Mentor Visual iQ

Put the power of productivity in your hands.

Introducing the portable, connected VideoProbe™ from GE with 3D phase measurement.
The most precise detection. Faster.

Today’s aerospace, power generation, and oil and gas industries depend on precise critical inspections to keep aircraft flying, power plants online, refineries running and wells producing. Visual inspections can detect indications that help asset owners make better decisions about planned downtime and repairs, resulting in improved performance and reduced chances of serious equipment failures.

At GE, we understand the value of uptime and provide experts with a better video borescope choice—the Mentor Visual iQ VideoProbe™. With state-of-the-art 3D phase measurement and analysis, it accurately detects visual indications such as corrosion, blockages and cracking. Its superior image quality and faster, more precise detection is forever changing the inspection landscape.
Connect in real time, get inspections done in no time. When expert advice or a second opinion is needed during an inspection, you need to collaborate instantly. Today's Mentor Visual iQ is built for real time collaboration, with Bluetooth keyboard and headset, and Wi-Fi connectivity that allow inspectors of all levels to work together on the fly. And soon, inspectors will have the capability to share screens, share images, gather opinions and even make notes in real time with Inspection Connect. This can be a lifesaver when confined spaces or difficult inspecting conditions make access a challenge, or when collaborating across continents or over oceans. With expert advice on hand, the Mentor Visual iQ reduces downtime so you have more uptime.

**Expertise In Hand**

**Intuitive innovation.** Mentor Visual iQ's interface makes sense right out of the box. Menu Directed Inspection (MDI) guides users through the inspection process and organizes results for simplified reporting. The easy-to-use touchscreen interface, on-screen keyboard and ergonomic buttons reduce inspection time. Create and customize profile setups for multiple users or applications, and access on-device manuals and context-based inspection support files. And with advanced file management, it's easier to store, organize and report large volumes of inspection data.
Innovative Design

Performance meets portability. Mentor Visual iQ combines the portability you want with the powerful processing you need. On-demand 3D phase measurement helps you make better asset decisions. Meet a variety of inspection needs with interchangeable probes and tip optics, as well as custom profiles. The touchscreen interface enables faster navigation, precise cursor placement, and on-screen typing and annotation to speed up inspections. Designed and tested to recognized civilian and military standards (IP67, MIL-STD-810G and MIL-STD-461F), the device is dependable in the field. And at just 6.75lbs with a lithium-ion battery, the aircraft compliant Mentor Visual iQ stores in overhead compartments for easy mobility.

The power of connectivity
Bluetooth and Wi-Fi enabled for easy collaboration

Crisp image quality
High-intensity light source and advanced image processing for clearer, sharper video and still image quality

Flexible solutions
Interchangeable probes and tip optics to meet the toughest inspection challenges

Advanced detection & analysis
Innovative 3D phase measurement and cutting-edge MDI data management
Collaboration

Connect in real time, get inspections done in no time. When expert advice or a second opinion is called for during an inspection, you need answers fast. That’s why Mentor Visual iQ is built for real-time collaboration. With Wi-Fi enabled Bluetooth keyboard and headset, inspectors of all levels can work together instantly. Inspectors will be able to share screens and images, gather opinions and even make notes in real time with Inspection Connect—no matter the environment or distance between them.

Greater mobility
Portable, ergonomic 6.75 lb design with aircraft compliant lithium-ion battery

Easy to use
Intuitive touchscreen interface and individual user profiles, with context-based inspection support preloaded on the device

Rugged durability
Designed to IP67, MIL-STD-810G and MIL-STD-461F standards to withstand the toughest inspection environments
Reducing downtime for more uptime.

