The Ranger MS-LRTI™ deterrence system builds on the impressive capabilities of the Ranger MS-UC DefendIR™. Equipped with a day/low-light CCD camera and cooled InSb thermal imager, the Ranger MS-LRTI adds a high-power spotlight to detect, deter, and temporarily disorient intruders. The 12 million candlepower spotlight can illuminate trespassers within a one-mile radius. With continuous thermal optical zoom, the Ranger MS-LRTI meets the requirements for any mission, from wide-area surveillance to long-range threat identification.

A pan-tilt design capable of 360° continuous panning, -72° to 66° tilt, and ruggedized to withstand temperatures from -15°C to 60°C, LRTI is easy to integrate out of the box. Tap into existing fiber, wireless, or IP networks, or interface with VMD, radar, UGS, or other trigger sensors for a slew-to-cue solution. Multiple lens options are available to customize field of view and detection range. LRTI provides 24/7 perimeter security and surveillance in virtually any environment.

**Features**

**Maximize Threat Detection and Assessment**
Overlay visible camera video onto 640x512 cooled thermal imagery with continuous 2° to 30° FOV optical zoom in real time.

Non-lethal Deterrence
The illuminator’s 12-MCP spotlight temporarily disorients intruders and alerts unwanted traffic to steer clear of restricted areas.

PTZ in a Ruggedized Housing
With continuous zoom, tilt, and 360° pan—and sealed to MIL-STD-810, NEMA 4, and IP66 specifications—LRTI is ready for covert or non-covert deployment.

Covert Surveillance
An 850-nm spotlight filter provides visibility through windows without alerting threat that they are under surveillance.

Turnkey Integration
Connect to existing fiber, wireless, or IP networks and with VMD, radar, UGS, or other trigger sensors for powerful “slew-to-cue.”

**Applications**

**Force Protection**

**Border Surveillance**

**Tactical Reconnaissance**

**Training Range Applications**

**Fixed and Mobile Security**

**Target Tracking**

**Long Range Surveillance**
## SPECIFICATIONS

### RANGER® MS-LRTI

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video Output</td>
<td>RS-170 (NTSC) or CCIR (PAL)</td>
</tr>
<tr>
<td>Serial Interface</td>
<td>RS-422 and 10/100 Ethernet</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-15° to +60° C</td>
</tr>
<tr>
<td>Environmentally Sealed</td>
<td>MIL-STD-810, NEMA 4 &amp; IP66</td>
</tr>
<tr>
<td>Pan &amp; Tilt Slew Rate</td>
<td>0.1 to 30°/sec controlled</td>
</tr>
<tr>
<td>Elevation Control</td>
<td>+66° to -72°</td>
</tr>
<tr>
<td>Azimuth Control</td>
<td>Continuous 360°</td>
</tr>
<tr>
<td>Pointing Accuracy &amp; Repeatability</td>
<td>Pan ± 0.25°, Tilt ± 0.1°</td>
</tr>
<tr>
<td>Power Input</td>
<td>24 VDC ± 20%</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>Spotlight off: 22W Nominal (25W with Heaters) / 45W Maximum Spotlight on: 140W Nominal / 240W Maximum</td>
</tr>
<tr>
<td>Weight</td>
<td>33 lbs (15kg)</td>
</tr>
</tbody>
</table>

### Thermal Camera

- Detector: Cooled 640x512 InSb 15 µm
- Frame Rate: 30 Hz
- Resolution: 640 x 512
- Spectral Response: MWIR (3-5µm)
- IR Lens: 19-275mm, 2 to 30 degree field of view with continuous optical zoom
- IR Digital Zoom: Continuous 1x to 4x
- Focus: Motorized Remote focus
- Gain / Level Controls: Automatic or manual

### CCD Camera

- CCD Lens: 3.5mm (Wide FOV 42°), 91mm (Narrow FOV 1.6°)
- Image Stabilization: Optional
- Zoom: Optical: 26x, Digital: 12x, Total: 312x
- Minimum Illumination: 2.0 lux at 1/60 sec (NTSC), 0.14 lux at 1/4 sec (NTSC)
- Starlight Mode: 0.7 lux at 1/60 sec (NTSC), 0.05 lux at 1/4 sec (NTSC)

### Spotlight

- Beam Width: Adjustable, 1° to 40°, By commands or Slaved
- Light Output: 12 MCP (Million Candle Power)
- Illumination Range: 1 lux on target at up to 1.5 miles (2.4 km), 850nm filter option

### AMERICAS

- FLIR Systems, Inc. Corporate Headquarters
  27700 SW Parkway Ave
  Wilsonville OR 97070
  Phone: +1 877.773.3547
- FLIR Systems, Inc.
  DC Headquarters
  1201 S. Joyce Street
  Suite C006
  Arlington, VA 22202
  Phone: +1 703.682.3400

### EUROPE

- FLIR Systems
  2 Kings Hill Avenue - Kings Hill
  West Malling, Kent ME19 4AQ
  United Kingdom
  Phone: +44 (0)1732 220 011
  Fax: +44 (0)1732 843 707
- FLIR Systems AB
  Antennvägen 6,
  PO Box 737
  SE-187 66 Täby
  Sweden
  Phone: +46 (0)8 753 25 00

### MIDDLE EAST

- FLIR Systems B.V. - Abu Dhabi
  Wadi Al Fey St.
  Building 60, Office # 302
  New Ministries Exit / Khalifa Park Area
  Abu Dhabi, U.A.E.
  Phone: +971 2 666 1561
  e-Fax: +1 503 914 1591
- FLIR Systems Saudi Arabia
  Office 127, First Floor
  Akaria Plaza Building, Olaya Street
  Riyadh, 11481, Saudi Arabia
  Phone: +966 11 464 5323
  Fax: +966 11 464 0438

### ASIA

- FLIR Systems Japan K.K.
  Meguro Tokyo Bldg. 5F
  2-13-17 Kami-Osaki, Shinagawa-ku.
  Tokyo, 141-0021, Japan
  Phone: +81-3-6721-6648

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