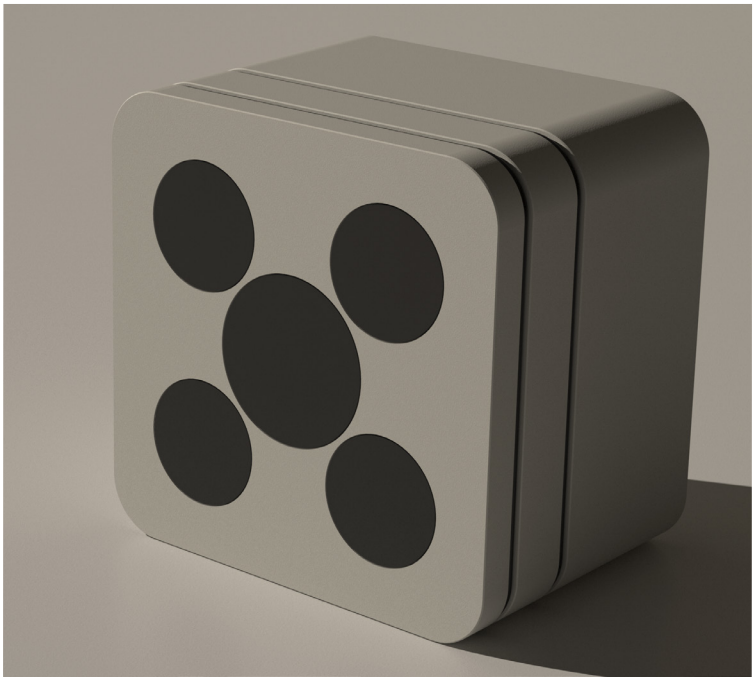
THE NEW FOTONIC G-SERIES

A NEW GENERATION OF TIME-OF-FLIGHT CAMERAS

Our experienced team of engineers knows what it takes to meet the highest demands of the industry. That is why reliable high performance and robust design are two key features of Fotonic 3D cameras.

The Fotonic G-Series has the following features:

- Full VGA resolution (640 x 480)
- Frame rate: 40 fps
- Gigabit Ethernet
- 2 GPI, 2 GPO, CAN, external trigger, frame sync output, serial port (optional)
- Embedded processor for customer applications (optional)
- Robust and compact
- Ingress protection IP65 and IP67
- Interchangeable front glass



"We believe 3D cameras are the key enabler new automation and robotics need to create a safe, sustainable world"

It is possible to configure both the field of view and the processing power of a G-Series camera. This allows you to tailor a camera that best suits your applications with regards to measurement range, target characteristics, and image processing requirements.

OPTIONS

Field of view

80° x 64° or 45° x 34° (horizontal x vertical)

