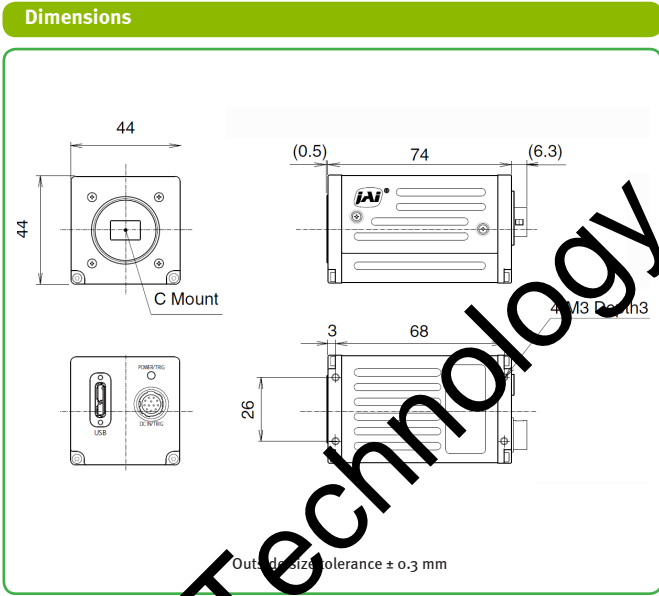




# Specifications for AP-3200T-USB-LS

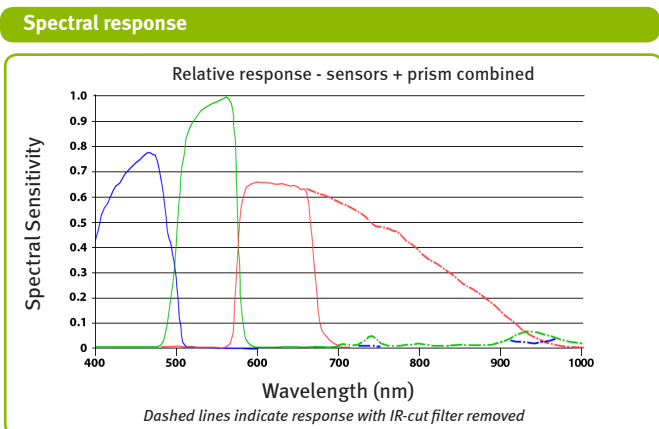
# Apex Series

| Specifications            | AP-3200T-USB-LS   |
|---------------------------|---|
| Sensor                    | 1/1.8" 3-CMOS global shutter (IMX265)   |
| Active pixels             | 2064 (h) x 1544 (v) x 3 (R,G,B)   |
| Frame rate, full frame    | 38.3 frames/sec. @ 8-bit  |
| Active area               | 7.12 mm (h) x 5.33 mm (v) - 8.89 mm diagonal  |
| Pixel size                | 3.45 μm x 3.45 μm   |
| System clock              | 74.25 MHz (for pulse generator)   |
| Read-out modes            | Full ROI (single) 2064 (h) x 1544 (v) up to 38.3 fps<br>H: 16 to 2064 pixels in 16 pixel steps<br>V: 2 to 1544 lines in 2 line steps<br>ROI (multi) Binning Up to 5 overlapping scanning areas can be defined.<br>1X2, 2X1, 2X2 |
| EMVA 1288 Parameters      | 12-bit output format  |
| Absolute sensitivity      | 3.77 p (λ = 525 nm)   |
| Maximum SNR               | 40.39 dB  |
| Traditional SNR*          | >60 dB (0 dB gain, 10-bit)  |
| Video signal output       | 8/10/12-bits per channel†<br>(24/30/36-bit RGB)   |
| Video modes               | Normal, Single ROI, Multi ROI, Sequencer  |
| Gain                      | Manual control - master mode or individual R/G/B channels<br>Auto gain control - off, continuous, one-push  |
| White balance             | Off, 4 presets (3200K, 5000K, 6500K, 7500K), or one-push/continuous AWB using gain or exposure time (3000K to 9000K)  |
| Gamma/LUT                 | 0.45 to 1.0 (9 steps) or 257-point programmable LUT   |
| Shading correction        | Flat shading, color shading   |
| Trigger input             | Opto In (2), Pulse Generators (4), Software NAND Out (2), User Output (4)   |
| Exposure modes            | Timed/EPS, Trigger Width, Auto  |
| Electronic shutter        | (can be set independently for R/G/B channels)<br>30.73 μs to 8 sec. in 1 μs steps (8-bit)<br>34.73 μs to 8 sec. in 1 μs steps (10-bit)  |
| Auto Level Control (ALC)  | Shutter range from 100 μs to 3.427 ms, gain range from 0 dB to +12 dB. Tracking speeds and max. values adjustable   |
| Pre-processing functions  | Color enhanced edge enhancer, color space conversion (RGB to YUV, XYZ, sRGB, Adobe RGB), blemish compensation (200 px/channel)  |
| Operating temp. (ambient) | -10°C to +45°C (20 to 80% non-condensing)   |
| Storage temp. (ambient)   | -20°C to +60°C (20 to 80% non-condensing)   |
| Vibration                 | 3G (20 Hz to 200 Hz) X, Y directions  |
| Shock                     | 500g  |
| Regulations               | CE (EN61000-6-2, EN61000-6-3)<br>FCC Part 15 Class B, RoHS/WEEE   |
| Power                     | +12V to +24V DC ± 10%. 5.3 W typical @ +12 V<br>Bus power: not supported  |
| Lens mount                | C-mount   |
| Dimensions (H x W x L)    | 44 mm x 44 mm x 74 mm (excl. connectors)  |
| Weight                    | 170 g   |



### Connector pin-out

| DC In / Trigger |                     | USB 3.0 Interface                     |   |
|-----------------|---------------------|---------------------------------------|---|
| 1               | Ground              | Micro B type - ZX3600-B-10P or equiv. |   |
| 2               | DC in +12V to +24V  | No.                                   | I/O Name Note                                   |
| 3               | Opto In 2-          | 1                                     | I VBUS IN Power (VBUS)                          |
| 4               | Opto In 2+          | 2                                     | I/O DM USB2.0 Differential pair (-)             |
| 5               | Opto In 1-          | 3                                     | I/O DP USB2.0 Differential pair (+)             |
| 6               | Opto In 1+          | 4                                     | OTG ID USB OTG ID for identifying lines         |
| 7               | Opto Out 1-         | 5                                     | GND GND   |
| 8               | Opto Out 1+         | 6                                     | O FX3 SSTXM USB3.0 Signal Transmission line (-) |
| 9               | TTL out 1           | 7                                     | O FX3 SSTXP USB3.0 Signal Transmission line (+) |
| 10              |                     | 8                                     | GND GND   |
| 11              | DC in +12V to +24 V | 9                                     | I FX3 SSRXP USB3.0 Signal Receiving line (-)    |
| 12              | Ground              | 10                                    | I FX3 SSRXM USB3.0 Signal Receiving line (+)    |



### Ordering Information

|                    |  |
|--------------------|--|
| AP-3200T-USB-LS    | 3-CMOS prism color camera with USB3 Vision |
| AP-3200T-USB-NF-LS | Same as above with IR-cut filter removed   |

\*Traditional SNR is based on random noise in a single frame, where EMVA SNR measurements consider more comprehensive noise sources and variance over time.

†12-bit output available in video processing bypass mode. See manual for details.

|   |   |  |
|---|---|--|
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