



# ITA204-GC-20C-EL | DATASHEET

Area scan camera 20.36MP, Sony IMX541, 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, 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



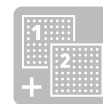
12-BIT DEPTH



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++



WINDOWS

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## SPECIFICATIONS

### Sensor Specification

Megapixel		20.36
Resolution		4512 x 4512
Sensor format		1.1"
Sensor diagonal	(mm)	17.5
Pixel size	( $\mu\text{m}$ )	2.74
Sensor model		IMX541
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 4x 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)	5.8

### 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
Shock and vibration <sup>3</sup>		n.a.
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)	1.9
Frame rate burst	(fps)	10.8
Exposure time		2.46 $\mu\text{s}$ - 10 s
ADC resolution	(bit)	10/12
Dynamic range	(dB)	70.0
Gain range	(dB)	0-48
SNR	(dB)	40.2
Image buffer	(MB)	384
Image processing		Binning, decimation, ROI, gamma, black level, LUT, defective pixel correction, white balance, color correction matrix
Pixel formats		Mono 8/10/12, RGB8, Bayer GR 8/10p/10Packed/12p/12Packed, YUV 422Packed
Chunk data		yes
User sets		3
Timers/Counters		2/4
Synchronization		Free run, software trigger, hardware trigger, PTP (IEEE 1588)

### Environment

Operating temperature <sup>4</sup>	( $^{\circ}\text{C}$ )	-25 - +65
Storage temperature <sup>5</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 RGB8 pixel format

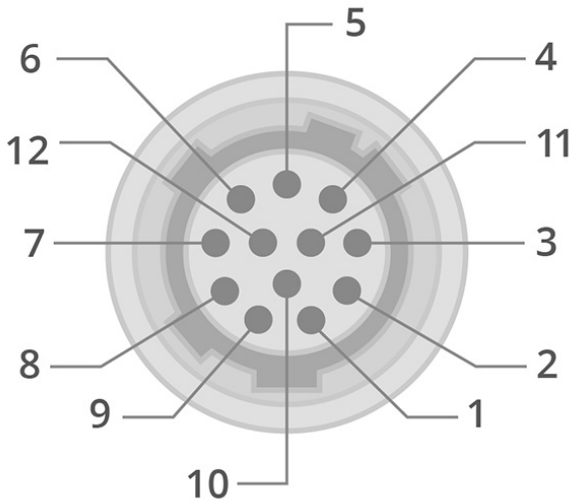
<sup>2</sup> Measured with 24V power supply and liquid lens connected to the camera

<sup>3</sup> To be measured after pre-series production

<sup>4</sup> Case temperature, measured on the front part of the camera body

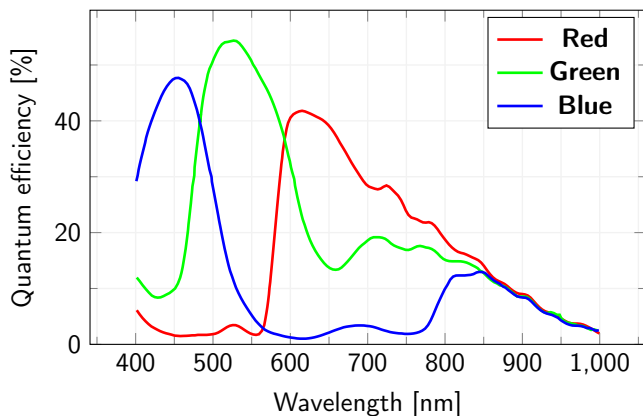
<sup>5</sup> Ambient temperature

**HIROSE PINOUT**

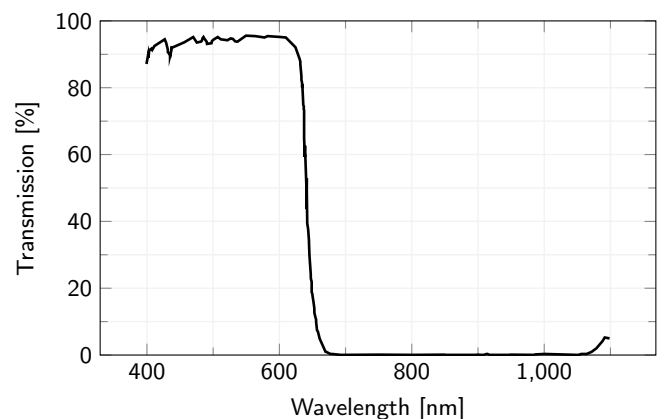


Pin	Signal
1	GND
2	+VIN
3	Lens -
4	Opto IN 0
5	Lens +
6	Opto OUT 0
7	Opto REF GND
8	Lens SCL
9	Lens SDA
10	Opto REF V+
11	Opto IN 1
12	Lens +3.3V

**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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