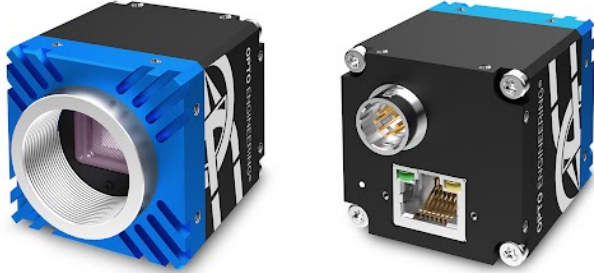




OPTO ENGINEERING

ITA204-GM-20C-EL | DATASHEET

Area scan camera 20.36MP, Sony IMX541, CMOS Global shutter, 1.1", Mono, 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®.

GEN*i*CAM

GigE
VISION

1288
EMVA Standard Compliant



KEY FEATURES



1 GIGE



12-24 VOLT



POWER OVER
ETHERNET



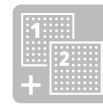
12-BIT DEPTH



BURST



FAST
TRIGGER
MODE



DUAL
EXPOSURE



SEQUENCER



PRECISION
TIME
PROTOCOL



SCHEDULED
ACTION
COMMAND



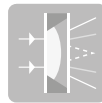
REGION OF
INTEREST



BINNING
AND
DECIMATION



CHUNK DATA



LIQUID LENS
CONTROLLER



OPTO
ISOLATED I/O



ENCODER



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 | | 20.36 |
| Resolution | | 4512 x 4512 |
| Sensor format | | 1.1" |
| Sensor diagonal | (mm) | 17.5 |
| Pixel size | (μm) | 2.74 |
| Sensor model | | IMX541 |
| 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 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 ² | (W) | 6.1 |

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 Ubuntu 18.04/20.04/22.04 |
| Shock and vibration | | EN 60068-2-27 EN 60068-2-6 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 | | AR glass |
| Frame rate ¹ | (fps) | 5.8 |
| Frame rate burst | (fps) | 10.8 |
| Exposure time | | 2.46 μs - 10 s |
| ADC resolution | (bit) | 10/12 |
| Dynamic range | (dB) | 69.7 |
| Gain range | (dB) | 0-48 |
| SNR | (dB) | 39.7017074032093 |
| 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 ³ | ($^{\circ}\text{C}$) | -25 - +65 |
| Storage temperature ⁴ | ($^{\circ}\text{C}$) | -10 - +60 |
| Operating relative humidity | (%) | 20-80, non condensing |
| IP rating | | IP30 |

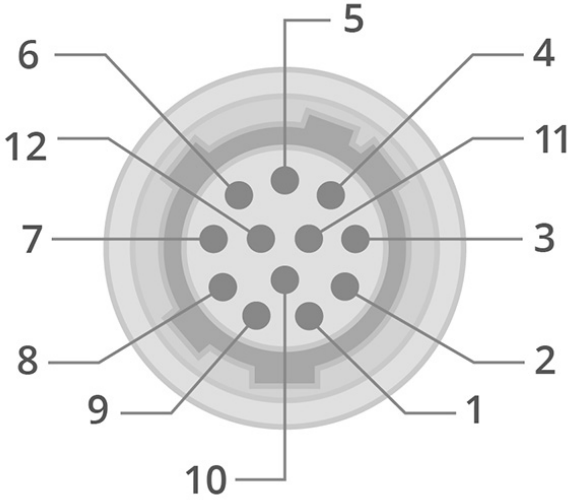
¹ Color-model's fps are calculated using BayerRG8 pixel format

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

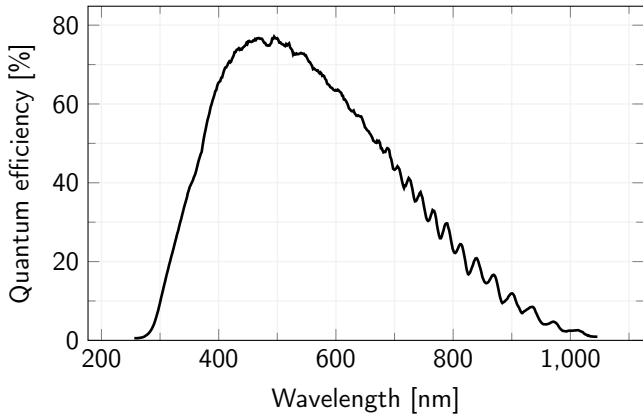
⁴ Ambient temperature

HIROSE PINOUT

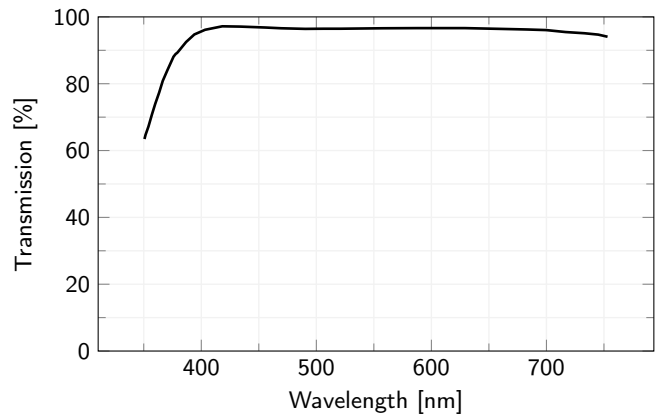


| Pin | Signal |
|-----|--------------|
| 1 | GND |
| 2 | +VIN |
| 3 | Lens - |
| 4 | Opto IN 0 |
| 5 | Lens + |
| 6 | Opto OUT 0 |
| 7 | Opto REF GND |
| 8 | Lens SCL |
| 9 | Lens SDA |
| 10 | Opto REF V+ |
| 11 | Opto IN 1 |
| 12 | Lens +3.3V |

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.

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