

Orchid Series

LWIR Uncooled
Continuous Zoom Cameras

ORCHID Series

LWIR 15-100 / 24 – 105 / 25-150 / 25-225mm / 40 – 300mm
Ruggedized Continuous Zoom Uncooled Thermal camera

ORCHID Series: Advanced Long-Wave Thermal Imaging for Superior Surveillance

RP Optical Lab's ORCHID Series is a high-performance, continuous zoom uncooled thermal imager designed for demanding surveillance applications. Built for durability and precision, it features a high-resolution microbolometer with up to 1280x1024 pixels and multiple focal plane array pitch options, including 12µm and 17µm.

Operating in the 8-14µm spectral range, ORCHID delivers clear thermal imaging through smoke, aerosols, and other atmospheric obscurants, ensuring effective long-range detection. Its rugged, environmentally sealed enclosure—backfilled with dry nitrogen—provides long-term reliability without the need for additional housing.

With RS-232/422 & Ethernet remote control capabilities, ORCHID integrates seamlessly into security and surveillance systems, offering flexible operation and enhanced situational awareness.

RP Optical Lab is a trusted provider of cutting-edge infrared solutions, leveraging proprietary optical designs and state-of-the-art laboratories to ensure maximum performance and

dependability for homeland security applications.

System Main Features:

- **Motorized Focus & Zoom** – Precision control for optimised image clarity Continuous Zoom Lens Options – Available in: 15–100mm F/1.4, 24–105mm F/1.55, 25–150mm F/1.4, 25–225mm F/1.5, 40–300mm F/1.5
- **Auto & Manual Focus** – Flexible operation in dynamic environments
- **Internal Shutter or Optical NUC** – Ensures stable, high-quality thermal imaging
- **Remote Control Capability** – Easy integration with security and surveillance systems
- **Digital Output – Camera Link** – Fast, reliable data transmission
- **Dry Nitrogen Backfilled** – Protection against moisture and internal condensation
- **Ruggedised Construction** – Built to perform in harsh environmental conditions
- **Image Enhancement & Sharpening** – Advanced processing for superior image detail

Applications

- Fixed and Mobile Long-Range Surveillance
- Situational Awareness for Armoured Platforms
- Perimeter Security for Military Installations
- Target Detection and Observation Posts
- Thermal Sensing for Unmanned Ground and Aerial Systems
- Naval and Coastal Monitoring Systems
- Border Surveillance and Smuggling Detection
- Critical Infrastructure Protection (Airports, Power Stations, Ports)
- Fixed and Mobile Observation Units
- Perimeter Security for Sensitive Civilian Sites
- Thermal Monitoring in Emergency and Disaster Response Scenarios
- Surveillance Support for Law Enforcement and Counter-Terrorism Teams



System	ORCHID 18-60	ORCHID 24-90	ORCHID C100
Video Format	NTSC / PAL		
Communication Protocol	RS-422 Full Duplex		
Power Requirements	14 – 32VDC 1.0-3.0A Average nominal power		
Enironmental			
Operating / Storage Temp.	-32°C to +60°C / -40°C to +70°C		
Shock and Vibrations	Per applicable standard - Please consult RP		
Sealing	IP66 / IP67 available on request		
Controls	Fully Remote controlled		
Electronic Zoom	X2 / X4		
Focus control	Manual / Automatic		
Sensor			
Detector FPA	Up to 1280x1024 pixels 12 μm/17μm pitch		
Sensitivity	≤ 60mK - Please consult RP		
Optical			
Focal Length, F#	18 - 60 F/1.4	24 - 90 F/0.9	15 – 100 F/1.4
FOV (Degrees)			
Spectral Range	8 - 14μ		
Focus/Zoom Mechanism	Motorized, remotely controlled		
NUC	Available – by internal shutter remotely controlled		
Focus Range	10 m – infinity		
Total Weight	<8 Kg (Nominal)		
External Dimensions	Diameter 136 W x 136 H x 256mm L		
Mount / Mechanical Interface	Please refer to MICD (Customized interfacing, available on request)		
Ordering Information			

Target size: human 1.8m x 0.5m and nato 2.3m x 2.3m / range performance are approximately calculated for reference only.



ORCHID C105

ORCHID C150

ORCHID C225

ORCHID C300

NTSC / PAL

RS-422 Full Duplex

14 – 32VDC 1.0-3.0A Average nominal power

-32°C to +60°C / -40°C to +70°C

Per applicable standard - Please consult RP

IP66 / IP67 available on request

Fully Remote controlled

X2 / X4

Manual / Automatic

Up to 1280x1024 pixels 12 μm/17μm pitch

≤ 60mK - Please consult RP

24 – 105 F/1.55

25 – 150 F/1.4

25– 225 F/1.5

40 - 300 F/1.5

8 - 14μ

Motorized, remotely controlled

Available – by internal shutter remotely controlled

10 m – infinity

20 m – infinity

30 m – infinity

4 Kg (Nominal)

6.5 Kg (Nominal)

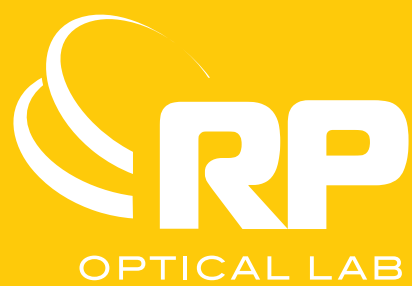
9.5 Kg (Nominal)

Diameter 136 W x 136 H x 256mm L

Diameter 218 x 320mm L

Diameter 238 x 395mm L

Please refer to MICD (Customized interfacing, available on request)



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