Matching infrared lenses to applications
Telephoto
Wide angle
Macro
<table>
<thead>
<tr>
<th>Lens to camera compatibility</th>
<th>Lens</th>
<th>TiX560/ TiX520</th>
<th>Ti400/ 300/ 200</th>
<th>Ti32/ 29/27</th>
<th>TiX1000/660/ 640</th>
<th>Use for</th>
<th>Target audience</th>
</tr>
</thead>
</table>
| **2x telephoto**             | TELE2 | TELE2          | TELE1          | XLens/Tele  | Small to medium sized target, viewed from a distance | • Maintenance, electrical, and process technicians – when equipment is too high, difficult to reach, or unsafe to approach  
• Building inspection – see fine detail from a distance | |
| **4x telephoto**             | 4XTELE2 | 4XTELE2        | XLens/SupTele  | Small target, viewed from a great distance | Most relevant to those working in  
• Petrochemical – tall stacks  
• Power utilities generation and transmission – long distances  
• Metals refinement – too hot to approach; may have equipment near refinery that needs inspection | |
| **Wide angle**               | WIDE2 | WIDE2          | WIDE1          | • XLens/Wide  
• XLens/SupWide  | Large target, viewed from a relatively close distance | • Maintenance, electrical, and process technicians – when working in a tight space or needing to view a large area  
• Building inspectors – for roofing and industrial building inspections, save time by seeing a much greater area at once | |
| **Macro**                    | 25MAC2 | 25 micron      |                | • XLens/Macro1  
81 micron (TiX1000) or 119 micron (TiX660/640)  
• XLens/Macro2  
32 micron (TiX1000) or 47 micron (TiX660/640)  
• XLens/Macro3  
35 micron (TiX1000) or 50 micron (TiX660/640)  
• XLens/Macro1  
81 micron (TiX1000) or 119 micron (TiX660/640)  
• XLens/Macro2  
32 micron (TiX1000) or 47 micron (TiX660/640)  
• XLens/Macro3  
35 micron (TiX1000) or 50 micron (TiX660/640)  
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• XLens/Macro1  
81 micron (TiX1000) or 119 micron (TiX660/640)  
• XLens/Macro2  
32 micron (TiX1000) or 47 micron (TiX660/640)  
• XLens/Macro3  
35 micron (TiX1000) or 50 micron (TiX660/640) | Tiny to near microscopic target, viewed from extremely close | Engineers and scientists working in  
• Research and development  
• Electronics design and validation  
• Microscopic thermography  
Audience can be found in universities and research organizations, process development, and micro-electronics design companies |
Key features

- See the right level of detail in your target from up close to very far
- Smart lenses do not require calibration to a specific camera*
- Interchangeable between compatible cameras*
- Germanium with an engineered coating, the most efficient available material to transmit energy to the detector
- Specifically designed to work with your Fluke camera

*Applies to lenses for TiX560, TiX520, Ti400, Ti300, and Ti200. Lenses for TiX1000, TiX660, and TiX640 require calibration. Lenses for Ti32, Ti29, and Ti27 have calibration files included with the lens, and the customer does not need to send the camera in for calibration.
Benefits:

- See more detail when you view your target magnified 2 times more than a standard lens
- Reduce the need to enter the danger zone in your plant or to climb a tall ladder to capture the critical infrared details that could indicate your equipment has an issue

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<tr>
<th>Item Number</th>
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<th>What’s Included</th>
</tr>
</thead>
<tbody>
<tr>
<td>4335350</td>
<td>FLK-LENS/TELE2, Infrared telephoto smart lens for TiX560, TiX520, Ti400, Ti300, Ti200</td>
<td>2x infrared telephoto lens, protective case</td>
</tr>
</tbody>
</table>

2x telephoto lens

2x Telephoto Lens Overview
4x Telephoto Lens Overview

Benefits:
- See far more detail when you view your target magnified 4 times more than a standard lens
- Identify a potential issue in your equipment, even when your target is as tiny and distant as a failed splice on a high electrical line or failing refractory on a tall stack
- Benefit from extra stability for your 4x telephoto lens with our patent-pending lens attachment system that holds the lens securely in place.

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<tr>
<td>4607058</td>
<td>FLK-LENS/4XTELE2, 4X Telephoto IR smart lens for TIX560, TIX520, Ti400, Ti300, Ti200</td>
<td>4x infrared telephoto lens, protective case</td>
</tr>
</tbody>
</table>

4x Telephoto Lens Overview

Image 36x36 to 576x756
Wide Angle Lens Overview

Benefits:

- When working in a tight space, see a larger target from a close distance
- For building diagnostics, save time with roofing and industrial building inspections by viewing a much larger area at a time
- For electrical inspections, see an entire bank of switchgear cabinets in tight quarters or see a wider view when looking through IR Windows

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<tr>
<td>4335361</td>
<td>FLK-LENS/WIDE2, Infrared wide angle smart lens for TiX560, TiX520, Ti400, Ti300, Ti200</td>
<td>Infrared wide angle lens, protective case</td>
</tr>
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</table>

Wide angle lens (IR window)

Standard lens (IR window)
25 Micron Macro Lens Overview

**Benefits:**
- Get an incredibly detailed image of very small objects
- Gain insight into thermal buildup and dissipation on printed circuit boards, identify a faulty or undersized component, and potentially even pinpoint precise faulty locations on those components
- See details as small as 25 microns, which is smaller than the average human hair.

**Tips:**
- For best performance, ensure the camera remains stable and motionless while capturing images.
- We recommend you use a bench-top mounting system with the tripod mount thread on the TiX560 and TiX520. The tripod mount accessory available for the Ti400 may not hold the camera still enough, so we don’t recommend using the Ti400 with this lens.
- Using remote control to capture images with the TiX560 can make it easier to ensure the camera remains motionless. (Remote control not available with TiX520)

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<td>4607064</td>
<td>FLK-LENS/25MAC2, 25 Micron macro IR smart lens for TiX560, TiX520</td>
<td>25 micron macro IR lens, protective case</td>
</tr>
</tbody>
</table>
Who needs it?

• Industries / Verticals
  – Wide angle – all industries that use infrared cameras
  – 2x telephoto – all industries that use infrared cameras
  – 4x telephoto – petrochemical, power utilities generation and transmission, metallurgy and metals refinement
  – Macro – universities and research organizations, process development, electrical and mechanical engineers

• Who uses it?
  – Wide angle – most TI customers, especially industrial electricians, buildings diagnostics professionals, and roofing inspection professionals
  – 2x telephoto – most TI customers
  – 4x telephoto – maintenance in certain facilities, electrical utilities professionals, 3rd party thermographers
  – Macro – R&D engineer, scientists, technology researchers

• People who buy adjacent products
  – Infrared cameras
  – Macro lens: Scopemeters, high-end digital multimeters, and bench meters (an infrared camera plus macro lens can save time on troubleshooting electrical circuits and components vs a contact measurement tool)
Why do they need it?

See the right level of detail in your target
- Get a better view of your target
- See detail that would be otherwise extremely difficult or unsafe to view
- Save time when inspecting a large area (wide angle).
- Improve apparent temperature measurement accuracy

Smart lenses*
- Lenses are interchangeable between compatible cameras
- No need to send in the camera and lens to be calibrated to each other

*Lenses for TiX560/X520/400/300/200 only