HM

Harmonic Module

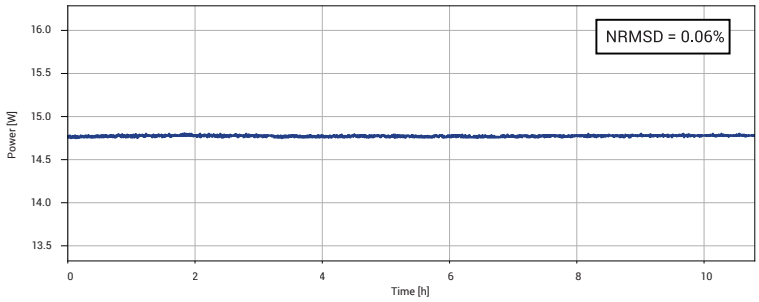
Key features:

- **Up to 4 switchable wavelengths** in one box for unlimited flexibility
  1030 nm, 515 nm, 343 nm, 258 nm
- High conversion efficiency with low pulse duration < 300 fs
- Customizable outputs - unused harmonic outputs as a multichannel IR beam switch
- Fully automated conversion efficiency control
- Advanced automation for long term power stability

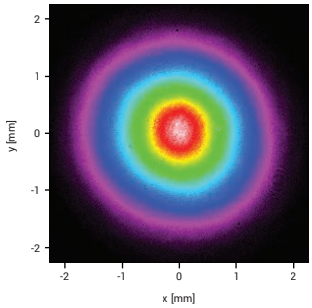
The **HM module** is engineered for high-performance wavelength conversion, offering efficiency and reliable long-term operation. Supporting four software-controlled, switchable outputs, including access to deep ultraviolet (DUV) wavelengths, the HM module features automated beam adjustment for stable, precise, and controllable wavelength conversion.

Designed for gas purging, it ensures extended lifetime and consistent power stability. Its sealed, robust construction allows the module to be mounted directly on the laser head or freely integrated into any workstation, offering maximum flexibility for OEMs and system integrators. Customized beam diameter and output configurations are available for seamless integration.

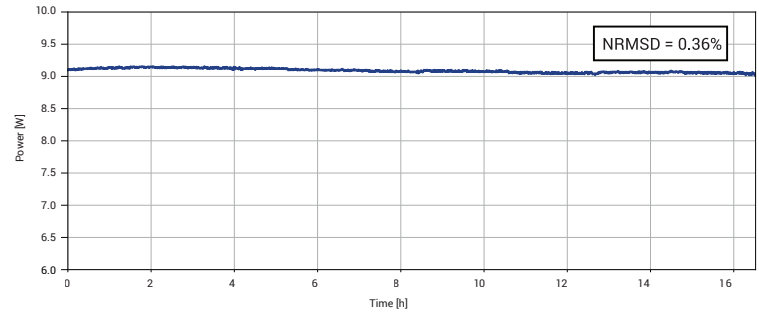
SH Power stability (515 nm)



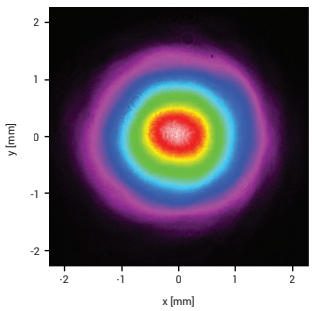
SH Typical beam profile



TH Power stability (343 nm)



TH Typical beam profile



All specifications are subject to change without prior notice due to continuous improvements.

Reliable ultrafast laser sources for industry

Light confined in fiber for minimum maintenance and superior stability

Specifications

Model	Harmonic Module NEW

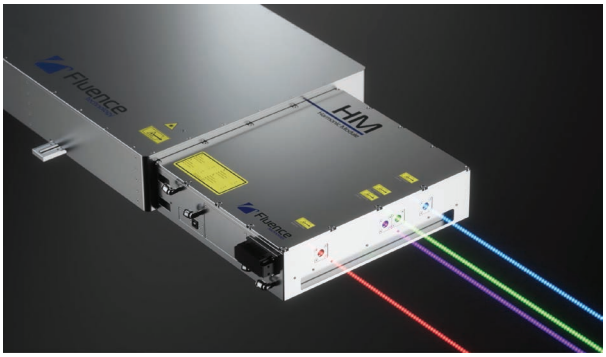
Output characterictics:

Max. Pump Power	< 60 W			
Pump Pulse Energy	< 200 µJ			
Available Outputs	Port #1	Port #2	Port #3	Port #4 [1]
Configuration Example 1	1030 nm	515 nm	-	-
Configuration Example 2	1030 nm	515 nm	343 nm	-
Configuration Example 3	1030 nm	515 nm	343 nm	258 nm
Configuration Example 4	1030 nm	515 nm	1030 nm	1030 nm
Configuration User Defined [2]	1030 nm	-	343 nm	-
User Configuration	Output configuration upon request (ask for details)			
Conversion Efficiency [3]	-	> 40% (~50% typ.)	> 20% (~30% typ.)	ask for details
Pulse Energy	-	< 100 µJ	< 50 µJ	ask for details
Pulse Duration	< 300 fs			
Power Stability - 24h [4]	-	< 1%	< 1%	ask for details
Beam Diameter	2.5 ± 0.5 mm (other upon request) [5]			
Conversion Efficiency Adjustment	Fully Automated, Software Controlled			
Wavelength Switching	Fully Automated, Software Controlled			
Closed Loop Power Stabilization	ask for details			
Dimensions (L x W x H)	320 x 393 x 88.3 mm			
Housing	Sealed Enclosure, Prepared for Gas Purging			
Control	GUI (USB)			

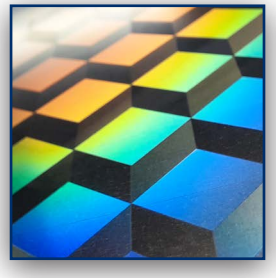
1. Without guaranteed lifetime. May serve as an alternative 1030 nm output.
2. Factory set.
3. With Jasper X1 lasers.
4. NRMSD under stable environmental conditions.
5. Individual output beam diameter customizatin available. Beam expanders integrated within device.

Stronger Together: Harmonic Module & Jasper X1

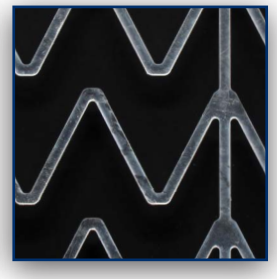
Unlock enhanced wavelength flexibility and process efficiency with a system designed to work as one.



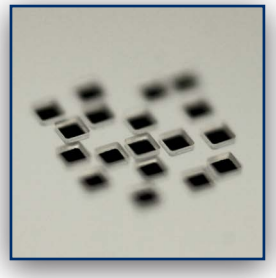
Flexible Power for Demanding Applications:



Surface structuring (LIPSS)



Medical devices (stents)



Ablation cutting of glass

Microelctronics manufacturing

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