



# ITA246-GC-20C-EL | DATASHEET

Area scan camera 24.55MP, Sony IMX540, CMOS Global shutter, 1.2", Color, 1 GigE, POE, C mount, with integrated liquid lens controller



### KEY ADVANTAGES

#### MADE IN ITALY

Cameras designed and manufactured in Italy by Opto Engineering.

#### EASY INSTALLATION

Built-in liquid lens control: no external driver needed.

#### TOP QUALITY SERVICE

5 years warranty.

#### HIGH ROBUSTNESS

Aluminum body & steel lens mount, shock & vibration certified, wide temperature range.

#### 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

The **ITALA-G.EL series** is a series of GigE Vision industrial cameras with integrated liquid lens control designed and built in Italy by Opto Engineering®.



### KEY FEATURES



1 GIGE



12-24 VOLT



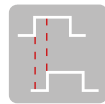
POWER OVER ETHERNET



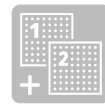
12-BIT DEPTH



BURST



FAST TRIGGER MODE



DUAL EXPOSURE



SEQUENCER



PRECISION TIME PROTOCOL



SCHEDULED ACTION COMMAND



REGION OF INTEREST



BINNING AND DECIMATION



CHUNK DATA



AUTO WHITE BALANCE



COLOR CORRECTION MATRIX



LIQUID LENS CONTROLLER ISOLATED I/O



ENCODER



API C



API C++



API C#



WINDOWS



LINUX

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## SPECIFICATIONS

### Sensor Specification

|                 |                   |             |
|-----------------|-------------------|-------------|
| Megapixel       |                   | 24.55       |
| Resolution      |                   | 5328 x 4608 |
| Sensor format   |                   | 1.2"        |
| Sensor diagonal | (mm)              | 19.3        |
| Pixel size      | ( $\mu\text{m}$ ) | 2.74        |
| Sensor model    |                   | IMX540      |
| Sensor type     |                   | CMOS        |
| Shutter         |                   | Global      |
| Chroma          |                   | Color       |

### Connectivity

|                                    |     |   |
|------------------------------------|-----|---|
| Data connector                     |     | RJ45  |
| Data interface                     |     | 1 GigE  |
| I/O connector                      |     | 12-pin Hirose                                     |
| I/O interface                      |     | 2x opto-isolated input<br>1x opto-isolated output |
| Serial interface                   |     | no  |
| Liquid lens controller             |     | yes (EL-3-10, EL-16-40)                           |
| Encoder interface                  |     | yes, incremental                                  |
| Power supply                       | (V) | 12-24, PoE (IEEE 802.3af class 2)                 |
| Max power consumption <sup>2</sup> | (W) | 6   |

### 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) | 40.5 x 40.5 x 51.2                   |
| Clamping system |      | 16x M3 threaded holes (on all sides) |
| Mass            | (g)  | 142                                  |

### Camera Specification

|                         |       |   |
|-------------------------|-------|---|
| Filter                  |       | IR cut  |
| Frame rate <sup>1</sup> | (fps) | 4.8   |
| Frame rate burst        | (fps) | 9.1   |
| Exposure time           |       | 2.46 $\mu\text{s}$ - 10 s   |
| ADC resolution          | (bit) | 10/12   |
| Dynamic range           | (dB)  | 69.7  |
| Gain range              | (dB)  | 0-48  |
| SNR                     | (dB)  | 39.8526977543304  |
| Image buffer            | (MB)  | 384   |
| Image processing        |       | Binning, decimation, ROI,<br>gamma, black level, LUT,<br>defective pixel correction, white<br>balance, color corection matrix |
| Pixel formats           |       | Mono 8/10/12, RGB8, Bayer GR<br>8/10p/10Packed/12p/12Packed,<br>YUV 422Packed   |
| Chunk data              |       | yes   |
| User sets               |       | 3   |
| Timers/Counters         |       | 2/4   |
| Synchronization         |       | Free run, software trigger,<br>hardware trigger, PTP (IEEE<br>1588)   |

