

MEDIUM FLAT MFDOME+

FLAT DOME, POWERFUL LIGHT

► MACHINE VISION APPLICATIONS

► LED LIGHTING SYSTEM

► VERY DIFFUSE LIGHTING

► ULTRA-THIN BORDERS

► FIT CAMERA'S OBJECTIVES

POWERFUL FLAT DOME HOMOGENEOUS & EASY TO INCORPORATE



3 VERSIONS

Besides the **Standard version**, there are 2 other versions:

OVERDRIVE VERSION

Power customisable by the user, overdrive up to **x3**

EXPERT VERSION

Light managed by a remote controller overdrive up to **x6**

Both powerful and very diffuse, the Medium Flat MFDOME+ can deal with many machine vision applications. The Medium Flat MFDOME+ has been designed to detect small pieces in a container, to highlight thermoformed products or also to improve contrasts on workpieces made of several materials. The OVERDRIVE version can offer a lighting power far higher and the EXPERT version (with no current control inside) even more. It works in continuous and strobe mode, with very short rising and falling times: 25 μ s and 15 μ s.

Equipped with very thin borders, the new Medium Flat MFDOME+ uniformly illuminates from the whole useful surface, included from the edges. No hot spot to notice! Very thin, the Medium Flat MFDOME+ gets a hole in the middle to insert the camera's lens. The connector can be placed on any side of the Medium Flat

MFDOME+, which can then be set up on any kind of conveyor belts. At the basis of the connector, 2 LED show if the product is powered and if the strobe mode is on.

The Medium Flat MFDOME+ is available in various wavelengths, and also in various dimensions. For specific sizes, that don't belong to the standard range, you can call TPL Vision for customized products.

3 VERSIONS AVAILABLE

The **STANDARD version** is very easy to use: you don't have to adjust anything, only to plug the light. The STANDARD version works in continuous and strobe mode, with rising and falling times especially short: 25 μ s and 15 μ s. The STANDARD version generates a high powerful light, that fits most machine vision applications. Moreover, some LED, close to the connector, show if the light is powered, and if the strobe mode is on, for a better use of the product. Besides the **STANDARD Version**, 2 other versions are available : OVERDRIVE and EXPERT.



OVERDRIVE UP TO **x3** WITH CURRENT CONTROL INSIDE

The OVERDRIVE version is just as easy to set and to use as the STANDARD version. Equipped with specific electronics, it gives the opportunity for users to overdrive on their own the lighting power. The OVERDRIVE version is dedicated to specialists who want to customize the luminous flux very precisely, so as to get the most reliable results.