Aerospace
- Extreme image quality and lighting enhances Probability of Detection (PoD) in all turbine stages
- 3D phase measurement surface scanning and analysis for fast and accurate Go/No-Go’s
- Menu Directed Inspection (MDI) stores AMM workflows, catalogs images, and generates reports on demand
- Share inspection analysis easily with remote experts to significantly reduce AOG and inspection time
- Create user-defined profile setups based on specific inspector preferences, airframe or power plant type
- Lightweight, ergonomic IP67, MIL-STD-810G and MIL-STD-461F design improves the shop and flightline inspection process
Oil & Gas

- Designed to IP67 specifications with durability to stand up to the toughest field conditions on a rig, column or turbine unit
- Superior image quality and illumination to inspect large areas such as tanks, headers, vessels and meter tubes
- Interchangeable probes with multiple lengths and diameters allow for FFP/BOP inspections of a variety of assets
- 3D phase measurement surface scanning and analysis helps determine accurate indication depth and size
- Remote collaboration for inspection advice in confined spaces or remote areas
- Streamlined service means more uptime when it counts
Power Generation

- Handheld portability makes inspections in difficult access areas faster and easier
- Menu Directed Inspection (MDI) enables faster, more accurate compilation of inspection data and reports
- User-defined profile setups accommodate specific inspector preferences, or inspections by plant type
- IP67-designed durability for rugged inspection conditions
- Crisp image quality improves Probability of Detection (PoD) of FAC, pitting, cracking, wear and tip rub
- Touchscreen interface and 3D phase measurement allow for faster, more precise inspection analysis
General Inspection

- Faster, more accurate inspections for pumps, motors, generators, pulp and paper rollers, gear boxes, pipes, tubes, purity pipes, turbines, compressors, large pistons, chillers, valves, gun barrels, mortar tubes, Homeland Security, and maritime surveying
- IP67, MIL-STD-810G and MIL-STD-461F designed for durability in any work environment
- Interchangeable probes with multiple lengths and diameters allow for more inspection areas with a single system
- Touchscreen interface for intuitive operation, with extreme image quality for enhanced Probability of Detection (PoD)
- Menu Directed Inspection (MDI) holds RVI workflows, catalogs the inspection images and generates reports on demand
- Remote collaboration for inspection advice in confined spaces or remote areas
Streamlined Service

Downtime is costly, and when it strikes you need instant access to the repair experts who will get your asset up and running again. Our streamlined repair service allows for fast diagnosis and expedited repair so that the Mentor Visual iQ is back where you need it—in your hands.

Another Example of How GE Works

The Mentor Visual iQ from GE combines intelligent machines, data and people to deliver more productivity. This industry-changing video borescope provides the portability, powerful features and collaboration needed for faster, more accurate decisions. Internet connectivity will allow you to connect remotely and share images and data on the job site or around the world.

Contact your sales representative for a demo.

gemcs.com
Mentor Visual iQ™ VideoProbe™

Put the power of productivity in your hands

For industries that depend on critical visual inspections, the experts now have a better choice

Introducing the portable, connected VideoProbe from GE with 3D phase measurement
Mentor Visual iQ, the world’s most advanced video borescope, is packed with features to help you make better decisions about critical assets and improve inspection productivity.

- Easy to operate using either optically bonded multipoint touchscreen and on-screen keyboard, or ergonomic joystick and hard keys
- Color SUPER HAD™ CCD video camera with 5x digital zoom and a new ground-up image processing system
- View crisp images and increase probability of detection on a 6.5” (16.5 cm) active matrix XGA color LCD, daylight readable display
- Capture crystal clear live video and still images with Adaptive Noise Reduction (ANR) and High Dynamic Range (HDR) still image capture
- Advanced analysis using improved 3D Phase Measurement (6.1mm diameter probe) or stereo (6.1mm or 4mm diameter probes)
- Portable, lightweight, ergonomic design (6.75 pounds (3.0 KG) out of case)
- Rugged durability – designed to IP67, IP55, MIL STD 461F and MIL STD 810G standards
- Dual-Band Wi-Fi and Bluetooth 4.0 enabled
- Menu Directed Inspection (MDI) software in 14 languages digitally guides inspectors through the inspection process, intelligently names files and creates MS Word® and PDF compatible inspection reports
- Master advanced features faster and eliminate cumbersome paper manuals with on-device user manuals and context based help links
- 16 GB Internal SSD for user data storage
- Two USB 3.0 host ‘A’ ports, one USB 3.0 client micro ‘B’ port
- Powered by high-capacity interchangeable, rechargeable lithium ion batteries which are compliant with air travel regulations. With the charging circuit built into the batteries, no charging cradle is required
- Interchangeable high resolution 4.0mm and 6.1mm diameter probes available in multiple lengths to suit a variety of industries and applications
- Full tip optic interchangeability with secure double threads
- High intensity LED light source and advanced processing for improved image brightness
- Insertion tube markings for easy setup and reference
- Choose from a variety of customizable “Magic-arm” handset mounts in several sizes
- Your choice of ultraportable rolling carry-on case or roomier work station model configured to hold multiple probes and accessories
## Technical Specifications - Handset

