Frequency Regulator, 1-10 V (HFR) - High Frequency Regulator, touch-DALI (HFD-T)

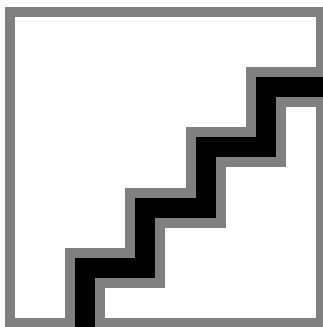
Optic	1-lamp version: - Micro OLC very high efficiency high-gloss optic (C8-VH) - Micro OLC very high efficiency high-gloss optic with top-reflector (T C8-VH) - Micro OLC performer high-gloss optic (C8) - Micro OLC excellent comfort high-gloss optic (C8-C) - Micro OLC very high efficiency semi-high-gloss optic (D8-VH) - Micro OLC very high efficiency semi-high-gloss optic with top-reflector (T D8-VH) - Micro OLC performer semi-high-gloss optic (D8) - Micro OLC excellent comfort semi-high-gloss optic (D8-C) - Micro OLC performer semi-high-gloss bi-directional optic with top-reflector (T D8-BD) - Micro matt mirror, ribbed cross louvers (M2) - Micro high efficiency mirror, ribbed cross louvers (M2-H) - High efficiency asymmetrical optic (A), no AIR function 2-lamp version: - Mini OLC performer high-gloss optic (C6) - Mini OLC very high efficiency high-gloss optic (C6-VH) - Mini OLC performer semi-high-gloss optic (D6) - Mini OLC very high efficiency semi-high-gloss optic (D6-VH)
Optical cover (1-lamp version)	OLC Micro Lens Optic in PC cover with top-reflector (T MLO-PC), no AIR function

Specifications

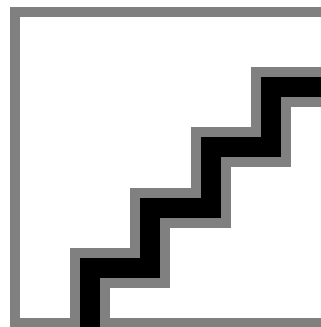
Connection (outside housing)	Push-in connector (PI) or with pull relief (PIP)
	Wieland connector GST 18, 3 or 4 poles (W, W4 respectively)
	Wago connector, 3 or 4 poles (WA, WA4 respectively)
	Ensto connector, 3 or 4 poles (EN, EN4 respectively)
	Cable, length 200 cm, with plug CEE7 (CCE)
Options	Air handling, slots besides optics, (AIR)
	Emergency lighting: 1 hour (EL1), 3 hours (EL3)
	Lighting controls:
	- Luxsense daylight controller micro (LXM)
	- ActiLume multi controller (ACL)
	Internal PVC free wiring (PVCFR)
	Euro fuse (FU) included
Extended versions (bandrafter ceilings)	Symmetrical extended variable length, max. 2400 mm (L2400.0)
	Asymmetrical extended variable length, max. 2400 mm (L2400.0)

Materials and finishing	Housing: zinc-coated steel, white RAL 9016 based
	Optional white RAL 9010 or silver grey RAL 9006 based
	Rim detailing:
Accessories	- standard versions: width 12 mm, height 5 mm, post-lacquered
	- extended versions: width 12 mm, height 11 mm, pre-lacquered
	Exposed ceilings: lay-in, no brackets needed
	Concealed ceilings: bracket ZBS415 SMB SET
	Plaster ceilings: bracket ZBS460 SMB-PLC (12 pcs)
	Bandrafter ceilings:
	- SB1 for standard bandrafter (GPS200)
Remarks	- SB2 for GPS100
	- SB3 for C/U-profile bandrafter, metal ceiling
	Protection foil to protect the optic during installation
Main applications	Dedicated luminaires available with air-handling functionality (AIR), 50 m³/hour/luminaire
	Office, education, healthcare, recreation, retail, industry

Versions

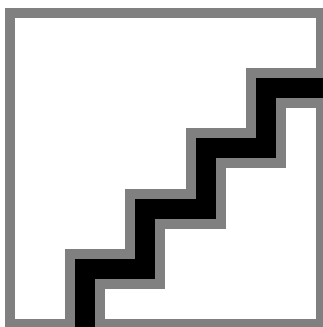


SmartForm TBS415 recessed semi-modular luminaire, width 148 mm, with OLC micro-lens optic in polycarbonate cover (MLO-PC)

