Wafer-mapping fiber
HPF-T030 | Detects 300 mm wafers stored in a FOUP or open cassette without fail.

- Narrow beam of light has an aperture angle of ±1.5° or less
- Beam axis is factory-aligned

**FEATURES**

Light beam aperture angle is ±1.5° or less
With an aperture angle of ±1.5° or less, the effects of diffraction are insignificant, allowing reliable detection even when mapping 300 mm wafers stored at a 10 mm pitch.

Factory alignment of light beam
Working with a narrow beam of light can involve difficult adjustment of the light axis, requiring significant manpower and man-hours. Therefore, the light axis of the HPF-T030 is factory aligned to within ±0.8°, greatly reducing adjustment time.

![Parallel displacement diagram](image)

Actual wafer mapping waveform
![Actual wafer mapping waveform diagram](image)

**RECOMMENDED COMPATIBLE AMPLIFIER UNIT**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPX-AG00-1S</td>
<td>NPN</td>
</tr>
<tr>
<td>HPX-AG00-2S</td>
<td>PNP</td>
</tr>
</tbody>
</table>

- With 4-element LED and APC, light emission is twice as stable
Four-element LEDs shine brightly for longer than conventional ones, and LED brightness is monitored by Auto Power Control (APC), which regulates the current to maintain light emission at a constant level.

![Without APC vs. With APC](image)

Note: APC controls the light emission level of the LED, but does not compensate for a drop in the received light level arising from other factors.
**How to install the HPF-T030**

Make sure the emitter and receiver fiber units are on the same level.

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**Thru scan**

<table>
<thead>
<tr>
<th>Light emitter</th>
<th>Directional angle (half angle)</th>
<th>Shape</th>
<th>Cable</th>
<th>Scanning distance (mm)</th>
<th>Effective lens diameter</th>
<th>Min. detectable size (mm)</th>
<th>Model No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Side</td>
<td>1.5°</td>
<td></td>
<td>R5</td>
<td>HPX-AG</td>
<td>0.5</td>
<td>0.005</td>
<td>HPF-T030</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>FT</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>HPX-EQ</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td>FT</td>
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<td></td>
<td></td>
<td></td>
<td>HPX-H</td>
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<td></td>
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<td>FT</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>HPX-A</td>
<td>0.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*For scanning distances of the sensing modes, see the Technical Guide (A-043).*

*Response times for the sensing types: HP 5 ms, nL 1 ms, and FT 250 µs.

*The values shown in the Minimum detectable size column were obtained with optimal scanning distance and sensitivity settings (HPX-AG).*

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**Sensitivity setting (% tuning) without a wafer (workpiece) when using an HPX-AG Series amplifier**

When the received light intensity is 3000 (with no wafer), set the sensitivity by pressing the AUTO button and the + or – button several times. To set a value that is X % of the light level of 3000, you simply need to enter the value of X. If you enter 50 (%), for example, a value of 1500 will be set.

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**Caution**

Before entering a percentage, be sure to check changes in the received light level both when wafers are present and when absent. Once a percentage is determined, the same value can be used as the setting in the future in a similar environment.

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**In a mapping application, reflection from the wafer surface will result in fluctuation in received light intensity. For this reason, tuning the amplifier with a percentage value should be done without a wafer.”**

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**OUTER DIMENSIONS**

(单位: mm)

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*For scanning distances of the sensing modes, see the Technical Guide (A-043).*

*Response times for the sensing types: HP 5 ms, nL 1 ms, and FT 250 µs.

*The values shown in the Minimum detectable size column were obtained with optimal scanning distance and sensitivity settings (HPX-AG).*