

▷ MACHINE VISION APPLICATIONS

▷ LED LIGHTING SYSTEM

▷ VERY DIFFUSE LIGHTING

▷ ULTRA-THIN BORDERS

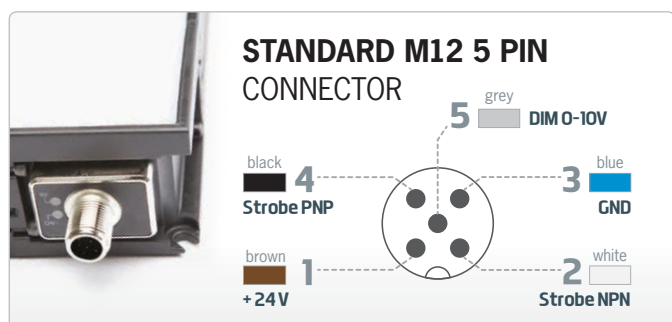
▷ FIT CAMERA'S OBJECTIVES

## HIGH POWER FLAT DOME, HOMOGENEOUS AND EASY TO INTEGRATE



- ✓ **30% brightness increase\***  
in continuous working
- ✓ **Standard M12 5 Pin connector**  
with **remote dimming control**
- ✓ Custom sizes available  
**1 cm steps**

\* When compared to equivalent MFDOME+  
(standard version)



The **HPFDOME** is a **high-power flat dome illumination solution** for Machine Vision applications. This product is the **next evolution** of TPL Vision's flagship MFDOME+ product, carrying **significant product enhancements**. Including: **30% brightness increase\*** in continuous working, **new connector** making it easier and more cost effective to integrate\*, **improved rising and falling times of 15µs and 10µs respectively (40% Improvement\*)** and **custom sizes available in 1cm steps**.

The Aluminium casing of the product can be manufactured to sizes from **200 x 200mm** up to **900 x 900mm** or **1900 x 400mm**. This range topping illumination solution is perfect for area illuminations in **robotic applications**, such as pick and place, and logistics applications requiring **stable images on large fields of view**.


Available in Red, White and Infrared, the LEDs are mounted with **highly efficient lenses**, engineered to distribute the **highest brightness and uniformity balance** for the dome lighting applications.


As with all TPL Vision products, the **HPFDOME** comes with **current control integrated** and are **guaranteed for 3 years**. The HPFDOME comes installed with a rugged mounting plate and viewing hole for all cameras (the option for more than one hole is possible). The borders of product are 4mm around the edge of the homogeneous illumination surface (**85% homogeneity**).

(\*When compared to equivalent sizes Standard MFDOME+)

DIMENSIONS

		LENGTH (CM)																	
WIDTH (CM)	LENGTH	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190
	20																		
	30																		
	40																		
	50																		
	60																		
	70																		
	80																		
	90																		

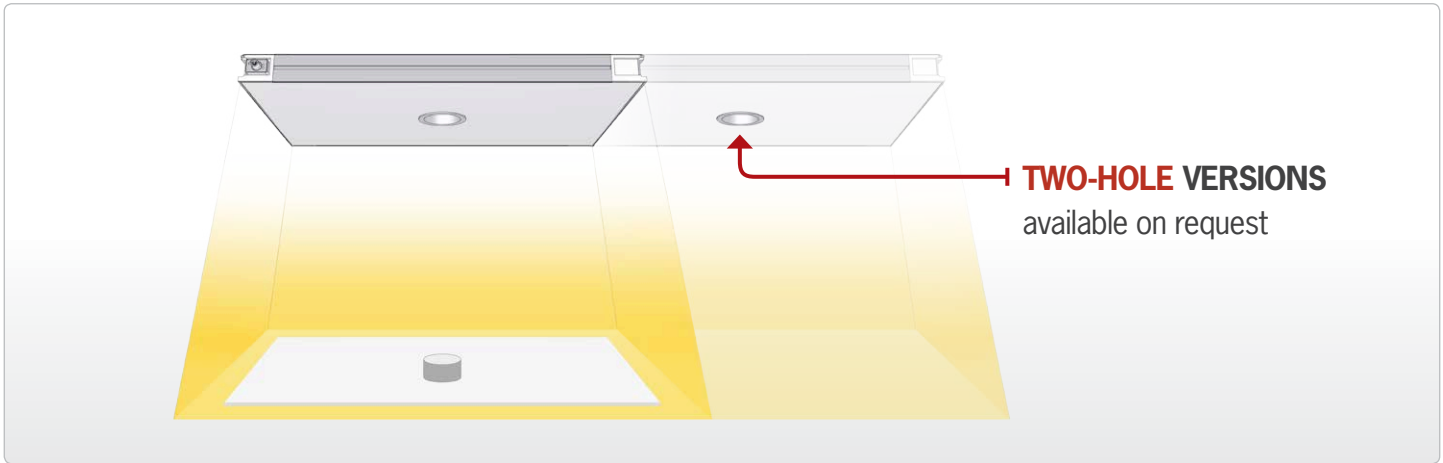
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1 connector
- 

