



- ▶ 1 Megapixel EMCCD
- ▶ 13µm Pixel Size
- ▶ 25 Frames Per Second
- ▶ 18.8mm Field of View
- ▶ 95% Quantum Efficiency

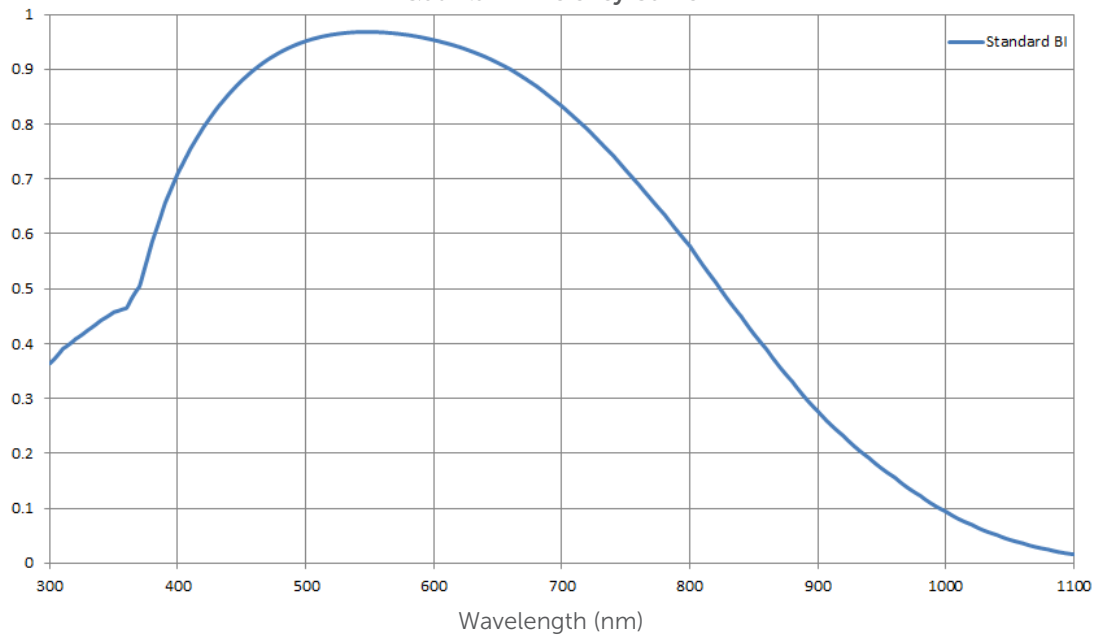
# evolve<sup>-</sup>®13

| Specifications       | Camera Performance                                         |
|----------------------|------------------------------------------------------------|
| Sensor               | Teledyne e2V CCD201 EMCCD Sensor                           |
| Active Array Size    | 1024 x 1024 (1 Megapixel)                                  |
| Pixel Area           | 13µm x 13µm (169µm²)                                       |
| Sensor Area          | 13.3mm x 13.3mm<br>18.8mm diagonal                         |
| Peak QE%             | 95%                                                        |
| Full-Well Capacity   | 80,000e- (Single Pixel)<br>500,000e- (EM Output Amplifier) |
| Bit-Depth            | 16-bit                                                     |
| Cooling Options      | Air Cooled<br>Liquid Cooled                                |
| Linearity            | >99%                                                       |
| Binning              | 2-32x Horizontal Binning<br>1-1024x Vertical Binning       |
| Vertical Shift Rate  | 700 nsec/row (Variable)                                    |
| Clock Induced Charge | 0.002e-/pixel/frame                                        |
| EM Gain Range        | 1-1000x linearized                                         |

| Camera Modes            |                                  |                               |
|-------------------------|----------------------------------|-------------------------------|
| Specifications          | Fast Mode (30MHz)                | Slow Mode (10MHz)             |
| Frame Rate (Full Frame) | 25 fps                           | 8 fps                         |
| Read Noise              | 130e-<br>0.26e- @ 500x EM Gain   | 40e-<br>0.26e- @ 150x EM Gain |
| Cooling                 | Cooling: -55°C @ 20°C Ambient    |                               |
| Dark Current            | Dark Current: 0.002e/p/s @ -55°C |                               |

