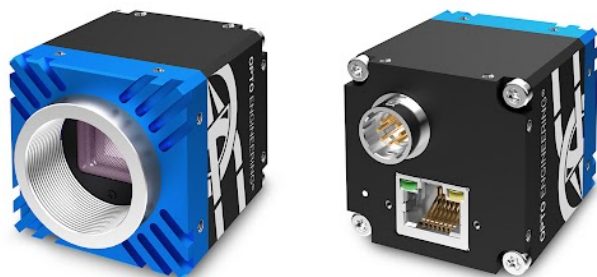




OPTO ENGINEERING

# 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



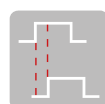
PRECISION  
TIME  
PROTOCOL



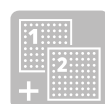
12-BIT DEPTH



BURST



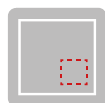
FAST  
TRIGGER  
MODE



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



API C++



WINDOWS



LINUX

## 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	Color

## 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 <sup>2</sup> (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	IR cut
Frame rate <sup>1</sup> (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)	39.8526977543304
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>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

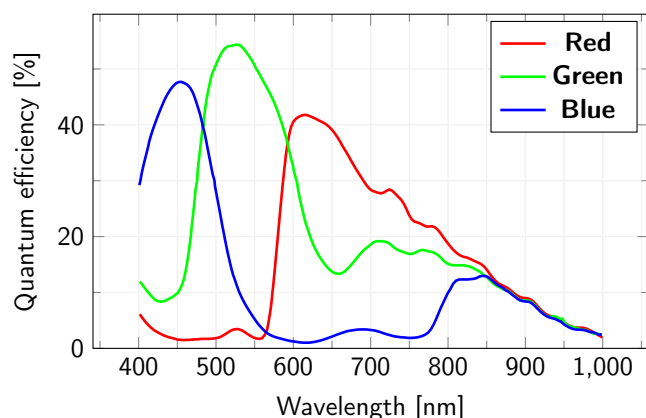
<sup>4</sup> Ambient temperature

## HIROSE PINOUT

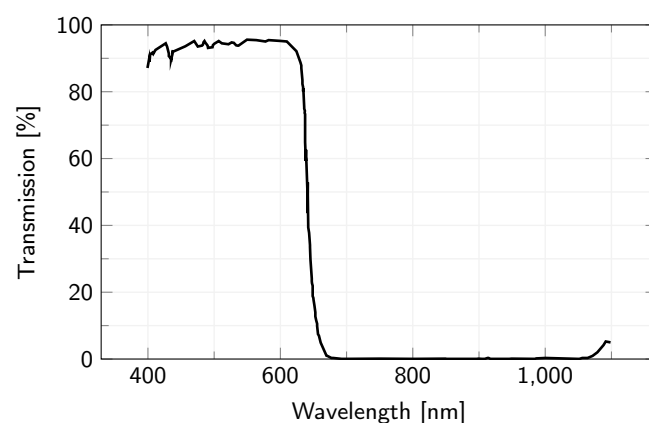


Pin	Signal
1	GND
2	+VIN
3	Lens -
4	Opto IN 0
5	Lens +
6	Opto OUT 0
7	Opto REF GND
8	Lens SCL
9	Lens SDA
10	Opto REF V+
11	Opto IN 1
12	Lens +3.3V

## SENSOR QUANTUM EFFICIENCY



## FILTERS TRANSMISSION



## RECOMMENDED ACCESSORIES

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

- **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
- **CBGPI012PY6P-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.