1 connector + 1 additional power cable

**Custom sizes in centimetre steps** available on request anywhere in the **ORANGE** zones.


CONSIDERATIONS




## TECHNICAL SPECIFICATIONS

HPFDOME	
Electronics	
Power supply	24 VDC $\pm$ 10%
Functioning mode	Continuous or strobed
Strobe input	PNP : From 5 to 24V for 100% ON. From 0 to 1V for 100% OFF. NPN : less than 1V for 100% ON. Above 2V for 100% OFF. Max 20V.
Overdrive	No
Strobe conditions (On time, duty cycle)	No restriction
Dimming	Pin 5 (M12 5Pole Connector): 0-10V = 100-30% Respectively
Maximum rising time	15 $\mu$ s
Maximum falling time	10 $\mu$ s
Control	Connector M12 5 Poles
Connector pin configuration	1: 24VDC / 2: NPN / 3: GND / 4: PNP / 5: DIM 0-10V
Power supply cable(s) max length	10m
Consumption	White: 1.35W per 25cm <sup>2</sup> in peak (average) / Red: 1.41W per 25cm <sup>2</sup> in peak (average) / IR: 1.72W per 25cm <sup>2</sup> in peak (average)
Optics	
Colour	White (5700k), Red (630nm) and Infrared (850nm) – Other colours: please contact us
Brightness level at surface	Up to 45000 lux in continuous working (measured with the WHITE LED version of the product)
Mechanics	
Thickness	45mm
Lighting surface	Minimum: 0.2 x 0.2 m / Maximum Surface: 0.88m <sup>2</sup> / Maximum Length: 1.9m / Maximum Perimeter: 4.6m
Internal diameter	65mm
Weight	23.8 Kg/m <sup>2</sup> $\pm$ 15%
Materials	Aluminum and loaded ABS
Diffuser	White PMMA
Fixing	4 M4 nuts (supplied) to insert in the groove or 4 M3x20 screws (not supplied) applied to the corner slots
Environment	
Operating temperature	-10° C to +40° C / 80% of humidity without condensation / No thermal shock (maximum temperature variation: 10 DegC in 24h)
Storage temperature	-20° C to +60° C / 80% of humidity without condensation / No thermal shock (maximum temperature variation: 10 DegC in 24h)
IP protection	IP 40
Labels	RoHS-CE-WEEE


## EXTRAS

M12 female 5 pins cable	
	
<b>2 meters</b>	Ref: C-M12-5P-2M
<b>5 meters</b>	Ref: C-M12-5P-5M
<b>10 meters</b>	Ref: C-M12-5P-10M

Light mounting bracket

Ref: TPL-MOUNT-MBACK-SQUARE1

Safety glasses

Ref: EYE-PROTECT

Camera mounting bracket (horizontal)

Ref: TPL-MOUNT-MFDOME-H1

Camera mounting bracket (vertical)

Ref: TPL-MOUNT-MFDOME-V1



# HOW TO BUILD YOUR REFERENCE

HPFD	L LENGTH (CM)	W WIDTH (CM)	COLOUR	WIRING 1		WIRING 2	
				TYPE 1	POSITION	TYPE 2	POSITION
	20	20	WHI	N	1	A	1
	30	30	630	CONNECTOR M12*	2	B	2
	40	40	850	*M12 - 5 pins connector	3	C	3
	50	50			4		4
	60	60					5
	70	70					6
	80	80					7
	90	90					8
	100						
	110						
	120						
	130						
	140						
	150						
	160						
	170						
	180						
	190						

OTHER COLOURS ■ ■  
Please contact us.

The first figure shall always be the biggest one.

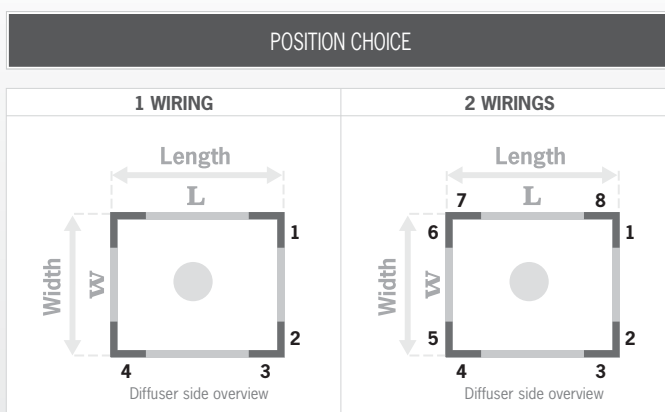
The position of wiring 2 must be different from the position of wiring 1. It must be on a different corner.

■ SURFACE  $\leq 0.25 \text{ m}^2$  → 1 connector M12 5 pins  
■ SURFACE  $> 0.25 \text{ m}^2$  → 1 connector M12 5 pins + 1 additional power cable

## REFERENCE EXAMPLES:

HPFDOME 30x20 cm White LED Connector M12 5 pins position n°4:  
→ HPFD-3020-WHI-N4

HPFDOME 80x50 cm Red LED Connector M12 5 pins position n°1  
+ additional power cable 2.50 meters position n°5:  
→ HPFD-8050-630-N1A5



## TPL VISION IS EXTREMELY CAREFUL ABOUT BIN SORTING IN THE SELECTION OF LEDs FOR THEIR PRODUCTS.

The human eye is particularly sensitive to color variations. Two products of the same color may appear different in the eyes of the user. However, **the maximum variation of the wavelength DOES NOT EXCEED 10 NM.**

Here are the following bandpass camera filters we recommend:

- White LEDs: no filter required
- Red LEDs: BP 635 (<http://midopt.com/filters/bp635/>)
- Infrared LEDs: LP 830 (<http://midopt.com/filters/lp830/>)

We advise using bandpass filters from MidOpt: [www.midopt.com](http://www.midopt.com)

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High Power HPFDOME

