



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

## SmartForm TBS411

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 ( $\text{W/m}^2$  is very low). In this way, this Green Flagship range lowers overall cost of ownership as well as CO<sub>2</sub> levels, making SmartForm an environmentally friendly choice. SmartForm recessed TBS411 – 'light beam' semi-modular – 600 mm module These slender SmartForm recessed luminaires are designed for integration in variety of linear ceiling systems: exposed and concealed T-bar, plaster and the extended versions for bandrastrer ceilings. 'Light beam' TBS411 1-lamp Micro-optics and covers (MLO-PC and Opal) in smallest concept, width 90 mm. Modular length 600, 900, 1200 and 1500 mm. To extend till 2400 mm. 'Light beam' TBS411 1-lamp with AIR Micro-optics and covers in smallest concept with AIR function, width 100 mm. Modular length 600, 900, 1200 and 1500 mm. To extend till 2400 mm. 'Light beam' TBS411 2-lamps Mini-optics, 2-lamps, width 115 mm. Modular length 600, 900, 1200 and 1500 mm. To extend till 2400 mm.

## Benefits

- Slender, recessed 'light beam' luminaires with micro- or mini-optics for unobtrusive ceiling integration
- Complete family of linear luminaires including very small, slender versions, all 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
- Micro- or mini-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

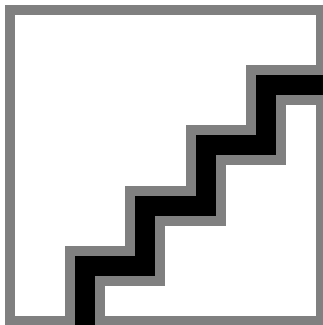
<b>Type</b>	TBS411 (semi-modular light beam)	<b>Optic</b>	1-lamp version:
<b>Ceiling grid</b>	Module size in length: 600 mm for exposed- and symmetrical concealed- T-bar ceiling and plaster (board) ceilings Extended versions, length max. 2400 mm, for bandrastr ceilings		- Micro OLC very high efficiency 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) - Micro high efficiency asymmetrical optic (A), no AIR function
<b>Light source</b>	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		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)
<b>Lamp included</b>	Yes, TL5 ECO (lamp color 830 or 840) Yes, TL5 (lamp color 827, 830 or 840) In certain versions no lamps are included	<b>Optical cover (1-lamp version)</b>	Opal cover (O), no AIR function OLC Micro Lens Optic in PC cover (MLO-PC), no AIR function
<b>Gear</b>	Electronic, 220-240 V / 50-60 Hz: - High Frequency Performer (HFP) - High Frequency Performer, intelligent, multi-watt (HFPI) - High Frequency Regulator, 1-10 V (HFR) - High Frequency Regulator, DALI (HFD) - High Frequency Regulator DALI, touch & dimming (HFD-T)		

## Specifications

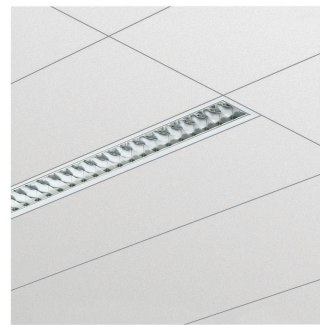
<b>Connection (outside housing)</b>	Push-in connector (PI) or with pull relief (PIP)
	Wieland connector GST 18, 3 or 4 poles (W, W4 respectively)
	Wago connector, 3 or 4 poles (WA, WA4 respectively)
	Ensto connector, 3 or 4 poles (EN, EN4 respectively)
	Cable, length 200 cm, with plug CEE7 (CCE)
<b>Options</b>	Air handling, slots besides optics, width plus 10 mm (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
<b>Extended versions (bandrafter ceilings)</b>	Symmetrical extended variable length, max. 2400 mm (L2400.0)
	Asymmetrical extended variable length, max. 2400 mm (L2400.0)

