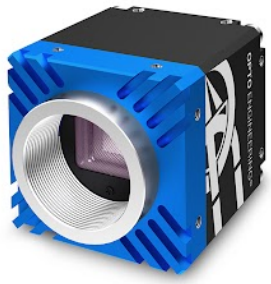
# ITA120-GC-10C-EL | DATASHEET

OPTO ENGINEERING

## Area scan camera 12.3MP, Sony IMX304, CMOS Global shutter, 1.1", 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**

**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 COMPRESSION
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

## SPECIFICATIONS

### Sensor Specification

| | | |
|---|---|---|
| Megapixel | | 12.3 |
| Resolution | | 4112 x 3008 |
| Sensor format | | 1.1" |
| Sensor diagonal | (mm) | 17.6 |
| Pixel size | (µm) | 3.45 |
| Sensor model | | IMX304 |
| 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) |
| Enconder interface | | yes, incremental |
| Power supply | (V) | 12-24, PoE (IEEE 802.3af class 2) |
| Max power consumption[2] | (W) | 5.6 |

### 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

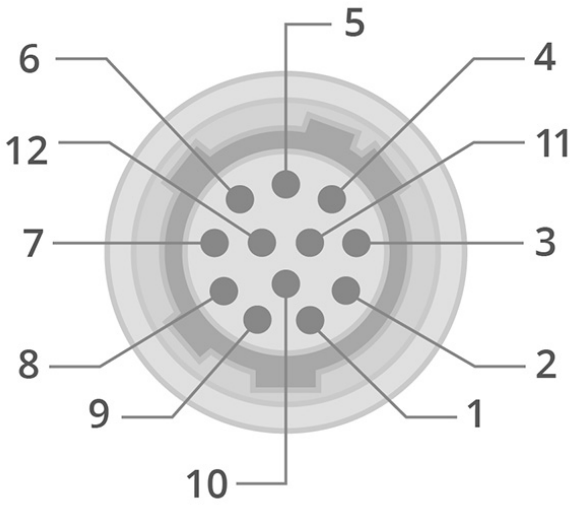
| | | |
|---|---|---|
| Filter | | IR cut |
| Frame rate[1] | (fps) | 9.5 |
| Frame rate burst | (fps) | 13 |
| Exposure time | | 1.51 µs - 10 s |
| ADC resolution | (bit) | 10/12 |
| Dynamic range | (dB) | 69.6 |
| Gain range | (dB) | 0-48 |
| SNR | (dB) | 40.0 |
| Image buffer | (MB) | 384 |
| Image processing | | Binning, decimation, ROI, gamma, black level, LUT, defective pixel correction, white balance, color corection matrix |
| Pixel formats | | Mono 8, RGB8, Bayer GR 8/10p/10Packed/12p/12Packed, YUV 422_8, YUV411_8_UYYVYY |
| Chunk data | | yes |
| User sets | | 3 |
| Timers/Counters | | 2/4 |
| Synchronization | | Free run, software trigger, hardware trigger, PTP (IEEE 1588) |

### Environment

| | | |
|---|---|---|
| Operating temperature[3] | (°C) | -25 - +65 |
| Storage temperature[4] | (°C) | -10 - +60 |
| Operating relative humidity | (%) | 20-80, non condensing |
| IP rating | | IP30 |

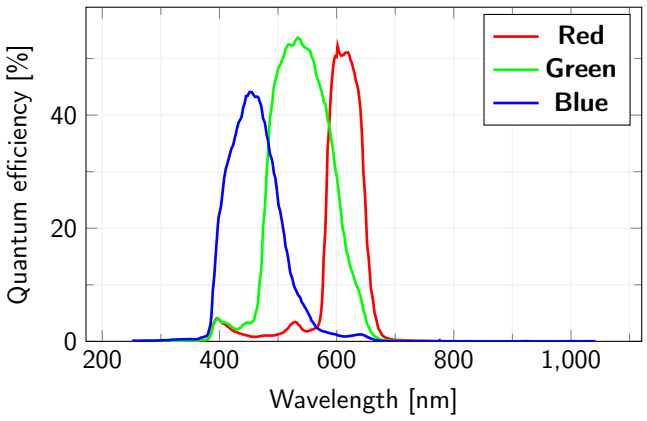
[1] Color-model's fps are calculated using BayerRG8 pixel format
[2] Measured with 24V power supply and liquid lens connected to the camera
[3] Case temperature, measured on the front part of the camera body
[4] Ambient temperature

## HIROSE PINOUT

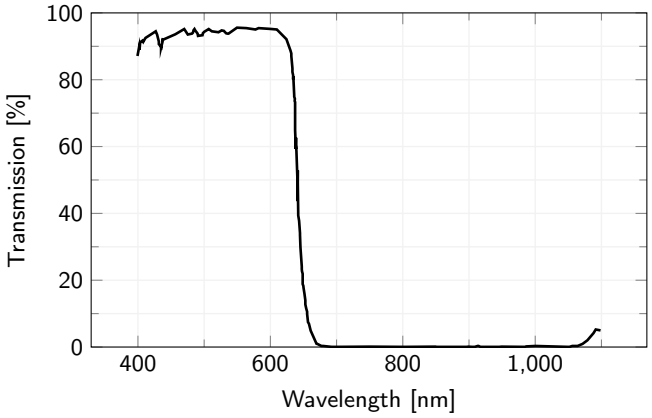



| Pin | Signal |
|---|---|
| **1** | GND |
| **2** | +VIN |
| **3** | Lens - |
| **4** | Opto IN 0 |
| **5** | Lens + |
| **6** | Opto OUT 0 |
| **7** | Opto REF GND |
| **8** | Lens SCL |
| **9** | Lens SDA |
| **10** | Opto REF V+ |
| **11** | Opto IN 1 |
| **12** | Lens +3.3V |

## 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.