

HIRO

Harmonic Generator



GENERAL DESCRIPTION

“HIRO” is a valuable option for “PHAROS” laser that provides high power harmonics radiation at 515 nm, 343 nm and 258 nm wavelengths. With its small foot print – 155×325 mm – and a wide variety of fixing methods “HIRO” fulfills the needs of OEM, industrial and scientific users. We offer several standard “HIRO” models (with open prospect of future upgrades) which meet most of the user needs. The active harmonic is selected by manual rotation of the knob – changing the harmonics will never take longer than a few seconds thanks to its unique layout and housing construction.

FEATURES

- High conversion rate to the second/third/fourth harmonic
- Easy switching between active harmonic
- Small footprint
- Integrated separation of the harmonics
- Flexible in fixing and easily customized to include additional options (continuum generators, beam expanders down-collimators)

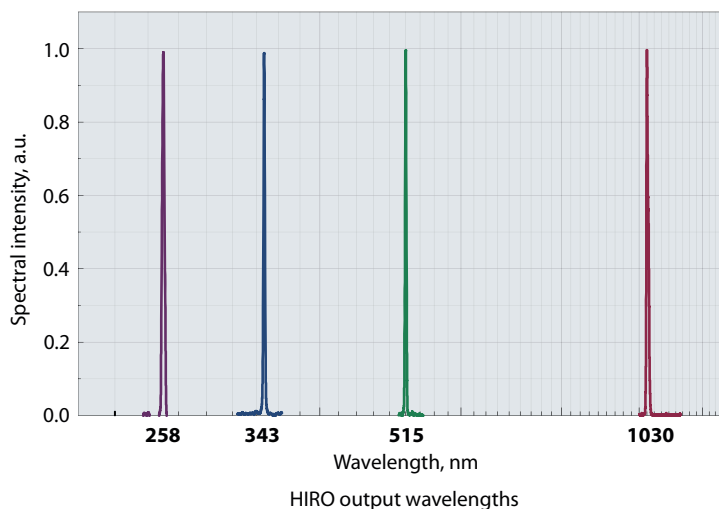
APPLICATIONS

- Material processing
- Microstructuring
- Nonlinear optics
- Spectroscopy

OPERATION

“HIRO” is the most customizable and upgradable harmonics generator available on the market. It can be easily modified to provide white light continuum, beam splitting/expanding/down-collimating options integrated in the same housing as well as harmonics splitting that makes all three harmonics available at a time. While pumped with 6 W of fundamental “PHAROS” radiation “HIRO” can generate >3 W of the second, >2 W of the third and >0.6 W of the fourth harmonic. Do not hesitate to contact Light Conversion for customized version of “HIRO”.

The principal of “HIRO” operation is based on collinear generation of higher laser radiation harmonics in angle-phase-matched nonlinear crystals. The optical layout of “HIRO” also includes beam reduction and collimation optics that ensures highest harmonics conversion efficiencies. Usually one active harmonic can be selected from the “HIRO”, however the residual lower harmonics can be also accessed through the output ports. All the accessible harmonics exiting “HIRO” are already separated from the lower ones by dichroic mirrors.



HIRO MODELS

Model	Generated harmonics	Output wavelengths
PH1F1	SH	1030 nm*, 515 nm
PH1F2	SH, FH	1030 nm*, 515 nm, 258 nm
PH1F3	SH, TH	1030 nm*, 515 nm, 343 nm
PH1F4	SH, TH, FH	1030 nm*, 515 nm, 343 nm, 258 nm

*residual fundamental radiation

PERFORMANCE SPECIFICATIONS

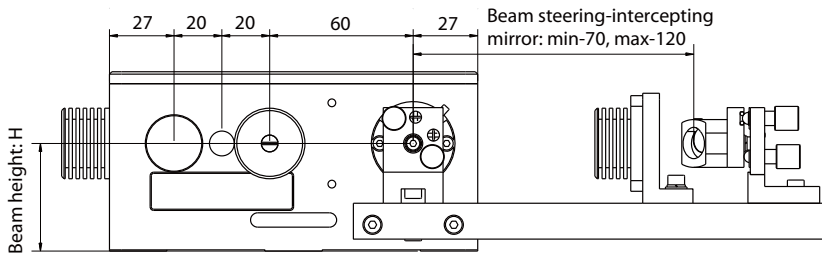
Harmonic conversion efficiencies are given as percentage of the input pump power/energy when the repetition rate is up to 200 kHz.