<b>Materials and color</b>	Housing: zinc-coated steel, white RAL 9016 based
	Optional white RAL 9010 or silver grey RAL 9006 based
	Rim detailing:
<b>Accessories</b>	- 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)
<b>Remarks</b>	- SB2 for GPS100
	- SB3 for C/U-profile bandrafter, metal ceiling
	Protection foil to protect the optic during installation
<b>Main applications</b>	Dedicated luminaires available with air-handling functionality (AIR), 50 m³/hour/luminaire
	Office, education, healthcare, recreation, retail, industry

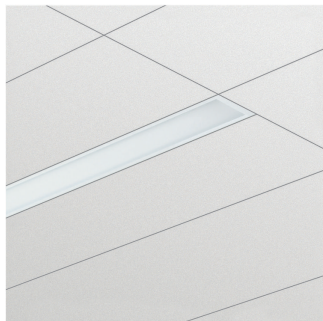
## Versions



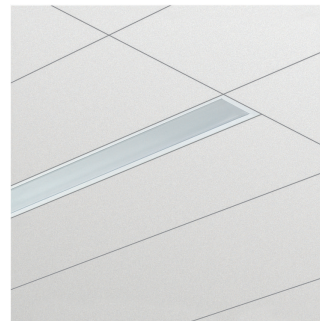
SmartForm TBS411 recessed semi-modular luminaire with micro OLC performer high-gloss optic (C8) or micro OLC very-high-efficiency high-gloss optic (C8-VH)



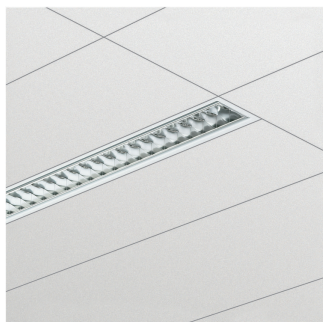
SmartForm TBS411 recessed semi-modular luminaire with micro OLC performer semi-high-gloss optic (D8), micro OLC very-high-efficiency semi-high-gloss optic (D8-VH) or micro OLC performer semi-high-gloss bi-directional optic (D8-BD)



SmartForm TBS411 recessed semi-modular luminaire with opal cover made of polycarbonate (O)

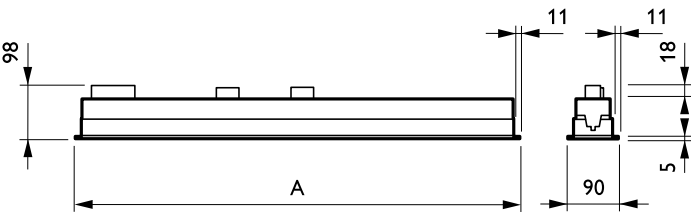
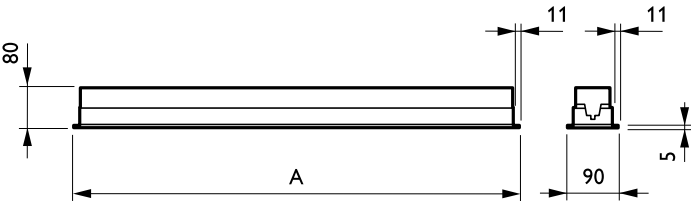
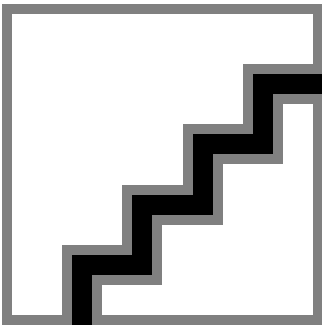


SmartForm TBS411 recessed semi-modular luminaire with OLC micro-lens optic in polycarbonate cover (MLO-PC)



SmartForm TBS411 recessed semi-modular luminaire 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

Dimensional drawing

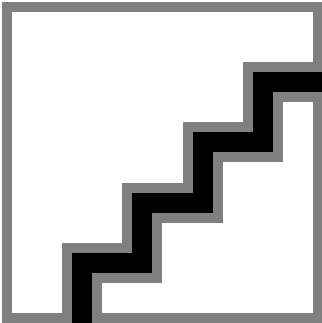


Product	A
TBS411 1x49W/830 HFP D8 W AIR	1497 mm
TBS411 1x35W/830 HFP D8 W AIR	1497 mm
TBS411 1x28W/830 HFP D8 W AIR	1197 mm
TBS411 1x35W/830 HFP D8-VH W AIR	1497 mm
TBS411 1x28W/830 HFP D8-VH W AIR	1197 mm
TBS411 1x54W/830 HFP D8 W AIR	1197 mm