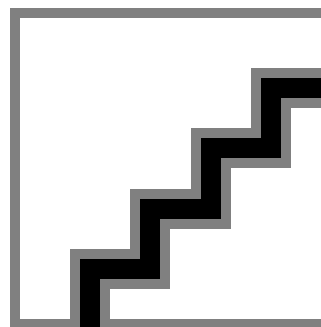


SmartForm TBS415 recessed semi-modular luminaire, width 148 mm, with micro OLC performer semi-high-gloss optic (D8), micro OLC very-high-efficiency semi-high-gloss optic (D8-VH) or micro OLC performer semi-high-gloss bi-directional optic (D8-BD) and air handling

Product details

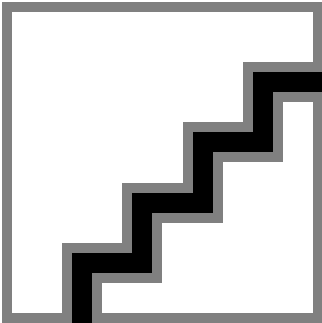


IPDP_TBS415i_0017-Detail photo

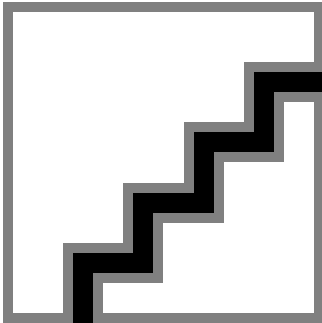


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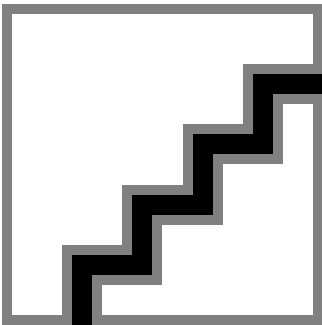
Product details



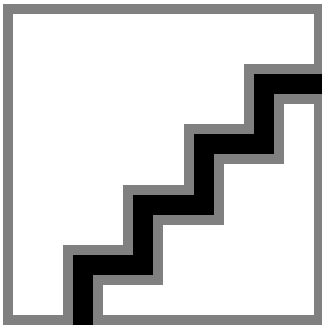
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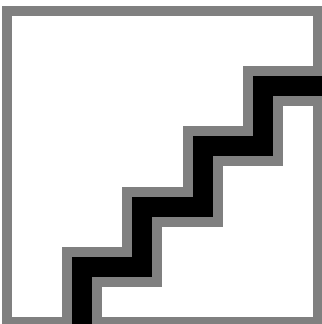
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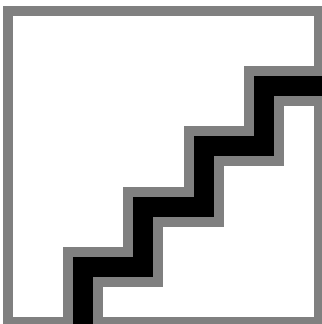
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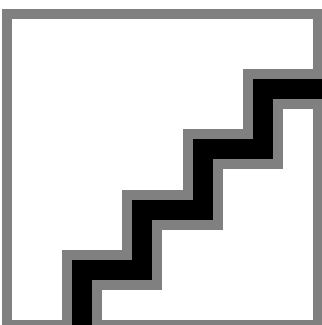
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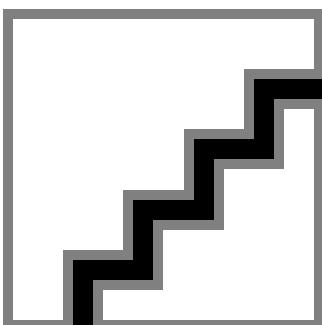
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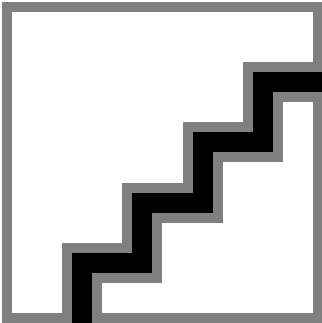


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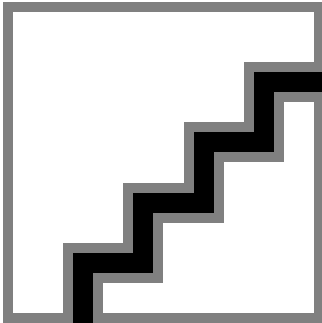


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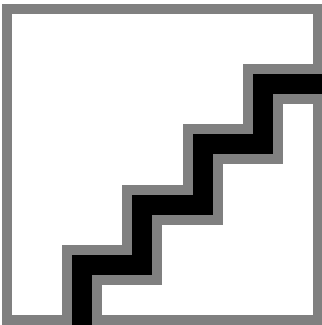
Product details