Harmonic	Conversion efficiencies for different HIRO models		Output polarizations
	PH1F1, PH1F2	PH1F3, PH1F4	
SH	>50 %	>30 % (>50 %*)	H (V**)
TH	-	>30 %	V (H**)
FH	>10 %	>8 % (>10 %*)	V (H**)

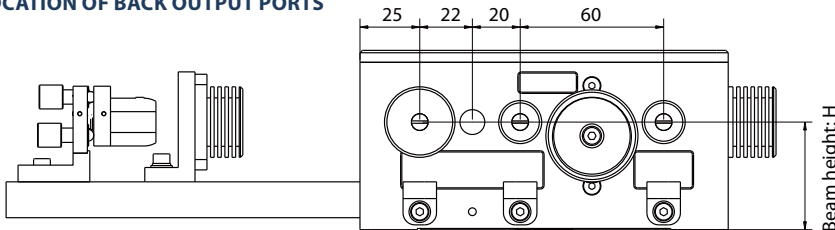
* when the third harmonic is not in use

** optional, depending on request

LOCATION OF FRONT OUTPUT AND INPUT PORTS

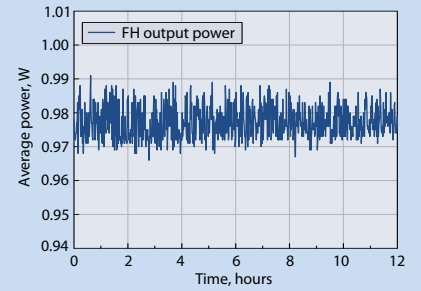
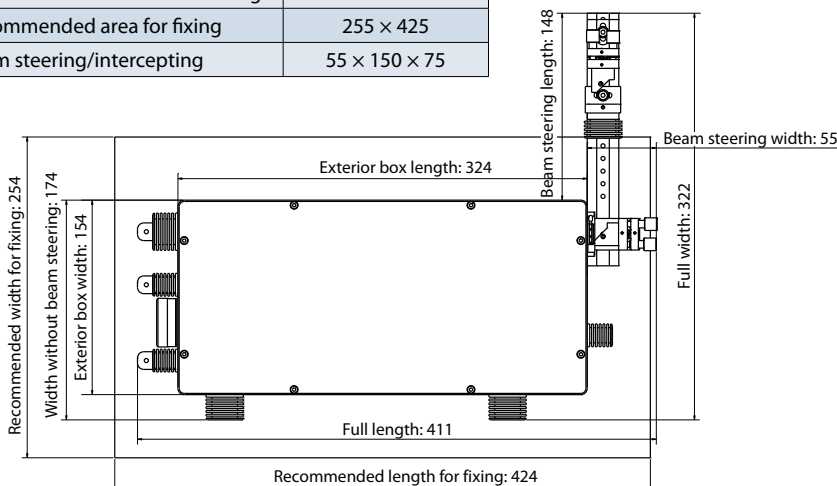


LOCATION OF BACK OUTPUT PORTS



DIMENSIONS (for HIRO all models)

	W x L x H (mm)
General dimension of the housing	155 x 355 x 75
Recommended area for fixing	255 x 425
Beam steering/intercepting	55 x 150 x 75



Long term output stability

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DANGER

VISIBLE AND/OR INVISIBLE LASER RADIATION
 AVOID EYE OR SKIN EXPOSURE TO DIRECT,
 REFLECTED OR SCATTERED RADIATION

Power and wavelength depend on pump
 options and configuration

CLASS IV LASER PRODUCT

Specifications are subject to change
 without notice.



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