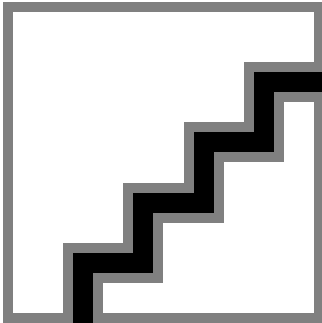
Product	A
TBS411 1x54W/840 HFP MLO-PC PIP	1197 mm
TBS411 1x49W/840 HFP MLO-PC PIP	1497 mm
TBS411 1x35W/840 HFP MLO-PC PIP	1497 mm
TBS411 1x28W/840 HFP MLO-PC PIP	1197 mm
TBS411 1x28W/840 HFP O PIP	1197 mm
TBS411 1x49W/840 HFP D8-VH PIP	1497 mm
TBS411 1x28W/840 HFP D8-VH PIP	1197 mm
TBS411 1x54W/840 HFP C8-VH PIP	1197 mm
TBS411 1x49W/840 HFP C8-VH PIP	1497 mm
TBS411 1x28W/840 HFP C8-VH PIP	1197 mm
TBS411 1x54W/840 HFP D8 PIP	1197 mm
TBS411 1x49W/840 HFP D8 PIP	1497 mm
TBS411 1x28W/840 HFP D8 PIP	1197 mm
TBS411 1x54W/840 HFP C8 PIP	1197 mm
TBS411 1x28W/840 HFP C8 PIP	1197 mm

Product	A
TBS411 1x28W/840 HFP D8-VH W SC	1197 mm
TBS411 1x28W/840 HFP C8-VH W SC	1197 mm
TBS411 1x35W/840 HFP C8 W SC	1497 mm

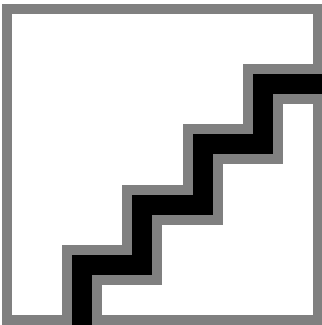
Product details



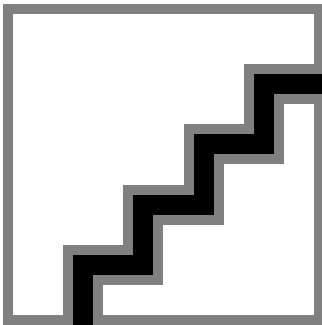
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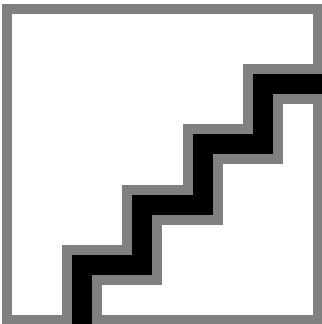
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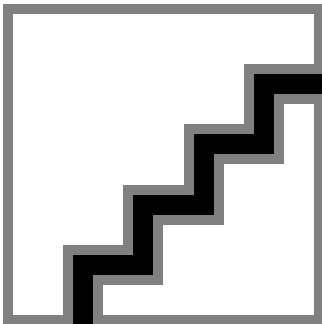
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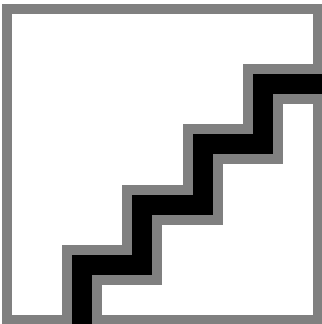
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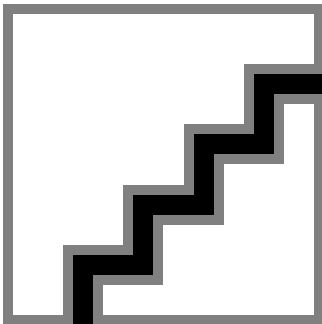
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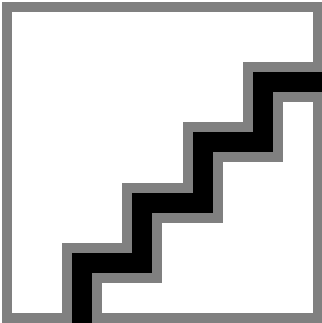