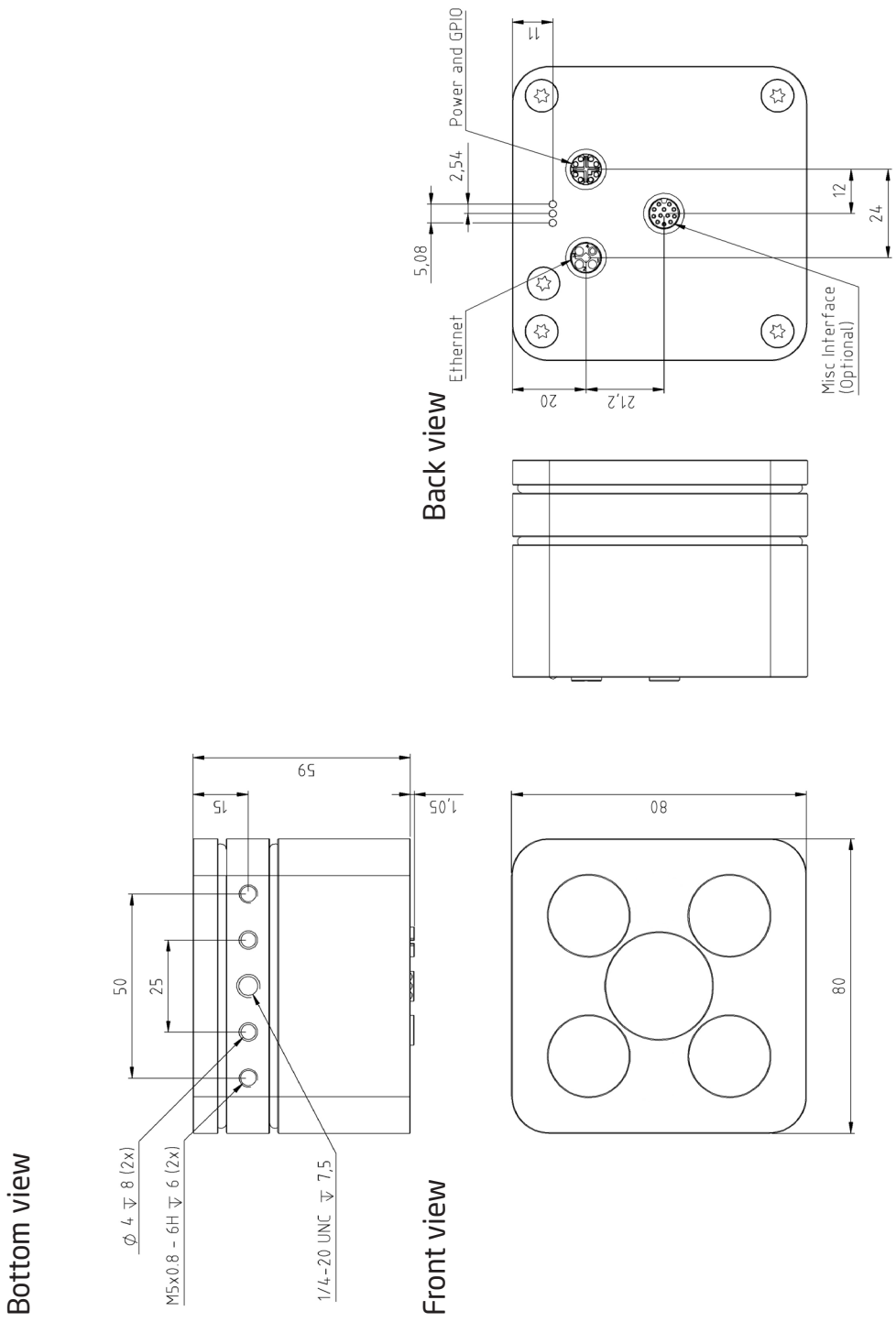
Processing power:

Optional Quadcore ARM A9 for customer applications

PARAMETERS					COMMENTS
Product ID	**G80**	**G80-SMART**	**G45**	**G45-SMART**	
Product number	3225	3227	3224	3226	
Product revision	A	A	A	A	
Sensor					
Type of sensor	CCD				
Frame rate	40 fps				Full frames Depth (x,y,z) and IR
Depth image resolution	640 x 480				
Unambiguous range	0 - 26 m				Camera setting dependent.
Typical operating range	0,15 - 5 m		0,3 - 10 m		Camera setting and target reflectivity dependent
External light resillience	100kLux*		100kLux*		Values correspond to sunlight spectrum. In the case of light sources with less radiation in NIR wavelengths (such as normal LED or fluorescent light) the resillience to external light is much higher.
Multi camera option	Yes		Yes		
HDR mode	Yes		Yes		High Dynamic Range
Illumination and Optics					
IR illumination power	40 W				Peak power
IR wave length	850 nm				
IR pulse length	22 ns - 88 ns				
Field of view	80° x 64°		45° x 34°		Custom FoV on request
Accuracy**					
Absolute accuracy					Maximum deviation. Reflectivity of target 55 %. Ambient temperature 20°C.
0,15 - 0,3	± 10 mm				
>0,3 - 1,5 m	± 10 mm		± 10 mm		
>1,5 - 3 m	± 20 mm		± 20 mm		
>3 - 5 m	± 30 mm		± 30 mm		
>5 - 7 m			± 30 mm		
Repeatability (1σ)					Maximum standard deviation. Reflectivity of target 55 %. Ambient temperature 20°C. Defined as mean value of the single pixel standard deviations, within the region of interest.
0,15 - 0,3	5 mm				
>0,3 - 1,5 m	5 mm		5 mm		
>1,5 - 3 m	15 mm		10 mm		
>3 - 5 m	30 mm		20 mm		
>5 - 7 m			30 mm		
Temperature stability					Maximal deviation. Measured at 0,4 m. Reflectivity of target 30 % T = Ambient temperature
20°C ≤ T ≤ 30°C	≤ 0.5 mm/°C				
10°C ≤ T ≤ 50°C	≤ 1.5 mm/°C				
Depth resolution	1 mm				Over full operating range
Relative accuracy	± 5 mm				Maximal deviation Measured at 0,4 m. Reflectivities 30 % and 90 %

