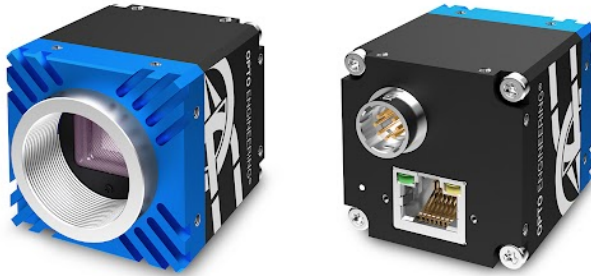




OPTO ENGINEERING

# 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.

### HIGH PROCESSING CAPABILITY

Large on-board image buffer, large FPGA.

### EXCELLENT QUALITY/PRICE RATIO

GEN*i*CAM

**GigE**  
VISION

1288  
EMVA Standard Compliant



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



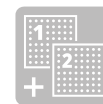
BURST



IMAGE COM-  
PRESSION



FAST  
TRIGGER  
MODE



DUAL  
EXPOSURE



SEQUENCER



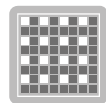
PRECISION  
TIME  
PROTOCOL



SCHEDULED  
ACTION  
COMMAND



REGION OF  
INTEREST



BINNING  
AND  
DECIMATION



CHUNK DATA



AUTO WHITE  
BALANCE



COLOR  
CORRECTION  
MATRIX



LIQUID LENS  
CONTROLLER



AUTOFOCUS



OPTO  
ISOLATED I/O



ENCODER



API C



API C++



API C#



API Python



WINDOWS



LINUX



ARM

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            | 5.1         |
| Resolution           | 2472 x 2064 |
| Sensor format        | 1/1.8"      |
| Sensor diagonal (mm) | 8.8         |
| Pixel size (μm)      | 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 or higher |
| 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)        | 39.6                                                                                                                  |
| Exposure time                 | 1.02 μs - 10 s                                                                                                        |
| ADC resolution (bit)          | 10/12                                                                                                                 |
| Dynamic range (dB)            | 69.5                                                                                                                  |
| Gain range (dB)               | 0-48                                                                                                                  |
| SNR (dB)                      | 39.7                                                                                                                  |
| Image buffer (MB)             | 384                                                                                                                   |
| Image processing              | Binning, decimation, ROI, gamma, black level, LUT, defective pixel correction, white balance, color correction matrix |
| Pixel formats                 | Mono 8, RGB8, Bayer GR 8/10p/10Packed/12p/12Packed, YUV 422_8, YUV411_8_UYVYUY                                        |
| 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                               | IP30                  |

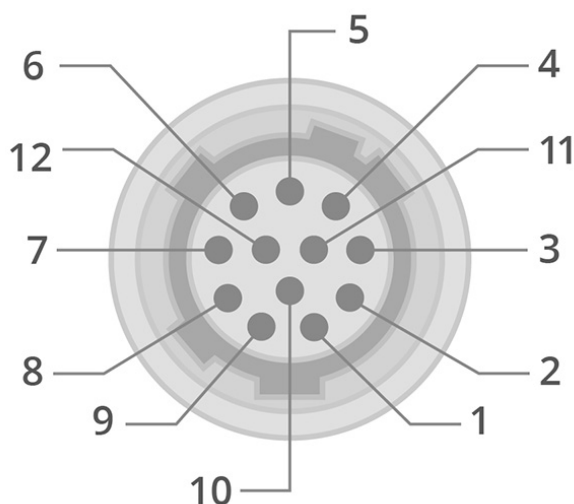
<sup>1</sup> Color-model's fps are calculated using BayerRG8 pixel format

<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

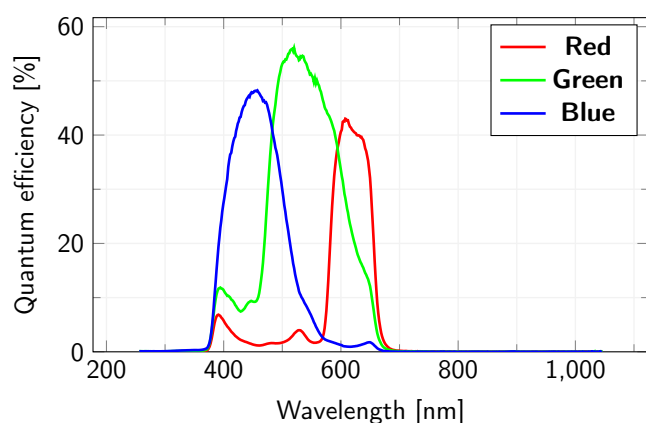
<sup>4</sup> Ambient temperature

## HIROSE PINOUT

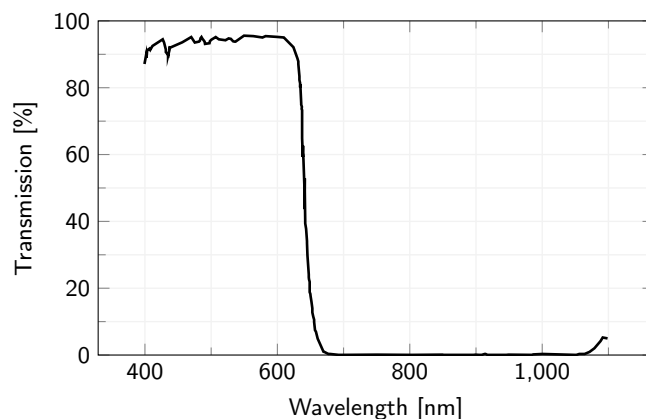


| Pin | Signal       |
|-----|--------------|
| 1   | GND          |
| 2   | +VIN         |
| 3   | Lens -       |
| 4   | Opto IN 0    |
| 5   | Lens +       |
| 6   | Opto OUT 0   |
| 7   | Opto REF GND |
| 8   | Lens SCL     |
| 9   | Lens SDA     |
| 10  | Opto REF V+  |
| 11  | Opto IN 1    |
|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

## SENSOR QUANTUM EFFICIENCY



## FILTERS TRANSMISSION



## RECOMMENDED ACCESSORIES

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

- **RT-A72-0418-05**, Ethernet cable, CAT6A, industrial level, high flexible cable with screw, 5 m
- **RT-A65-7105-05**, I/O cable, side 1 HIROSE 12 pin, side 2 cable end, 5 m
- **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.