



# ITA51-GC-20C-EL | DATASHEET

Area scan camera 5.1MP, Sony IMX547, CMOS Global shutter, 1/1.8", 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



PRECISION TIME PROTOCOL



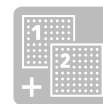
12-BIT DEPTH



BURST



FAST TRIGGER MODE



DUAL EXPOSURE



SCHEDULED ACTION COMMAND



REGION OF INTEREST



BINNING AND DECIMATION



CHUNK DATA



OPTO ISOLATED I/O



LIQUID LENS CONTROLLER



ENCODER



AUTO WHITE BALANCE



COLOR CORRECTION MATRIX



API C



API C++



WINDOWS



LINUX

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## SPECIFICATIONS

### Sensor Specification

|                 |                   |             |
|-----------------|-------------------|-------------|
| Megapixel       |                   | 5.1         |
| Resolution      |                   | 2472 x 2064 |
| Sensor format   |                   | 1/1.8"      |
| Sensor diagonal | (mm)              | 8.8         |
| Pixel size      | ( $\mu\text{m}$ ) | 2.74        |
| Sensor model    |                   | IMX547      |
| 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) | 5.2   |

### 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) | 23.0  |
| Frame rate burst        | (fps) | 39.5  |
| Exposure time           |       | 2.47 $\mu\text{s}$ - 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                  |

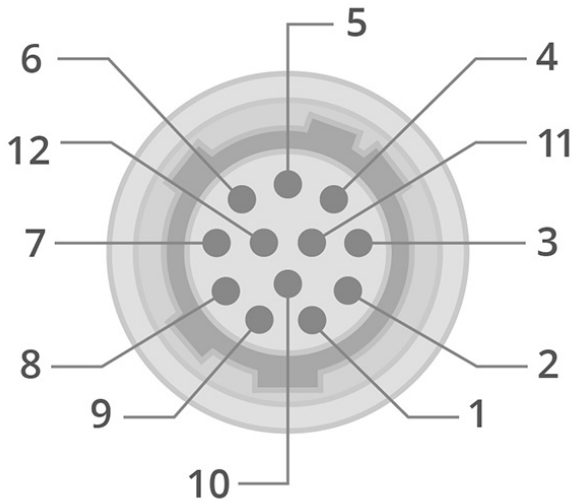
<sup>1</sup> Color-model's fps are calculated using BayerRG8 pixel format

<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

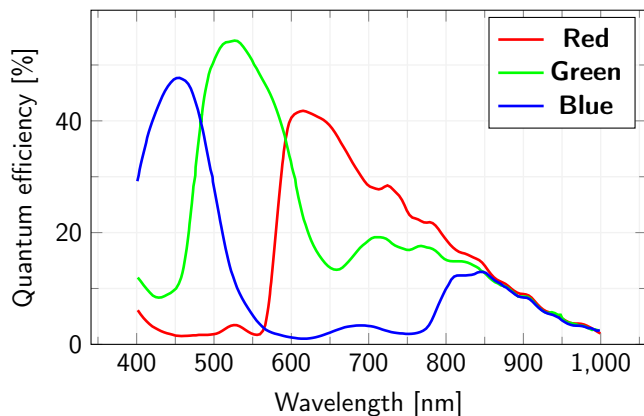
<sup>4</sup> Ambient temperature

### HIROSE PINOUT

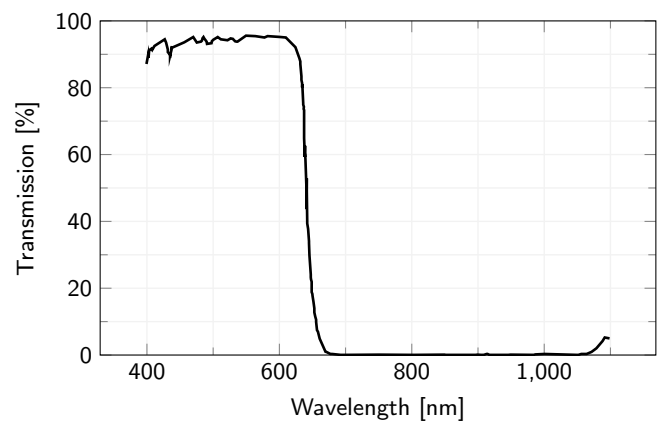


| Pin | Signal       |
|-----|--------------|
| 1   | GND          |
| 2   | +VIN         |
| 3   | Lens -       |
| 4   | Opto IN 0    |
| 5   | Lens +       |
| 6   | Opto OUT 0   |
| 7   | Opto REF GND |
| 8   | Lens SCL     |
| 9   | Lens SDA     |
| 10  | Opto REF V+  |
| 11  | Opto IN 1    |
|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