

Opgal EyeLite 640™



Camera Applications

Continuous Zoom Cooled Thermal Camera for High-End Defense Applications



Opgal's EyeLite is an advanced, continuous zoom thermal-imaging camera based on the company's groundbreaking cooled technology. Featuring a modular design, EyeLite provides flexible configurations for medium and long-range applications. EyeLite can be adapted to meet specific customer requirements, from a standalone sealed camera to an open-frame configuration. EyeLite is used in remote controlled weapon stations (RCWS) and can be integrated into gimbals, pan-tilt observation stations and other fixed or mobile platforms. It is equipped with a continuous zoom telescope to maintain line of sight with the target.

EyeLite is available in two configurations: EyeLite 640 f/4 and EyeLite 640 f/5.5.



Description / Performance

| | EyeLite 640 f/5.5 | EyeLite 640 f/5.5 x2.5 Extender | EyeLite 640 OFC f/5.5 |
|--|--|---|--|
| Sensor | | | |
| Focal Plane Array | InSb | | |
| Spectral Range | 3-5µm | | |
| Image Format | 640x480 (15µm) | | |
| Optics | | | |
| Telescope | Continuous Optical Zoom | | |
| Focal Length | 19 to 275mm | 48.5 to 700mm | 19 to 275mm |
| Horizontal Field of View (Fov) | 29.8° to 2.0° | 11.9° to 0.8° | 29.8° to 2.0° |
| F# | 5.5 | | |
| Image Processing | | | |
| Image Processing | 1) Image Enhancement (3 states) 2) Observation Reliability — NUC-Less | | |
| Image Features | | | |
| Digital Zoom | x1 to x12 in 0.1 magnification steps | | |
| Color Palettes | 7 Color Palettes | | |
| Video Output | | | |
| Analog Video Output | RS170, NTSC, CCIR, PAL | | |
| Digital Video Output | Camera Link (Raw Data, NUC+BPR, Processed), H264 (IP Video Streaming) | Camera Link (Raw Data, NUC+BPR, Processed), H264 (IP Video Streaming) | Camera Link (Raw Data, NUC+BPR, Processed) |
| Communication | | | |
| Communication | RS422, RS232, Pelco D, TCP/IP | RS422, RS232, Pelco D, TCP/IP | RS422, RS232, Pelco D |
| Power | | | |
| Operation Voltage | 28V nominal (18V-32V) | | |
| Power Consumption | < 18W nominal (<24W Max) | 24W (80W Max) | 24W (80W Max) |
| Thermal Sensitivity | | | |
| Noise Equivalent Temperature Difference (NETD) | < 20mK | | |
| Weight | | | |
| Weight | < 6.7Kg | < 8.1Kg | < 3.1Kg |
| Environmental Qualification | | | |
| Operation Temperatures | -40°C to +60°C | -40°C to +60°C | -30°C to +55°C |
| Window Defrost | N/A | N/A | N/A |
| Impermeability | N/A | N/A | N/A |
| Operational Shock | MIL-STD 810F Method 516.5 | MIL-STD 810F Method 516.5 | MIL-STD 810F Method 503.1 procedure I |
| Vibration | MIL-STD 810F Method 514.5 | MIL-STD 810F Method 514.5 | MIL-STD 810F Method 514.3 procedure I |
| Icing | MIL-STD 810F Method 521.2 | MIL-STD 810F Method 521.2 | N/A |
| Humidity | 95% MIL-STD 810F Method 507.4 | 95% MIL-STD 810F Method 507.4 | N/A |
| Dust | IP67 and MIL-STD Method 510.4 | IP67 and MIL-STD Method 510.4 | N/A |
| Maritime | MIL-STD 810F Method 509.4 | MIL-STD 810F Method 509.4 | N/A |
| Power Surges | MIL-STD 810F 1275(AT) | MIL-STD 810F 1275(AT) | MIL-STD 810F 1275(AT) |