### Operating Temperature
- **Tip**: -25°C to 100°C (-13°F to 212°F). Reduced articulation below 0°C (32°F)
- **System**: -20°C to 66°C (-4°F to 115°F). LCD may require warm-up period below 0°C (32°F)
- **Storage Temperature**: -25°C to 60°C (-13°F to 140°F)
- **Relative Humidity**: 95% max, non-condensing
- **Waterproof**: Insertion tube and tip to 14.7 psi (1 bar, 10.2 m of H2O, 33.5 ft of H2O)
- **Hazardous Environments**: Not rated for use in hazardous environments

### Camera
- **Diameter Probe**: 4.0 mm (0.16"), 6.1 mm (0.24")
- **Image Sensor**: 1/6" Color SUPER HAD™ CCD camera (6.1) 1/10" (4.0 mm)
- **Pixel Count**: 440,000 pixels
- **Housing**: Titanium

### System
- **System Dimensions**: 17.1 x 33.8 x 87.1 cm (6.75 x 8 x 15")
- **Case Dimensions (Standard)**: 48.8 x 38.6 x 18.5 cm (19.2 x 15.2 x 7.3")
- **System Weight**: In small case with contents: 10.2 kg (22.4 lbs). In large case with contents: 19.6 kg (43.2 lbs)
- **Out of Case**: 6120 system - 3.0 kg (6.7 lbs). 6110 system - 4.0 kg (8.7 lbs)
- **Construction**: Magnesium and Polycarbonate housing with integrated elastomeric bumpers
- **LCD Monitor**: Integrated (6.5") active matrix XGA color LCD, daylight readable display, with optically bonded, multipoint capacitive Dragontrail™ touchscreen
- **Joystick Control**: 360º All-Way® tip articulation, menu access, and navigation
- **Button Set**: Access user functions, measurement, and digital functions
- **Audio**: Integrated 3.5mm headset / microphone jack or bluetooth headset
- **Internal Memory**: 16 GB SSD for user storage
- **Data I/O Ports**: Two USB 3.0 host 'A' ports, one USB 3.0 client micro 'B' port
- **Video Out**: DisplayPort
- **Brightness Control**: Auto and Variable
- **Illumination Type**: White LED
- **Long Exposure**: Auto - up to 16 seconds
- **White Balance**: Factory default or user defined

### Power
- **Lithium Ion Battery**: 10.8V (nominal), 73Wh, 6.8Ah

### Power Supply
- **AC**: 100-240VAC, 50-60Hz, <1.5A RMS
- **DC**: 18V, 3.34A

### Standards Compliance and Classifications
- **MIL-STD-810G**: United States Department of Defense Environment Tests Sections 506.5, 507.5, 510.5, 511.5, 514.6, 516.6, 521.3
- **Standards Compliance**: Group 1, Class A: EN61326-1, UL, IEC, EN CSA-C22.2:61010-1, UN/DOT T1-T8
- **IP Rating**: IP55 (Disassembled), IP67 (Assembled)
Appendices

Technical Specifications - Probes and Tips

Probe Measurements

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0 mm (0.15&quot;)</td>
<td>2.0, 3.0 m (6.6, 9.8 ft.)</td>
</tr>
<tr>
<td>6.1 mm (0.24&quot;)</td>
<td>2.0, 3.0, 4.5, 6.0, 10.0 m (6.6, 9.8, 14.8, 19.7, 32.8 ft.)</td>
</tr>
</tbody>
</table>

Longer lengths up to 30 m are available. Contact your sales representative for details.

Tip Articulation

<table>
<thead>
<tr>
<th>Insertion Tube Length</th>
<th>Articulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 m - 4.5 m</td>
<td>Up/Down 160° min, Left/Right 160° min</td>
</tr>
<tr>
<td>6 m - 10 m</td>
<td>Up/Down 140° min, Left/Right 140° min</td>
</tr>
</tbody>
</table>

Note: Typical articulation exceeds minimum specifications.