### Environment

|                                    |                        |                       |
|------------------------------------|------------------------|-----------------------|
| Operating temperature <sup>3</sup> | ( $^{\circ}\text{C}$ ) | -25 - +65             |
| Storage temperature <sup>4</sup>   | ( $^{\circ}\text{C}$ ) | -10 - +60             |
| Operating relative humidity        | (%)                    | 20-80, non condensing |
| IP rating                          |                        | IP30                  |

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

<sup>2</sup> Measured with 24V power supply and liquid lens connected to the camera

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

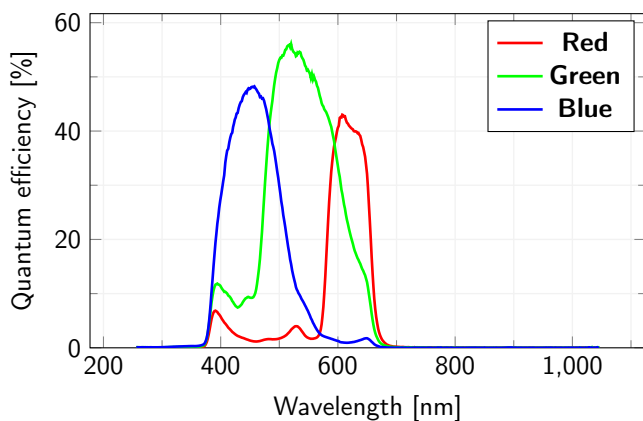
<sup>4</sup> Ambient temperature

**HIROSE PINOUT**

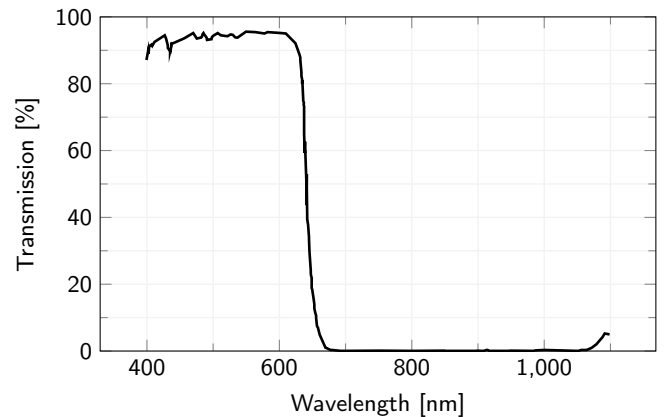


| Pin | Signal       |
|-----|--------------|
| 1   | GND          |
| 2   | +VIN         |
| 3   | Lens -       |
| 4   | Opto IN 0    |
| 5   | Lens +       |
| 6   | Opto OUT 0   |
| 7   | Opto REF GND |
| 8   | Lens SCL     |
| 9   | Lens SDA     |
| 10  | Opto REF V+  |
| 11  | Opto IN 1    |
| 12  | Lens +3.3V   |

**SENSOR QUANTUM EFFICIENCY**



**FILTERS TRANSMISSION**



**RECOMMENDED ACCESSORIES**

Opto-Engineering® suggests the following accessories to power the camera:

- **CBETH003**, Ethernet cable, CAT6, industrial level, high flexible cable with screw, 5 m
- **CBGPEL12P6P-03M**, I/O cable, side 1 HIROSE 12 pin, side 2 HIROSE 6 pin, 0.3 m
- **CBGPIO12PY6P-3M**, I/O cable, side 1 HIROSE 12 pin, side 2 HIROSE 6 pin, side 3 cable end, 3m+0.3m
- **RT-POE15M-1AFE-R**, 15.4W Single Port Power-over-Ethernet IEEE802.3af Power Injector

**COMPATIBLE PRODUCTS**

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



A wide selection of innovative machine vision components.

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