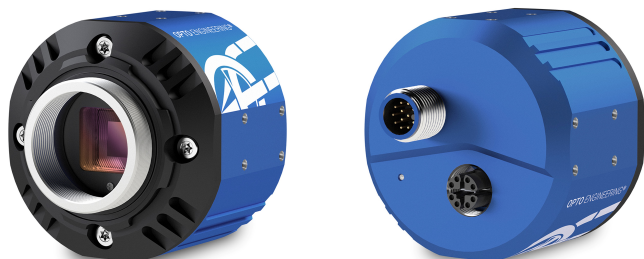




OPTO ENGINEERING

# ITA124-GM-20C-IP | DATASHEET

Area scan camera 12.4MP, Sony IMX545, CMOS Global shutter, 1/1.1", Mono, 1 GigE, POE, C mount



## KEY ADVANTAGES

### IP67-rated housing

Protection against water and dust.

### MADE IN ITALY

Cameras designed and manufactured in Italy by Opto Engineering.

### TOP QUALITY SERVICE

5 years warranty.

### Ruggedized

-25° C to 65° operating temperature. Stainless steel mount, milled aluminum body. Tested for shock and vibration resistance.

### MAXIMUM CONNECTIVITY

Isolated PoE supply, broad range of I/Os, serial communication.

### HIGH PROCESSING CAPABILITY

Large on-board image buffer, large FPGA.

### EXCELLENT QUALITY/PRICE RATIO

GEN*i*CAM

**GigE**  
VISION

1288  
EMVA Standard Compliant



**ITALA-G.IP series** is a series of GigE vision PoE area scan cameras featuring an IP67-rated housing. By adding sealed lens tubes from IPT series and IP67 cables, ITALA G.IP cameras ensure protection against solid particles like dust, dirt, and sand and water.

## KEY FEATURES

|           |                         |                          |                     |                        |            |                   |                   |                       |
|-----------|-------------------------|--------------------------|---------------------|------------------------|------------|-------------------|-------------------|-----------------------|
|           |                         |                          |                     |                        |            |                   |                   |                       |
| IP67      | 1 GIGE                  | 12-24 VOLT               | POWER OVER ETHERNET | 12-BIT DEPTH           | BURST      | IMAGE COMPRESSION | FAST TRIGGER MODE | DUAL EXPOSURE         |
|           |                         |                          |                     |                        |            |                   |                   |                       |
| SEQUENCER | PRECISION TIME PROTOCOL | SCHEDULED ACTION COMMAND | REGION OF INTEREST  | BINNING AND DECIMATION | CHUNK DATA | OPTO ISOLATED I/O | ENCODER           | DUAL SERIAL INTERFACE |
|           |                         |                          |                     |                        |            |                   |                   |                       |
| MODBUS    | API C                   | API C++                  | API C#              | API Python             | WINDOWS    | LINUX             |                   |                       |

All product specifications and data are subject to change without notice to improve reliability, functionality, design or other. Photos and pictures are for illustration purposes only. Data are reported by design, actual lens performance may vary due to manufacturing tolerances.

## SPECIFICATIONS

## Sensor Specification

|                      |             |
|----------------------|-------------|
| Megapixel            | 12.4        |
| Resolution           | 4128 x 3008 |
| Sensor format        | 1/1.1"      |
| Sensor diagonal (mm) | 14.0        |
| Pixel size (μm)      | 2.74        |
| Sensor model         | IMX545      |
| Sensor type          | CMOS        |
| Shutter              | Global      |
| Chroma               | Mono        |

## Connectivity

|                                        |                                                   |
|----------------------------------------|---------------------------------------------------|
| Data connector                         | RJ45                                              |
| Data interface                         | 1 GigE                                            |
| I/O connector                          | 12-pin Hirose                                     |
| I/O interface                          | 2x opto-isolated input<br>4x opto-isolated output |
| Serial interface                       | RS232, RS485                                      |
| Liquid lens controller                 | no                                                |
| Encoder interface                      | yes, incremental                                  |
| Power supply (V)                       | 12-24, PoE (IEEE 802.3af class 2)                 |
| Max power consumption <sup>2</sup> (W) | 4                                                 |

## Compliance

|                     |                                                  |
|---------------------|--------------------------------------------------|
| Standards           | GigE Vision 2.2, GenICam, GenTL                  |
| Client software     | ITALA View or other GigE Vision 2.x software     |
| Operating systems   | 64-bit Windows 10/11<br>Ubuntu 18.04/20.04/22.04 |
| Shock and vibration | EN 60068-2-27<br>EN 60068-2-6<br>EN 60068-2-64   |
| Warranty (years)    | 5                                                |

## Mechanical Specifications

|                 |                                      |
|-----------------|--------------------------------------|
| Mount           | C                                    |
| Dimensions (mm) | 54 x 54 x 51.3                       |
| Clamping system | 16x M3 threaded holes (on all sides) |
| Mass (g)        | 200                                  |