Description / Performance

| | EyeLite 640 OFC f/5.5 x2.5 Extender | EyeLite 640 f/4 | EyeLite 640 f/4 x1.4 Extender |
|--|--|---|---|
| Sensor | | | |
| Focal Plane Array | InSb | | |
| Spectral Range | 3-5µm | | |
| Image Format | 640x480 (15µm) | | |
| Optics | | | |
| Telescope | Continuous Optical Zoom | | |
| Focal Length | 48.5 to 700mm | 15 to 300mm | 21 to 420mm |
| Horizontal Field of View (Fov) | 11.9° to 0.8° | 35.1° to 1.8° | 25.1° to 1.3° |
| F# | 5.5 | 4 | 4 |
| Image Processing | | | |
| Image Processing | 1) Image Enhancement (3 states) 2) Observation Reliability — NUC-Less | | |
| Image Features | | | |
| Digital Zoom | x1 to x12 in 0.1 magnification steps | | |
| Color Palettes | 7 Color Palettes | | |
| Video Output | | | |
| Analog Video Output | RS170, NTSC, CCIR, PAL | | |
| Digital Video Output | Camera Link (Raw Data, NUC+BPR, Processed) | Camera Link (Raw Data, NUC+BPR, Processed), H264 (IP Video Streaming) | Camera Link (Raw Data, NUC+BPR, Processed), H264 (IP Video Streaming) |
| Communication | | | |
| Communication | RS422, RS232, Pelco D | RS422, RS232, Pelco D, TCP/IP | RS422, RS232, Pelco D, TCP/IP |
| Power | | | |
| Operation Voltage | 28V nominal (18V-32V) | | |
| Power Consumption | < 18W nominal (<24W Max) | < 24W nominal (<80W Max) | < 24W nominal (<80W Max) |
| Thermal Sensitivity | | | |
| Noise Equivalent Temperature Difference (NETD) | < 20mK | | |
| Weight | | | |
| Weight | < 4.5Kg | < 7.2Kg | < 8Kg |
| Environmental Qualification | | | |
| Operation Temperatures | -30°C to +55°C | -40°C to +60°C | -20°C to +60°C |
| Window Defrost | N/A | N/A | N/A |
| Impermeability | N/A | N/A | N/A |
| Operational Shock | MIL-STD 810F Method 503.1 procedure I | MIL-STD 810F Method 516.5 | MIL-STD 810F Method 516.5 |
| Vibration | MIL-STD 810F Method 514.3 procedure I | MIL-STD 810F Method 514.5 | MIL-STD 810F Method 514.5 |
| Icing | N/A | MIL-STD 810F Method 521.2 | MIL-STD 810F Method 521.2 |
| Humidity | N/A | 95% MIL-STD 810F Method 507.4 | 95% MIL-STD 810F Method 507.4 |
| Dust | N/A | IP6X and MIL-STD Method 510.4 | IP6X and MIL-STD Method 510.4 |
| Maritime | N/A | MIL-STD 810F Method 509.4 | MIL-STD 810F Method 509.4 |
| Power Surges | MIL-STD 810F 1275(AT) | MIL-STD 810F 1275(AT) | MIL-STD 810F 1275(AT) |

EyeLite Specifications



Camera Applications

Key Features and Benefits

- Highly stabilized, rugged, compact and low-weight structure
- Powerful electronic continuous zoom with wide dynamic range
- Seven different color palettes
- Optical continuous zoom
- Open frame or sealed configuration for maritime conditions
- Digital video output: Camera link and H.264
- Analog video output: RS170, CCIR, PAL, NTSC
- 700mm focal length acquired with a 2.5x extender lens for long-range observation
- Controlled via communication protocol: RS232, RS422, TCP/IP, Pelco D
- User-friendly interface (GUI)

Applications

- Weapon sights and weapon stations
- Military and paramilitary surveillance
- Airborne, ground and naval applications

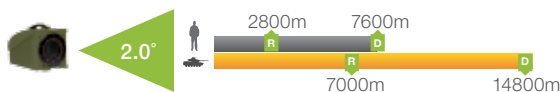
Range Performance

LEGEND

= human = recognition
 = vehicle = detection

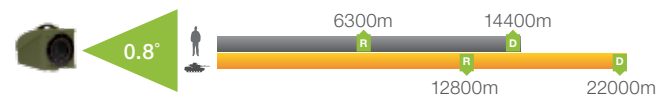
EyeLite 640 f/5.5

640x480 15μ



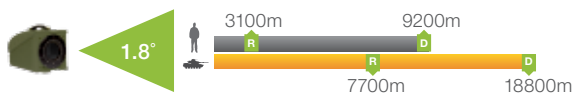
EyeLite 640 f/5.5 x2.5 Extender

640x480 15μ



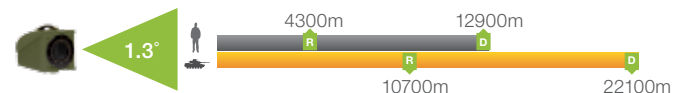
EyeLite 640 f/4

640x480 15μ



EyeLite 640 f/4 x1.4 Extender

640x480 15μ



Note: Distances are calculated based on geometrical values and do not take into account atmospheric conditions



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