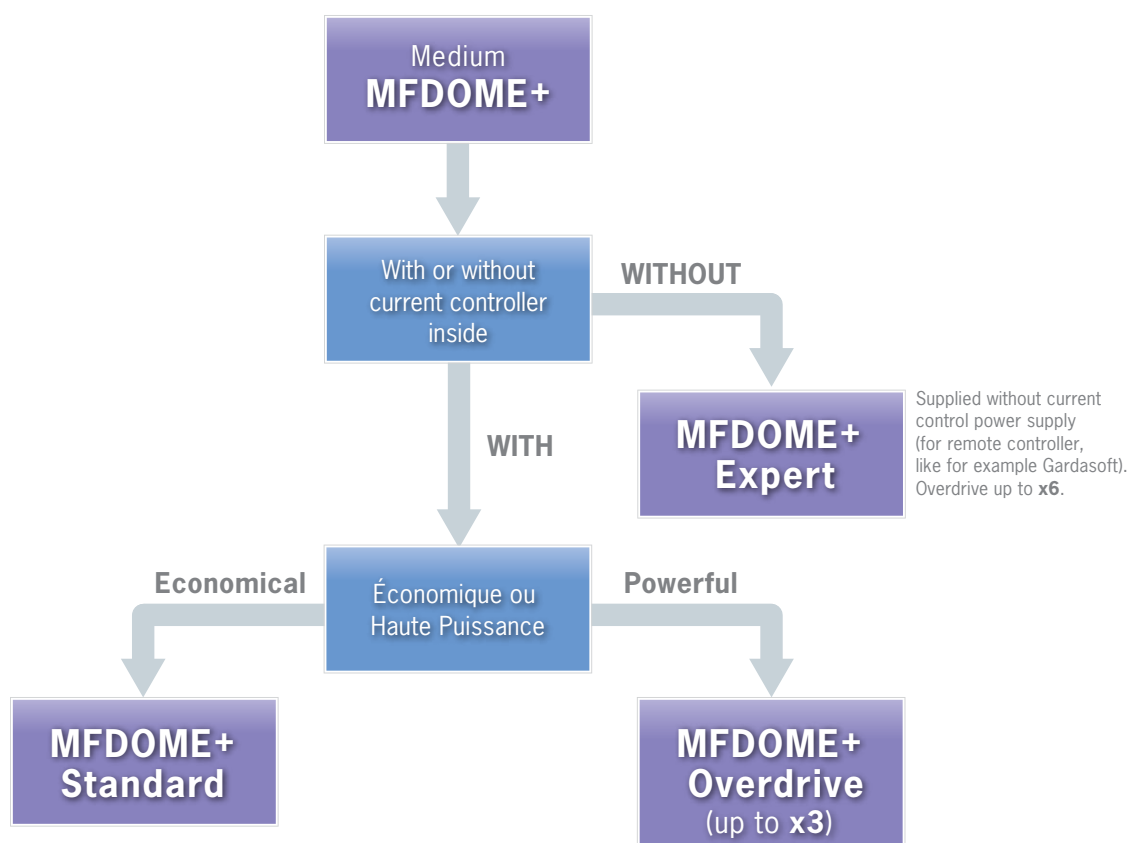


OVERDRIVE UP TO **x6** WITH YOUR OWN CONTROLLER

In the EXPERT version, the products do not have any current controller, which is very useful for users who want to work with their own controllers. In strobe mode, they can use the EXPERT lights in overdrive, so as to get a more intense lighting power. The EXPERT version definitely targets machine vision specialists, able to manage a whole vision system.



HOW TO CHOOSE A MEDIUM FLAT MFDOME+ ?

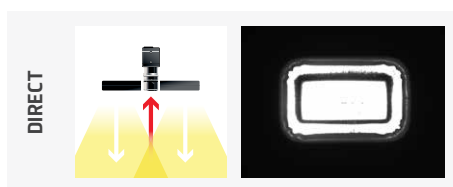


TECHNICAL SPECIFICATIONS

	MFDOME+		MFDOME+ OVERDRIVE		MFDOME+ EXPERT	
Electronics						
Power supply	24 VDC ±10%				External current controller (not supplied)	
Functioning mode	Continuous or strobe					
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.				N/A	
Overdrive	No		61 KLux (Standard :32 Klux)		According to power supply	
Strobe Conditions (On time, duty cycle)	No restriction		3ms @ 10% at max power		300µs @ 5% at max power	
Dimming	Potentiometer 30-100%				N/A	
Maximum rising time	25 µs				According to power supply	
Maximum falling time	15 µs				According to power supply	
Wiring	Surface ≤ 0,5m² : 1 connector M12 T-Power 12A 4 poles or 1 cable 4x1,5²	Surface > 0,5m² : 1 connector M12 T-Power 12A 4 poles and 1 cable 4x1,5²	Surface ≤ 0,25m² : 1 connector M12 T-Power 12A 4 poles or 1 cable 4x1,5²	0,25m² < Surface < 0,88m² : 1 connector M12 T-Power 12A 4 poles and 1 cable 4x1,5²	Surface ≤ 0,25m² : 1 cable 4x1,5²	0,25m² < Surface < 0,5m² : 2 cables 4x1,5²
Power supply cable(s) max length	Wire M12 : 10m (not supplied) ; Cable : 10m				10m	10m
Max consumption	1,32W par 25cm² in peak and on average		3W/25cm² in peak max 0,43W/25cm² max on average (3ms@10%)		7,8W/25cm² in peak max 0,54W/25cm² max on average (300µs@5%)	
Optics						
Colour	White, Red, Green, Blue, Infrared					
Mechanics						
Thickness	45mm					
Surface	Mini 200x200mm – Max surface 0,88m² Max length 1,9m – Max perimeter 4,5m		Mini 200x200mm – Max surface 0,88m² Max length 1,9m - Max perimeter 4,5m		Mini 200x200mm – Max surface 0,5m² Max length 1,9m - Max perimeter 4,5m	
Internal diameter	65mm					
Weight	23.8 Kg/m² ±15%					
Body materials	Aluminum and loaded ABS					
Diffuser	White PMMA					
Fixing	4 M4 nuts (supplied) to insert in the groove or 4 M3x20 screws (not supplied)					
Environment						
Operating temperature	-10° to +40°C / 80% of humidity without condensation / No thermal shock (max temperature variation: 10°C in 24h)					
Storage temperature	-20° to +60°C / 80% of humidity without condensation / No thermal shock (max temperature variation: 10°C in 24h)					
IP protection	IP 40					
Labels	RoHS-CE-WEEE					

LIGHTING POWER

MFDOME+	MFDOME+ OVERDRIVE
32 KLux	61 KLux



Lighting power measured on the diffusing plate – White LED colour.