## Camera Specification

|                               |                                                                               |
|-------------------------------|-------------------------------------------------------------------------------|
| Filter                        | AR glass                                                                      |
| Frame rate <sup>1</sup> (fps) | 9.5                                                                           |
| Frame rate burst (fps)        | 17.4                                                                          |
| Exposure time                 | 1.02 μs - 10 s                                                                |
| ADC resolution (bit)          | 10/12                                                                         |
| Dynamic range (dB)            | 69.6                                                                          |
| Gain range (dB)               | 0-48                                                                          |
| SNR (dB)                      | 39.5                                                                          |
| Image buffer (MB)             | 384                                                                           |
| Image processing              | Binning, decimation, ROI, gamma, black level, LUT, defective pixel correction |
| Pixel formats                 | Mono 8/ 10p/ 10Packed/ 12p/12Packed                                           |
| Chunk data                    | yes                                                                           |
| User sets                     | 3                                                                             |
| Timers/Counters               | 2/4                                                                           |
| Synchronization               | Free run, software trigger, hardware trigger, PTP (IEEE 1588)                 |

## Environment

|                                         |                       |
|-----------------------------------------|-----------------------|
| Operating temperature <sup>3</sup> (°C) | -25 - +65             |
| Storage temperature <sup>4</sup> (°C)   | -10 - +60             |
| Operating relative humidity (%)         | 20-80, non condensing |
| IP rating                               | IP67                  |

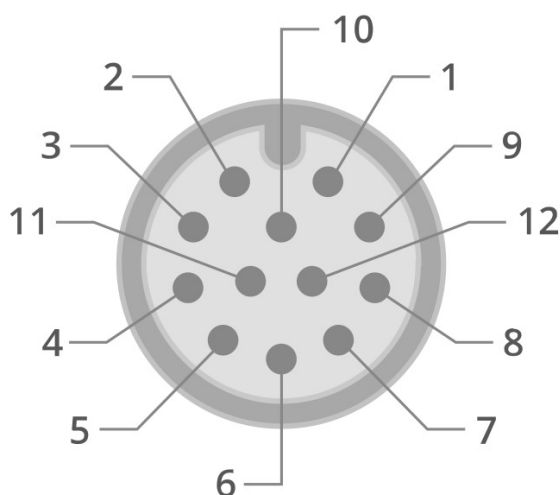
<sup>1</sup> Color-model's fps are calculated using BayerRG8 pixel format

<sup>2</sup> Measured with 24V power supply

<sup>3</sup> Case temperature, measured on the front part of the camera body

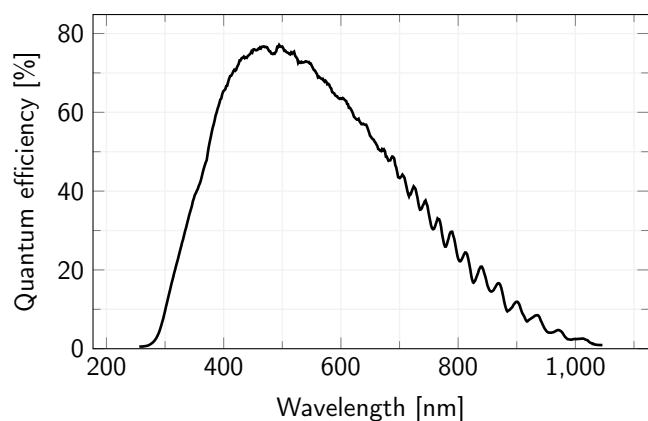
<sup>4</sup> Ambient temperature

## M12 PINOUT

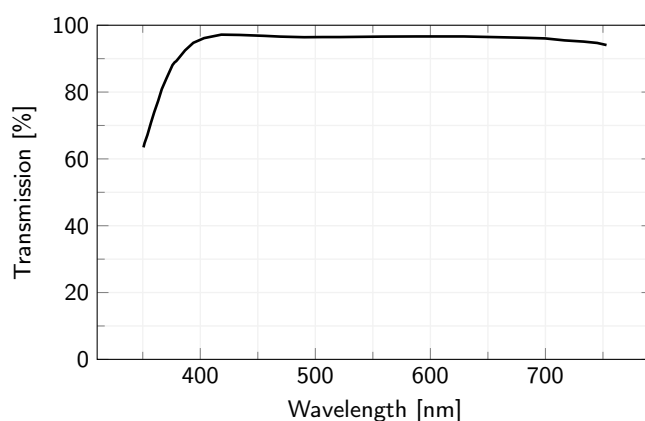


| Pin | Signal       |
|-----|--------------|
| 1   | GND          |
| 2   | +VIN         |
| 3   | Opto OUT 3   |
| 4   | Opto IN 0    |
| 5   | Opto OUT 2   |
| 6   | Opto OUT 0   |
| 7   | Opto REF GND |
| 8   | RS232 RX     |
| 9   | RS232 TX     |
| 10  | Opto REF V+  |
| 11  | Opto IN 1    |
| 12  | Opto OUT 1   |

## SENSOR QUANTUM EFFICIENCY



## FILTERS TRANSMISSION



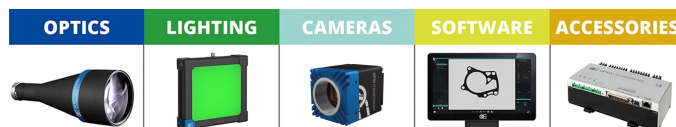
## RECOMMENDED ACCESSORIES



Opto-Engineering® offers sealed lens tubes of different diameters to be used with varying lens sizes (IPT-Series) and sealed M12 cables (CB series) to complete your vision system.

## COMPATIBLE PRODUCTS

Full list of compatible products available [here](#).



A wide selection of innovative machine vision components.