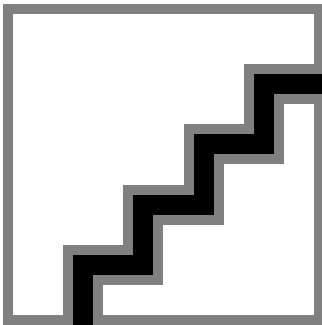
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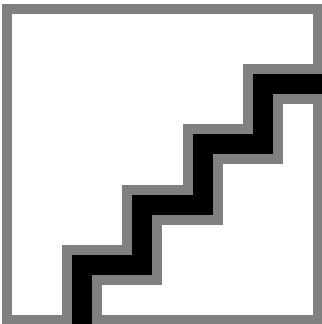
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IPDP_TBS415i_0117-Detail photo



IPDP_TBS415i_0121-Detail photo



IPDP_TBS415i_0041-Detail photo



Accessories



Optical cover remover

Ordercode 910403205603

SmartForm TBS415

Application Conditions	
Suitable for random switching	Not applicable
Approval and Application	
Mech. impact protection code	IK02
Operating and Electrical	
Input Voltage	220 to 240 V
General Information	
CE mark	CE mark
Protection class IEC	Safety class I
Emergency lighting	-
Gear	HFP
Glow-wire test	Temperature 850 °C, duration 5 s
Kombipack	Lamp(s) included
Lamp family code	TL5
Embedded control	-
Number of light sources	1 pc
Product Family Code	TBS415
Safety bracket	-
Internal wiring	Standard
Mechanical and Housing	
Color	White

Application Conditions

Order Code	Full Product Name	Ambient temperature range
910501896703	TBS415 1x28W/840 HFP T MLO-PC PIP	-
910501897003	TBS415 1x54W/840 HFP T MLO-PC PIP	-
910501912503	TBS415 1x28W/830 HFP T MLO-PC W	-
910501912703	TBS415 1x49W/830 HFP T MLO-PC W	+10 to +40 °C
910501912803	TBS415 1x54W/830 HFP T MLO-PC W	-
910501910503	TBS415 1x28W/830 HFP D8 W AIR	-
910501910603	TBS415 1x35W/830 HFP D8 W AIR	-
910501910703	TBS415 1x49W/830 HFP D8 W AIR	+10 to +40 °C
910501911103	TBS415 1x54W/830 HFP D8 W AIR	-
910501911303	TBS415 1x28W/830 HFP D8-VH W AIR	-
910501911403	TBS415 1x35W/830 HFP D8-VH W AIR	-
910501911503	TBS415 1x49W/830 HFP D8-VH W AIR	-

Approval and Application

Order Code	Full Product Name	Ingress protection code
910501896703	TBS415 1x28W/840 HFP T MLO-PC PIP	IP40
910501897003	TBS415 1x54W/840 HFP T MLO-PC PIP	IP40
910501912503	TBS415 1x28W/830 HFP T MLO-PC W	IP40
910501912703	TBS415 1x49W/830 HFP T MLO-PC W	IP40
910501912803	TBS415 1x54W/830 HFP T MLO-PC W	IP40
910501910503	TBS415 1x28W/830 HFP D8 W AIR	IP20

Order Code	Full Product Name	Ingress protection code
910501910603	TBS415 1x35W/830 HFP D8 W AIR	IP20
910501910703	TBS415 1x49W/830 HFP D8 W AIR	IP20
910501911103	TBS415 1x54W/830 HFP D8 W AIR	IP20
910501911303	TBS415 1x28W/830 HFP D8-VH W AIR	IP20
910501911403	TBS415 1x35W/830 HFP D8-VH W AIR	IP20
910501911503	TBS415 1x49W/830 HFP D8-VH W AIR	IP20

General Information (1/2)

Order Code	Full Product Name	Air-handling	Cap-Base	Optical cover/lens type	ENEC mark
910501896703	TBS415 1x28W/840 HFP T MLO-PC PIP	-	-	Micro-lens optic in polycarbonate cover	-
910501897003	TBS415 1x54W/840 HFP T MLO-PC PIP	-	-	Micro-lens optic in polycarbonate cover	-
910501912503	TBS415 1x28W/830 HFP T MLO-PC W	-	-	Micro-lens optic in polycarbonate cover	-

Order Code	Full Product Name	Air-handling	Cap-Base	Optical cover/lens type	ENEC mark
910501912703	TBS415 1x49W/830 HFP T MLO-PC W	-	G5	Micro-lens optic in polycarbonate cover	ENEC mark
910501912803	TBS415 1x54W/830 HFP T MLO-PC W	-	-	Micro-lens optic in polycarbonate cover	-
910501910503	TBS415 1x28W/830 HFP D8 W AIR	Suitable for air-handling	-	-	-
910501910603	TBS415 1x35W/830 HFP D8 W AIR	Suitable for air-handling	-	-	-

