TECHNICAL NOTE

PERMANENT AND REMOVABLE IR AND THz WINDOWS FOR OUR QS PYROELECTRIC DETECTORS

For some applications, it may be useful to use an IR or THz window with our broadband (0.1 µm to 3000 µm) pyroelectric detectors. The windows we offer are typically 0.5 mm thick. In the photo on the left, it is possible to see the components that make up our QW quartz “removable window”. This technical note will give you more information about these components.

PERMANENT WINDOWS

The permanent windows can be used with any product of our QS series of discrete and hybrid pyroelectric detectors. There are two sizes available, one for TO5 (x5) detectors and one for TO8 (x8) detectors. The permanent windows are glued into a TO can and then bonded to the TO header of the detector. In the photo on the right, it is possible to see a SS silicon window combined with one of our detectors.

REMOVABLE WINDOWS

The removable windows can be used with any of our pyroelectric UM-B, THZ-B and THZ-I-BNC detectors. They are mounted in a 25 mm holder, are designed to be inserted into the front bezel of these detectors with the appropriate spacer, and are held in place by the front aperture plate. In the photo on the right, it is possible to see a TPXW window added to our THZ9B-BL-DZ detector.
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**TABLE 1: LIST OF ALL AVAILABLE WINDOWS**

<table>
<thead>
<tr>
<th>PERMANENT</th>
<th>REMOVABLE</th>
<th>MATERIAL</th>
<th>SPECTRAL RANGE (TYP.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B5 or B8</td>
<td>BW</td>
<td>Barium Fluoride</td>
<td>0.2 – 17.5 μm</td>
</tr>
<tr>
<td>G5 or G8</td>
<td>GW</td>
<td>Germanium</td>
<td>8 – 14 μm</td>
</tr>
<tr>
<td>Q5 or Q8</td>
<td>QW</td>
<td>UV Grade Quartz</td>
<td>0.25 – 3.0 μm</td>
</tr>
<tr>
<td>S5 or S8</td>
<td>SW</td>
<td>Sapphire</td>
<td>0.1 – 7 μm</td>
</tr>
<tr>
<td>Si5 or Si8</td>
<td>SiW</td>
<td>Silicon (OC₂)</td>
<td>1.1 – 9 μm and 50 – 1000 μm</td>
</tr>
<tr>
<td>Z5 or Z8</td>
<td>ZW</td>
<td>Zinc Selenide</td>
<td>0.6 – 22 μm</td>
</tr>
<tr>
<td>SCQW</td>
<td></td>
<td>Single Crystal Quartz</td>
<td>0.2 to 3 μm and 50 – 3000 μm</td>
</tr>
<tr>
<td>PEW</td>
<td></td>
<td>High Density Polyethylene</td>
<td>10 – 1000 μm</td>
</tr>
<tr>
<td>TPXW</td>
<td></td>
<td>Rexolite</td>
<td>50 – 2000 μm</td>
</tr>
<tr>
<td>HRSFW</td>
<td></td>
<td>Silicon (HRSF)</td>
<td>30 – 1000 μm</td>
</tr>
</tbody>
</table>

**REMOVABLE WINDOW MECHANICAL DIAGRAM**

All dimensions in mm
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RELATIVE SPECTRAL CURVES FOR IR WINDOWS

Barium Fluoride
BaF₂

Germanium

UV Fused Silica
SiO₂
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Sapphire
$\text{AL}_2\text{O}_3$

Silicon
$(\text{OCz})$

Zinc Selenide
$\text{ZnSe}$
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RELATIVE SPECTRAL CURVES FOR THZ WINDOWS

NOTE:
The relative spectral transmission values presented in this technical note are approximate values. They will vary depending on window thickness and material quality.

References: www.tydex.ru and www.rmico.com