IPDP\_TBS415i\_0063-Detail photo

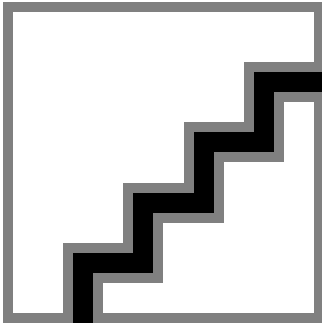


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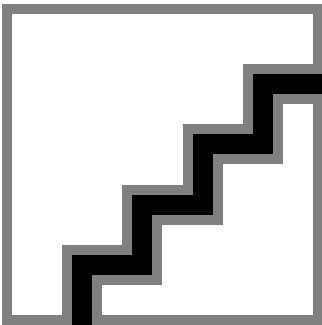
Product details



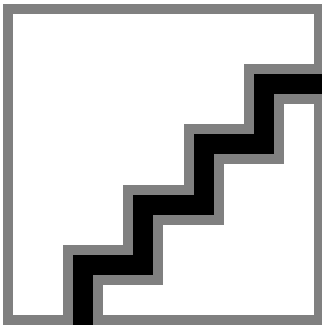
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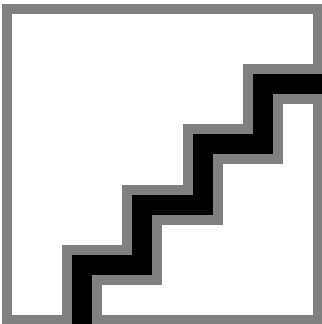
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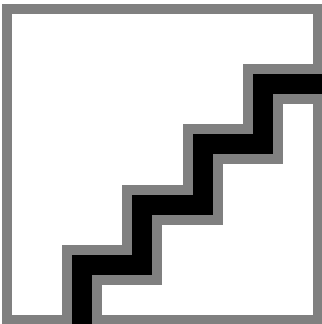
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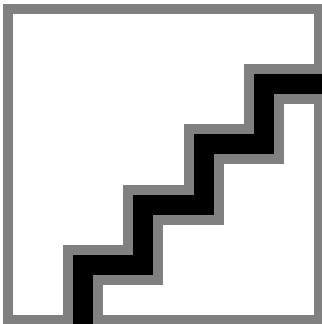
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IPDP\_TBS415i\_0121-Detail photo



