

# AVT Oscar F-810C

16-bit High SNR mode



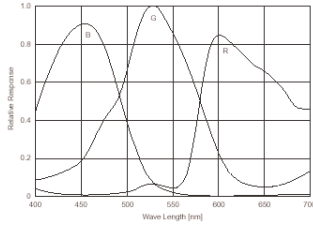
## Think big, when you get digital!

The AVT OSCAR F-320C, F-510C and F-810C (color) are very compact IEEE 1394 C-Mount multi-megapixel cameras, equipped with highly sensitive SONY frame readout CCD sensors. The camera offers an external asynchronous trigger shutter and operates in 12-bit mode. The AVT OSCAR family offers up to 8.13 megapixel and is thus particularly suited for use in microscopy and medical applications. A preview mode at high frame rate lets you easily position and expose the object of interest. Due to the industrial housing and additional frame grabber facilities, the camera can be perfectly used in several machine vision applications also with moving objects. The extensive built-in image processing possibilities (image pre-processing) result in outstanding image quality, reduced retouching, less load on the system and higher performance overall. The integrated smart functions take over essential functions of the frame grabber, which is compensated for use of the OSCAR. The OSCAR can be easily integrated into existing applications thanks to its powerful and flexible APIs (HALCON, DirectShow, Twain, libdc1394, etc.).

### Highlights OSCAR F-810C:

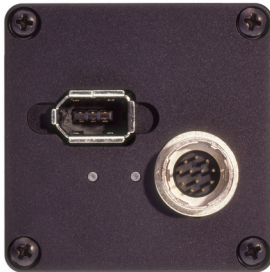
- 3272 x 2469 CCD frame readout shutter
- Up to 3.1 fps at full resolution
- True partial scan
- Format\_7 support (flexible AOI; flexible speed)
- Optocoupled asynchronous image trigger
- 16-bit High SNR mode (improves s/n ratio by up to factor 16 = 24 dB)
- Image pre-processing features:
  - Auto controlled gain, exposure, white balance
  - Color correction, hue, saturation
  - Real-time shading correction
  - Programmable LUT
  - And lots more ...
- Smart frame grabber features:
  - Image FIFO memory (up to 256 MB)
  - 1 trigger, multi-shot, free-run
  - 2 programmable inputs and outputs
- Color (Raw8, Raw16, RGB8, YUV 4:2:2, YUV 4:1:1, Mono8)
- Special mode for monochrome applications (Mono8)
- Super compact size
- C-Mount

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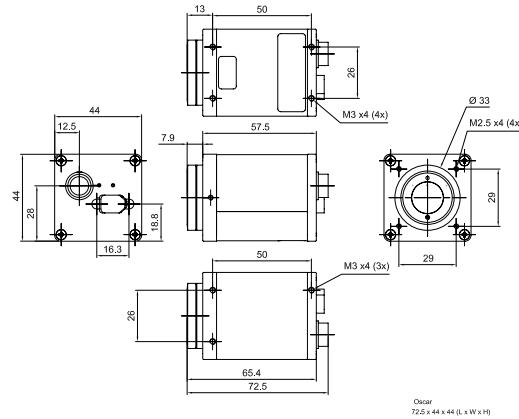
Sensor specifications (extracted from the data sheet of the sensor - excluding lens and filter)

Pin	Signal
1	External GND (RS232 and ext. power)
2	External Power (8...36 V DC)
3	
4	GP Input 1 (Default: Trigger)
5	
6	GP Output 1 (Default: IntEua)
7	GP Input GND
8	RxD (RS-232)
9	TxD (RS-232)
10	GP Output Power
11	GP Input 2 (TTL)
12	GP Output 2



Connections

Preview mode (by sub-sampling):	
548 x 410	15.0 fps
320 x 240	20.8 fps
AOI:	
3272 x 2469	3.1 fps
1600 x 1200	5.7 fps
1280 x 960	6.7 fps
800 x 600	9.2 fps
640 x 480	10.5 fps
320 x 240	14.5 fps



Dimensions

## Camera Specifications

Image device	Type 2/3 (diag. 11.07 mm) Sony CCD frame readout (ICX-456AQ)
Effective picture elements	3288 (H) x 2470 (V)
Cell size	2.7 µm x 2.7 µm
Resolution depth	12-bit / up to 16-bit in High SNR mode
Lens mount	C-Mount
Color modes	Mono8; Y8-green, Y8-red, Y8-blue; RAW8/16; RGB8; YUV 4:2:2; YUV 4:1:1
Digital interface	IEEE 1394a; IIDC V1.3
Transfer rate	100 Mbit/s, 200 Mbit/s, 400 Mbit/s
Frame rates	Up to 3.1 fps in Format_7, up to 8.9 fps in Format_7 progressive
Image memory (FIFO)	64 MB, optional up to 256 MB
Gain control	Manual, 0 ... 20 dB (0.035 db/step); auto gain (select. AOI)
Shutter speed	20 µs ... ~67 s; auto shutter (select AOI)
External trigger shutter	Trigger_Mode_0, Trigger_Mode_1 (prog. scan, F_7 M_0); advanced feature: Trigger_Mode_15 (bulk); image transfer by command; trigger delay
Smart features	Real-time shading correction, color correction, High SNR mode (image summation); two configurable inputs, two configurable outputs, image mirror (L-R<->R-L), sub-sampling, serial port IDC V1.31
Power requirements	DC 8 V ... 36 V via IEEE 1394 cable or 12-pin HIROSE
Power consumption	3.6 watt (@ 12 V DC)
Dimensions	72.5 mm x 44 mm x 44 mm (L x W x H); w/o tripod and lens
Mass	170 g (without lens)
Operating temperature	+5 ... +45 ° Celsius
Storage temperature	-10 ... +60 ° Celsius
Regulations	EN 55022, EN 61000, EN 55024, FCC Class B; DIN ISO 9022, RoHS (2002/95/EC)
Options	Removable IR cut filter, host adapter, locking IEEE 1394 cable, AVT FirePackage/Direct FirePackage/Fire4Linux