| Specification     | Camera Interface                                                          |
|-------------------|---------------------------------------------------------------------------|
| Digital Interface | Gigabyte Ethernet (GigE)                                                  |
| Lens Interface    | C-Mount                                                                   |
| Mounting Points   | 2 x ¼"-20 mounting points per side                                        |
| Trigger Modes     | External Trigger, Bulb Mode, Single Trigger                               |
| Trigger Signals   | Exposure, Read Out, Trigger Ready, Trigger In                             |
| optiCAL           | On-camera EM Gain linear calibration                                      |
| Built in Shutter  | Acquire reference dark frames and protect sensor from dust                |
| Vacuum Guarantee  | Lifetime vacuum guarantee, built using all-metal, hermetic vacuum design. |

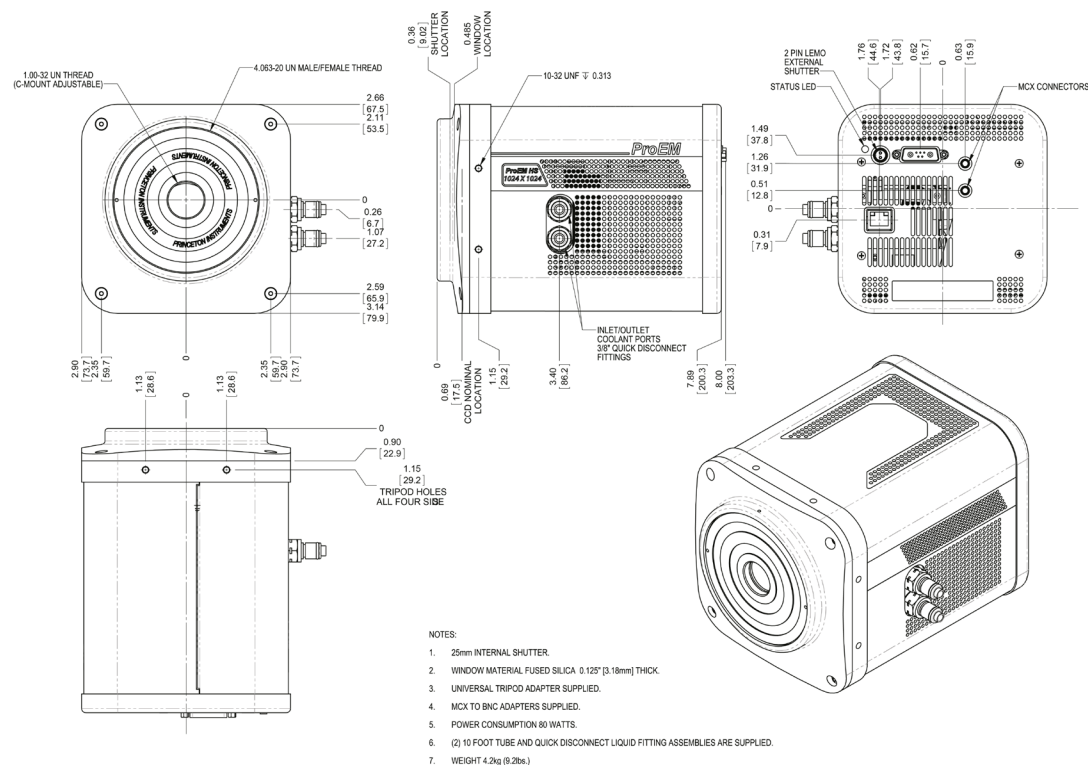
Quantum Efficiency Curve



Frame Rate - Standard Mode (fps)

| Binning | 1024 x 1024 | 512 x 512 | 256 x 256 | 128 x 128 | 64 x 64 | 1024 x 100 | 1024 x 32 | 1024 x 1 |
|---------|-------------|-----------|-----------|-----------|---------|------------|-----------|----------|
| 1 x 1   | 25          | 48        | 89        | 154       | 244     | 215        | 481       | 117      |
| 2 x 2   | 48          | 89        | 154       | 244       | 345     | 358        | 675       |          |
| 4 x 4   | 89          | 154       | 244       | 346       | 435     | 536        | 847       |          |

Frame rates are measured with 30 MHz ADC rate and 700 ns vertical shift rate



Specifications in this datasheet are subject to change. Refer to the Teledyne Photometrics website for most current specifications.



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