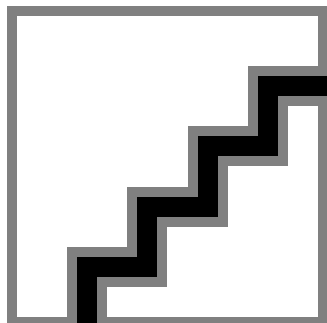
IPDP\_TBS415i\_0023-Detail photo



IPDP\_TBS415i\_0025-Detail photo

# SmartForm TBS411

## Product details



IPDP\_TBS415i\_0041-Detail photo

## Accessories

Optical cover remover

Ordercode 910403205603



### Application Conditions

Suitable for random switching Not applicable

### 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 TBS411

Safety bracket -

Top reflector -

Internal wiring Standard

### Mechanical and Housing

Color White

## Approval and Application

Order Code	Full Product Name	Mech. impact protection code	Ingress protection code
910501886003	TBS411 1x28W/840 HFP C8 PIP	IK07	IP20
910501886303	TBS411 1x54W/840 HFP C8 PIP	IK07	IP20
910501887003	TBS411 1x28W/840 HFP C8-VH PIP	IK07	IP20
910501887203	TBS411 1x49W/840 HFP C8-VH PIP	IK07	IP20
910501887303	TBS411 1x54W/840 HFP C8-VH PIP	IK07	IP20
910501924903	TBS411 1x35W/840 HFP C8 W SC	IK02	IP20
910501925203	TBS411 1x28W/840 HFP C8-VH W SC	IK02	IP20
910501886503	TBS411 1x28W/840 HFP D8 PIP	IK07	IP20
910501886703	TBS411 1x49W/840 HFP D8 PIP	IK07	IP20
910501886803	TBS411 1x54W/840 HFP D8 PIP	IK07	IP20
910501887503	TBS411 1x28W/840 HFP D8-VH PIP	IK07	IP20
910501887703	TBS411 1x49W/840 HFP D8-VH PIP	IK07	IP20
910501925403	TBS411 1x28W/840 HFP D8-VH W SC	IK02	IP20
910501889003	TBS411 1x28W/840 HFP O PIP	IK02	IP40
910501889503	TBS411 1x28W/840 HFP MLO-PC PIP	IK02	IP40
910501889603	TBS411 1x35W/840 HFP MLO-PC PIP	IK02	IP40
910501889703	TBS411 1x49W/840 HFP MLO-PC PIP	IK02	IP40
910501889803	TBS411 1x54W/840 HFP MLO-PC PIP	IK02	IP40
910501908303	TBS411 1x28W/830 HFP D8 W AIR	IK02	IP20
910501908403	TBS411 1x35W/830 HFP D8 W AIR	IK02	IP20
910501908503	TBS411 1x49W/830 HFP D8 W AIR	IK02	IP20
910501908903	TBS411 1x54W/830 HFP D8 W AIR	IK02	IP20
910501909103	TBS411 1x28W/830 HFP D8-VH W AIR	IK02	IP20

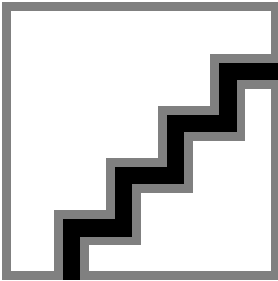
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910501909203	TBS411 1x35W/830 HFP D8-VH W AIR	IK02	IP20

