HIRO
Customizable Harmonic Generator

FEATURES
- 515 nm, 343 nm, and 257 nm outputs
- Simple selection of active harmonic
- Simultaneous or switchable outputs
- Customizable for additional options

HIRO is a customizable free-standing harmonic generator for PHAROS and CARBIDE lasers, and FLINT oscillators. It provides a high power harmonic radiation at 515, 343, and 258 nm wavelengths. The selection of an active harmonic is manual but requires less than a few seconds thanks to its unique optomechanical design.

HIRO can be customized for additional options such as beam size and collimation adjustment, white light continuum generation, as well as beam division and harmonics splitting, which makes all harmonics available at the same time.

SPECIFICATIONS (pumped by PHAROS or CARBIDE lasers)

<table>
<thead>
<tr>
<th>Model</th>
<th>PH1F1</th>
<th>PH1F2</th>
<th>PH1F3</th>
<th>PH1F4</th>
<th>PH_W1</th>
<th>Output polarization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Available outputs ¹⁾ ²⁾</td>
<td>2H (515 nm)</td>
<td>2H (515 nm) 4H (258 nm)</td>
<td>2H (515 nm) 3H (343 nm)</td>
<td>2H (515 nm) 3H (343 nm) 4H (258 nm)</td>
<td>any combination and white light continuum</td>
<td></td>
</tr>
<tr>
<td>Conversion efficiency of 2H ³⁾</td>
<td>&gt; 50%</td>
<td>&gt; 50% ⁴⁾</td>
<td>H (V ⁵⁾)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conversion efficiency of 3H ³⁾</td>
<td>n/a</td>
<td>&gt; 25%</td>
<td>V (H ⁵⁾)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conversion efficiency of 4H ³⁾</td>
<td>&gt; 10%</td>
<td>&gt; 10% ⁴⁾</td>
<td>V (H ⁵⁾)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PHYSICAL DIMENSIONS

<table>
<thead>
<tr>
<th>Dimension</th>
<th>PH1F1</th>
<th>PH1F2</th>
<th>PH1F3</th>
<th>PH1F4</th>
<th>PH_W1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing (L × W × H)</td>
<td>455 × 160 × 85 mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommended area for fixing (L × W)</td>
<td>425 × 255 mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beam steering/intercepting (L × W × H)</td>
<td>150 × 55 × 75 mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹⁾ Depends on pump laser model.
²⁾ Residual fundamental radiation available on request.
³⁾ Percentage of the input pump power/energy when the repetition rate is up to 200 kHz.
⁴⁾ When the third harmonic is not in use.
⁵⁾ Optional, available on request.
⁶⁾ Maximum output power of 1 W.

HIRO pumped with ps pulses available on request.
**SPECIFICATIONS** (pumped by FLINT oscillators)

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<th>2H</th>
<th>3H</th>
<th>4H</th>
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<tr>
<td>Output wavelength</td>
<td>≈ 517 nm</td>
<td>≈ 345 nm</td>
<td>≈ 258 nm</td>
</tr>
<tr>
<td>Conversion efficiency</td>
<td>&gt; 35%</td>
<td>&gt; 5%</td>
<td>&gt; 1%</td>
</tr>
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**PHYSICAL DIMENSIONS**

- Housing (L × W × H): 455 × 160 × 85 mm
- Recommended area for fixing (L × W): 425 × 255 mm
- Beam steering/intercepting (L × W × H): 150 × 55 × 75 mm

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**DANGER:** VISIBLE AND/OR INVISIBLE LASER RADIATION AVOID EYE OR SKIN EXPOSURE TO DIRECT, REFLECTED OR SCATTERED RADIATION. CLASS 4 LASER PRODUCT

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**DRAWINGS**

- Top view
- Side view
- Front view
- Back view

Drawings of HIRO with water-cooling

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**SPECIFICATIONS** (pumped by FLINT oscillators)

- Generated harmonics: 2H, 3H, 4H
- Output wavelength: ≈ 517 nm, ≈ 345 nm, ≈ 258 nm
- Conversion efficiency: > 35%, > 5%, > 1%

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