SmartForm TBS415

Order Code	Full Product Name	Air-handling	Cap-Base	Optical cover/lens type	ENEC mark
910501910703	TBS415 1x49W/830	Suitable for	G5	-	ENEC
	HFP D8 W AIR	air-handling			mark
910501911103	TBS415 1x54W/830	Suitable for	-	-	-
	HFP D8 W AIR	air-handling			
910501911303	TBS415 1x28W/830	Suitable for	-	-	-
	HFP D8-VH W AIR	air-handling			

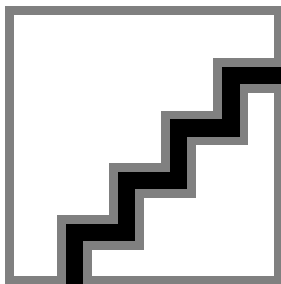
Order Code	Full Product Name	Air-handling	Cap-Base	Optical cover/lens type	ENEC mark
910501911403	TBS415 1x35W/830	Suitable for	-	-	-
	HFP D8-VH W AIR	air-handling			
910501911503	TBS415 1x49W/830	Suitable for	-	-	-
	HFP D8-VH W AIR	air-handling			

General Information (2/2)

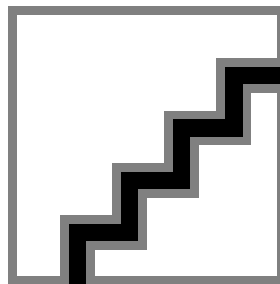
Order Code	Full Product Name	Lamp power	Optic type	Top reflector	UL mark
910501896703	TBS415 1x28W/840	28 W	-	T	-
	HFP T MLO-PC PIP				
910501897003	TBS415 1x54W/840	54 W	-	T	-
	HFP T MLO-PC PIP				
910501912503	TBS415 1x28W/830	28 W	-	T	-
	HFP T MLO-PC W				
910501912703	TBS415 1x49W/830	49 W	-	T	-
	HFP T MLO-PC W				
910501912803	TBS415 1x54W/830	54 W	-	T	-
	HFP T MLO-PC W				
910501910503	TBS415 1x28W/830	28 W	Semi-high-gloss optic 3D micro-lamellae	-	-
	HFP D8 W AIR				
910501910603	TBS415 1x35W/830	35 W	Semi-high-gloss optic 3D micro-lamellae	-	-
	HFP D8 W AIR				
910501910703	TBS415 1x49W/830	49 W	Semi-high-gloss optic 3D micro-lamellae	-	-
	HFP D8 W AIR				

Order Code	Full Product Name	Lamp power	Optic type	Top reflector	UL mark
910501911103	TBS415 1x54W/830	54 W	Semi-high-gloss optic 3D micro-lamellae	-	-
	HFP D8 W AIR				
910501911303	TBS415 1x28W/830	28 W	Semi-high-gloss optic 3D micro-lamellae very high reflectance	-	-
	HFP D8-VH W AIR				
910501911403	TBS415 1x35W/830	35 W	Semi-high-gloss optic 3D micro-lamellae very high reflectance	-	-
	HFP D8-VH W AIR				
910501911503	TBS415 1x49W/830	49 W	Semi-high-gloss optic 3D micro-lamellae very high reflectance	-	-
	HFP D8-VH W AIR				

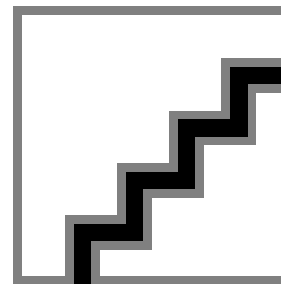
Polar Wide Diagrams



IFPS_TBS415 1xTL5-49W HFP T MLO-PC-Polar Normal (separate)

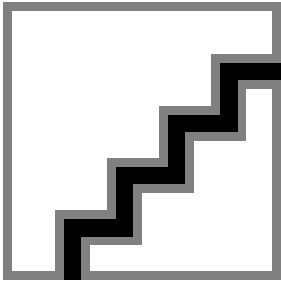


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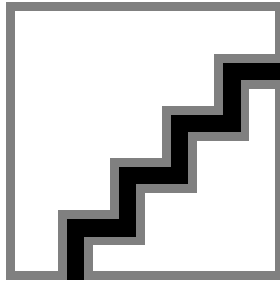


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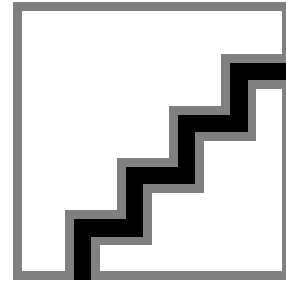
Polar Wide Diagrams



IFPS_TBS415 1xTL5-49W HFP D8-Polar Normal
(separate)



IFPS_TBS415 1xTL5-54W HFP D8-Polar Normal
(separate)



IFPS_TBS415 1xTL5-35W HFP D8-VH-Polar
Normal (separate)