## General Information

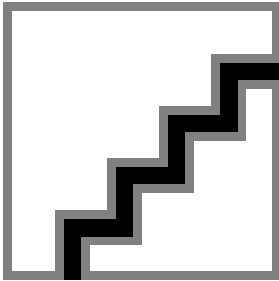
Order Code	Full Product Name	Air-handling	Optical cover/lens type	Lamp power	Optic type
910501886003	TBS411 1x28W/840 HFP C8 PIP	-	-	28 W	High-gloss optic 3D micro-lamellae
910501886303	TBS411 1x54W/840 HFP C8 PIP	-	-	54 W	High-gloss optic 3D micro-lamellae
910501887003	TBS411 1x28W/840 HFP C8-VH PIP	-	-	28 W	High-gloss optic 3D micro-lamellae very high reflectance
910501887203	TBS411 1x49W/840 HFP C8-VH PIP	-	-	49 W	High-gloss optic 3D micro-lamellae very high reflectance
910501887303	TBS411 1x54W/840 HFP C8-VH PIP	-	-	54 W	High-gloss optic 3D micro-lamellae very high reflectance
910501924903	TBS411 1x35W/840 HFP C8 W SC	-	-	35 W	High-gloss optic 3D micro-lamellae
910501925203	TBS411 1x28W/840 HFP C8-VH W SC	-	-	28 W	High-gloss optic 3D micro-lamellae very high reflectance
910501886503	TBS411 1x28W/840 HFP D8 PIP	-	-	28 W	Semi-high-gloss optic 3D micro-lamellae
910501886703	TBS411 1x49W/840 HFP D8 PIP	-	-	49 W	Semi-high-gloss optic 3D micro-lamellae
910501886803	TBS411 1x54W/840 HFP D8 PIP	-	-	54 W	Semi-high-gloss optic 3D micro-lamellae
910501887503	TBS411 1x28W/840 HFP D8-VH PIP	-	-	28 W	Semi-high-gloss optic 3D micro-lamellae very high reflectance
910501887703	TBS411 1x49W/840 HFP D8-VH PIP	-	-	49 W	Semi-high-gloss optic 3D micro-lamellae very high reflectance
910501925403	TBS411 1x28W/840	-	-	28 W	Semi-high-gloss optic 3D micro-
910501889003	TBS411 1x28W/840 HFP O PIP	-	Opal	28 W	-
910501889503	TBS411 1x28W/840 HFP MLO-PC PIP	-	Micro-lens optic in polycarbonate cover	28 W	-
910501889603	TBS411 1x35W/840 HFP MLO-PC PIP	-	Micro-lens optic in polycarbonate cover	35 W	-
910501889703	TBS411 1x49W/840 HFP MLO-PC PIP	-	Micro-lens optic in polycarbonate cover	49 W	-
910501889803	TBS411 1x54W/840 HFP MLO-PC PIP	-	Micro-lens optic in polycarbonate cover	54 W	-
910501908303	TBS411 1x28W/830 HFP D8 W AIR	Suitable for air-handling	-	28 W	Semi-high-gloss optic 3D micro-lamellae
910501908403	TBS411 1x35W/830 HFP D8 W AIR	Suitable for air-handling	-	35 W	Semi-high-gloss optic 3D micro-lamellae
910501908503	TBS411 1x49W/830 HFP D8 W AIR	Suitable for air-handling	-	49 W	Semi-high-gloss optic 3D micro-lamellae
910501908903	TBS411 1x54W/830 HFP D8 W AIR	Suitable for air-handling	-	54 W	Semi-high-gloss optic 3D micro-lamellae
910501909103	TBS411 1x28W/830 HFP D8-VH W AIR	Suitable for air-handling	-	28 W	Semi-high-gloss optic 3D micro-lamellae very high reflectance
910501909203	TBS411 1x35W/830 HFP D8-VH W AIR	Suitable for air-handling	-	35 W	Semi-high-gloss optic 3D micro-lamellae very high reflectance



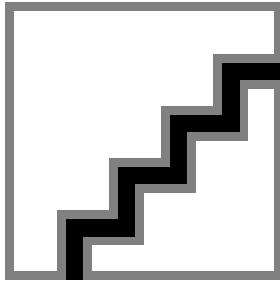
Polar Wide Diagrams



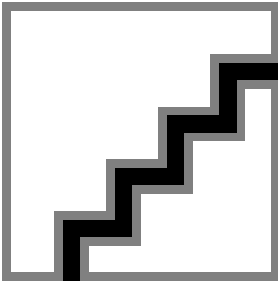
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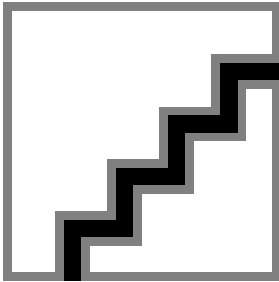
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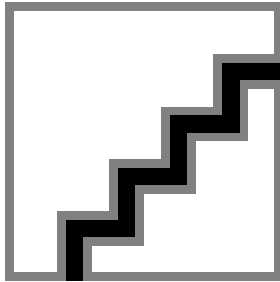
IFPS\_TBS411 1xTL5-35W HFP D8-Polar Normal (separate)



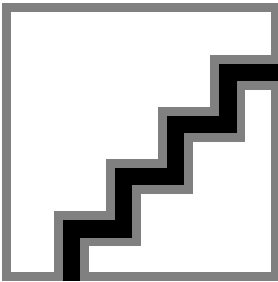
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IFPS\_TBS411 1xTL5-54W HFP C8-VH-Polar Normal (separate)



IFPS\_TBS411 1xTL5-28W HFP D8-VH-Polar Normal (separate)



IFPS\_TBS411 1xTL5-54W HFP MLO-PC-Polar Normal (separate)