Mentor Visual iQ 4.0mm tips

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Color</th>
<th>FOV (deg)</th>
<th>DOF mm (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T60115SR*</td>
<td>None</td>
<td>80</td>
<td>35-inf (1.38-inf)</td>
</tr>
<tr>
<td>T60115SF</td>
<td>Black</td>
<td>115</td>
<td>4-inf (0.16-inf)</td>
</tr>
</tbody>
</table>

Side View

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Color</th>
<th>FOV (deg)</th>
<th>DOF mm (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T60115SN</td>
<td>Red</td>
<td>115</td>
<td>1-30 (.04-1.18)</td>
</tr>
<tr>
<td>T60120SF</td>
<td>Blue</td>
<td>120</td>
<td>6-inf (.24-inf)</td>
</tr>
</tbody>
</table>

Stereo Measurement

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Color</th>
<th>FOV (deg)</th>
<th>DOF mm (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM40555FF</td>
<td>Black</td>
<td>55/55-FWD</td>
<td>5-inf (.20-inf)</td>
</tr>
<tr>
<td>TM40555S5G</td>
<td>Blue</td>
<td>55/55-SIDE</td>
<td>4-inf (.16-inf)</td>
</tr>
</tbody>
</table>

*Mentor Visual iQ 6.1mm tips

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Color</th>
<th>FOV (deg)</th>
<th>DOF mm (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T6150FF*</td>
<td>None</td>
<td>50</td>
<td>50-inf (2.00-inf)</td>
</tr>
<tr>
<td>XLGST6150FG</td>
<td>White</td>
<td>50</td>
<td>12-200 (.47-7.87)</td>
</tr>
<tr>
<td>XLGST61120FG</td>
<td>Black</td>
<td>120</td>
<td>5-120 (.20-4.72)</td>
</tr>
<tr>
<td>XLGST6180FN</td>
<td>Orange</td>
<td>80</td>
<td>3-10 (.12-7.9)</td>
</tr>
<tr>
<td>XLGST6190FF</td>
<td>Yellow</td>
<td>90</td>
<td>20-inf (.79-inf)</td>
</tr>
<tr>
<td>XLGST6150FB</td>
<td>Purple</td>
<td>50 (45 DOV)</td>
<td>12-80 (.47-3.15)</td>
</tr>
<tr>
<td>T6185FF*</td>
<td>Orange &amp; Blue</td>
<td>65</td>
<td>65-inf (2.56-inf)</td>
</tr>
</tbody>
</table>

Side View

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Color</th>
<th>FOV (deg)</th>
<th>DOF mm (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XLGST6150SF</td>
<td>Brown</td>
<td>50</td>
<td>45-inf (.17-inf)</td>
</tr>
<tr>
<td>XLGST6150SG</td>
<td>Green</td>
<td>50</td>
<td>9-160 (.35-6.30)</td>
</tr>
<tr>
<td>XLGST6120SG</td>
<td>Blue</td>
<td>120</td>
<td>4-100 (.16-3.94)</td>
</tr>
<tr>
<td>XLGST6180SN</td>
<td>Red</td>
<td>80</td>
<td>1-20 (.04-7.9)</td>
</tr>
</tbody>
</table>

3D Phase Measurement

<table>
<thead>
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<th>Part No.</th>
<th>Color</th>
<th>FOV (deg)</th>
<th>DOF mm (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XLGSTM616060FG</td>
<td>Black</td>
<td>105</td>
<td>8-250 (.31-9.84)</td>
</tr>
<tr>
<td>XLGSTM61105SG</td>
<td>Blue</td>
<td>105</td>
<td>7-250 (.27-9.84)</td>
</tr>
</tbody>
</table>

Stereo Measurement

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Color</th>
<th>FOV (deg)</th>
<th>DOF mm (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XLGSTM616060FG</td>
<td>Black</td>
<td>60/60-FWD</td>
<td>4-80 (.16-3.15)</td>
</tr>
<tr>
<td>XLGSTM615050SG</td>
<td>Blue</td>
<td>50/50-SIDE</td>
<td>2-50 (.8-1.97)</td>
</tr>
</tbody>
</table>

*Indicates tip with maximum brightness