The PACS Photometer

Bands

<table>
<thead>
<tr>
<th>Reference λ</th>
<th>Blue</th>
<th>Green</th>
<th>Red</th>
</tr>
</thead>
<tbody>
<tr>
<td>70 μm</td>
<td>60-85 μm</td>
<td>100 μm</td>
<td>125-210 μm</td>
</tr>
<tr>
<td>100 μm</td>
<td>85-120 μm</td>
<td>160 μm</td>
<td></td>
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<tr>
<td>160 μm</td>
<td>125-210 μm</td>
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</tbody>
</table>

Bandwidth

- Blue: 60-85 μm
- Green: 85-120 μm
- Red: 125-210 μm

The PACS (blue) bolometer, with an instantaneous FoV of 3.5x17 arcmin²

Observing modes

- **Scan mapping**: Scan + orthogonal cross-scan to map a defined sky area
- **Mini scan map**: Scan mapping for point source
- **Parallel mode**: SPIRE and PACS scan maps executed simultaneously on the same sky region
- **Chopped mode**: Alternative for point sources, mainly used for calibration

Calibration accuracy

- **Point-source flux calibration**: 5-7%
- **Point-source flux repeatability**: <1% (blue, green), 3% (red)
- **Extended emission**: Data-reduction dependent; no absolute zero-level calibration

Sensitivity

- **Scan-map 1σ 1s (mJy)**: Blue - 30.6, Green - 36.0, Red - 68.5
- **Mini scan-map 5σ 1hr (mJy)**: Blue - 4.7, Green - 5.5, Red - 10.5

Products

- **Maps**: Units of Jy/(map pixel). Pixel size optimised to the band. Science programmes with two scan directions also have scan+cross-scan combined maps
- **Super-combined Maps**: For overlapping fields from multiple observations (same observing mode), all maps are combined to give higher sensitivity

Key documentation

- PACS Quick-start Guide
- PACS Handbook
- PACS Products Explained
- PACS Data Reduction Guide
- Poglitsch et al., 2010