AVAILABLE DIMENSIONS

MFDOME+																		
LONGUEUR LARGEUR	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900
200	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
300		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
400			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
500				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
600					✓	✓	✓	✓	✓	✓	✓	✓	✓					
700						✓	✓	✓	✓	✓	✓							
800							✓	✓	✓	✓								
900								✓										

MFDOME+ OVERDRIVE																		
LONGUEUR LARGEUR	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900
200	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
300		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
400			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
500				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
600					✓	✓	✓	✓	✓	✓	✓	✓	✓					
700						✓	✓	✓	✓	✓	✓							
800							✓	✓	✓	✓								
900								✓										

MFDOME+ EXPERT																		
LONGUEUR LARGEUR	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900
200	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
300		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
400			✓	✓	✓	✓	✓	✓	✓	✓	✓							
500				✓	✓	✓	✓	✓	✓									
600					✓	✓	✓											
700						✓												

RELATED PRODUCTS

M12 female T-POWER 4 pins cable



2 meters

Ref: C-M12-4P-T-2M


5 meters

Ref: C-M12-4P-T-5M

10 meters

Ref: C-M12-4P-T-10M

Light mounting bracket



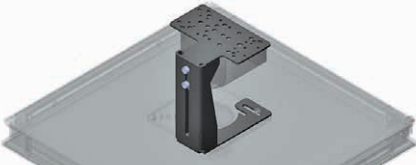
Ref: TPL-MOUNT-HPB-SQUARE1

Safety glasses




Ref: EYE-PROTECT

Camera mounting bracket (horizontal)



Ref: TPL-MOUNT-HPFD-H1

Camera mounting bracket (vertical)



Ref: TPL-MOUNT-HPFD-V1



HOW TO BUILD YOUR REFERENCE

MFDOME	VERSION	L LENGTH (CM)	W WIDTH (CM)	COLOUR
	STANDARD	20	20	WHI
	O OVERDRIVE	30	30	630
	E EXPERT	40	40	525
		50	50	470
		60	60	850
		70	70	
		80	80	
		90	90	
		100		
		110		
		120		
		130		
		140		
		150		
		160		
		170		
		180		
		190		

The first figure shall always be the biggest one.

WIRING 1		WIRING 2	
TYPE 1	POSITION	TYPE 2	POSITION
M CONNECTOR M12 *	1	A CABLE 2.5 m	1
A CABLE 2.5 m	2	B CABLE 5 m	2
B CABLE 5 m	3	C CABLE 10 m	3
C CABLE 10 m	4		4
			5
			6
			7
			8

*T-Power M12 connector for STANDARD and OVERDRIVE versions only

The position of wiring 2 must be different from the position of wiring 1.

WIRING CHOICE		
STANDARD	OVERDRIVE	EXPERT
SURFACE $\leq 0.5M^2$ 1 wiring	SURFACE $\leq 0.25M^2$ 1 wiring	SURFACE $\leq 0.25M^2$ 1 wiring
Connector M12 T-Power OR Cable 2.50m OR 5m OR 10m	Connector M12 T-Power OR Cable 2.50m OR 5m OR 10m	Cable 2.50m OR 5m OR 10m
SURFACE $> 0.5M^2$ 2 wirings	$0.25M^2 < S. < 0.88M^2$ 2 wirings	$0.25M^2 < S. < 0.5M^2$ 2 wirings
Connector M12 T-Power + Cable 2.50m OR 5m OR 10m	Connector M12 T-Power + Cable 2.50m OR 5m OR 10m	Cable 2.50m OR 5m OR 10m + Cable 2.50m OR 5m OR 10m

POSITION CHOICE	
1 WIRING	2 WIRINGS
REFERENCE EXAMPLES: MFDOME+ STANDARD 30x20 cm White LED Connector M12 T-Power position n°4: ⇒ MFDOME-3020-WHI-M4 MFDOME+ OVERDRIVE 80x50 cm Red LED Connector M12 T-Power position n°1 Cable 2.50 meters position n°5: ⇒ MFDOME-O-8050-630-M1A5 MFDOME+ EXPERT 60x60 cm Blue LED Cable 10 meters position n°2 Cable 5 meters position n°8: ⇒ MFDOME-E-6060-470-C2B8	

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
- Infrared LEDs: LP 830 (<http://midopt.com/filters/lp830/>)
- Red LEDs: BP 635 (<http://midopt.com/filters/bp635/>)
- Cyan LEDs: BP 505 (<http://midopt.com/filters/bp505/>)

We advise using bandpass filters from MidOpt: **www.midopt.com**

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Other available documents :

- PDF, DWG, DXF, IGS, STEP & X_Y DRAWINGS
- USER'S GUIDE

MFDOME+

RoHS
COMPLIANT **CE**