* Accuracy, repeatability and operating range will be reduced.
** Measured in Z-direction, for 11 x 11 central pixels, over 20 frames. Camera in steady state temperature.
Ambient illumination in NIR wavelength area 0Lux, Measured on single flat target.

PARAMETERS					COMMENTS
Housing	**G80**	**G80-SMART**	**G45**	**G45-SMART**	
Size	80 x 80 x 58 mm				[height x width x length]
Weight	750 g				
Material	Anodized Aluminum				
Window material	Float glass				For Sapphire glass option, contact Fotonic sales
Cleaning	Damp cloth, no detergent				
Environmental					
Operating temperature	-20°C - +50°C				Non condensing
Storage temperature	-20°C - +70°C				Non condensing
Cooling	Passive				Camera must be attached to heat sink during all operation
Ingress protection	IP65 and IP67				
Shock and vibration	IEC60068-2-6 Fc: 10-55-10Hz (1 oct/min), 0.35 mm, 30 min, dir: x,y,z IEC68-2-29 Eb: 10g, 16 ms, -500 +500 , dir : x,y,z IEC68-2-27 Ea: Half sine, 500 m/s2, 6 ms, 3x6				
Certification					
Conformity	CE, FCC, RoHS				FCC Part 15 Subpart B (47CFR15.109)
EMC	Emission: EN 61000-6-3:2007 +A1:2011 Immunity: EN 61000-6-2:2005				
Eye safety	EN 60825-1:2007, Class 1				
Interfaces					
Data	Gigabit Ethernet				
I/O	1 GPI, 1 GPO	2 GPI, 2 GPO, CAN, external trigger, frame sync output, serial port	1 GPI, 1 GPO	2 GPI, 2 GPO, CAN, external trigger, frame sync output, serial port	
Power connector	4-PIn, M12, T-coded, Socket				
Ethernet connector	8-Pin, M12, X-coded, Socket				
SMART connector	N/A	12-Pin, M12, A-coded, Socket	N/A	12-Pin, M12, A-coded, Socket	
Mounting thread	2 x M5, 6mm thread depth 1 x UNC1/4" (Tripod thread)				See drawing of mounting thread position on page 4
Power supply					
Power supply	12-24 V (-25%, +50 %)				
Power consumption	Typical 11 W				
Software					
Drivers	Linux, Windows 7,8,10				
PC-API	Gen<I>Cam, Python				
Camera internal API	N/A	Gen<I>Cam, Python	N/A	Gen<I>Cam, Python	
Cross compiler, debugger	N/A	GCC based toolchain	N/A	GCC based toolchain	
Embedded processor for customer applications					
CPU	N/A	800 MHz Quad-core ARM A9	N/A	800 MHz Quad-core ARM A9	Freescale iMX6
RAM / Flash	N/A	1 GB / 4 GB	N/A	1 GB / 4 GB	
OS	N/A	Linux	N/A	Linux	



Fotonic is a Swedish company manufacturing cameras for 3D imaging. Our products combine robustness and high performance in order to meet the highest standards of the industry.

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