**TPN Upgrade Kit**

**PERISCOPE THERMAL IMAGING UPGRADE KIT**

Opgal's TPN Upgrade Kit is an advanced thermal imaging modernization solution for the gunner periscope night vision channel. The kit comes with an advanced uncooled thermal imaging core, a long-range aperture lens, an electronic control panel, and a new high-resolution OLED based eyepiece. Specially designed for enhanced gunner performance, the thermal channel provides improved capabilities for extreme weather and impaired visual conditions such as fog, rain, and snow. Opgal's TPN Upgrade Kit replaces old elements with electro-optical (EO) components, providing major improvements for the identification and acquisition of targets, while preserving the same user interface and basic functionalities of the original TPN periscope.

**KEY BENEFITS**

**KEY FEATURES**
- 24/7 Thermal Imaging
- Long Range Thermal Channel
- Electro-Optical Components for Periscope Upgrade
- Self and Simple Installation
- ITAR Free

**ADVANTAGES**
- All Weather Visibility
- Increased Visual Range
- Manual Focus
- Military Grade STD
- Fits T55's, T64's T72's, T80's Tanks and More
- Variety of Easily Customizable Options

**KIT COMPONENTS**
- 640 x 480 17μ IR Core
- Upgraded Periscope (Germanium Mirror)
- 100mm Aperture Lens
- OLED Based Eyepiece
- Electronic Control Panel
- Electronics Card
- Internal Main Harness

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Opgal's TPN Upgrade Kit is a ready-to-install thermal imaging sight kit with a variety of easily customizable options. Using the existing infrastructure, it can be easily integrated with a range of armored vehicles, keeping the integration work local for in-house upgrades.

### Features

<table>
<thead>
<tr>
<th>Features</th>
<th>Description/Performance</th>
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</thead>
<tbody>
<tr>
<td>Thermal Resolution</td>
<td>640 x 480</td>
</tr>
<tr>
<td>Pixel Size</td>
<td>17µ</td>
</tr>
<tr>
<td>NETD</td>
<td>&lt; 35mK</td>
</tr>
<tr>
<td>FPA Material</td>
<td>VOx</td>
</tr>
<tr>
<td>Lens Aperture</td>
<td>100mm</td>
</tr>
<tr>
<td>FOV</td>
<td>HFOV 2.7°, VFOV 2.0°</td>
</tr>
<tr>
<td>NATO Target D / R / I</td>
<td>7.3km / 3.7km / 2.2km</td>
</tr>
<tr>
<td>Time to Image</td>
<td>&lt; 8 secs</td>
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<tr>
<td>Video Output</td>
<td>PAL/NTSC Analog Output</td>
</tr>
<tr>
<td>Digital Zoom (steps of 0.1)</td>
<td>x1 to x12</td>
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<tr>
<td>Operating Voltage</td>
<td>24-28VDC MIL-STD 1275</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>&lt; 2W</td>
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<tr>
<td>Environmental</td>
<td>MIL-STD-810</td>
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<tr>
<td>Dimensions (H / W / L)</td>
<td>47cm / 25cm / 25cm</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40° to +65°</td>
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<tr>
<td>Weight</td>
<td>15.5kg</td>
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</tbody>
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