



Scientific diffraction gratings / Custom gratings

Transmission gratings for high energy lasers

Commitment to quality



HORIBA Jobin Yvon offers complete customer service, including expert technical advice for optimizing system configurations to meet customers' needs.

HORIBA Jobin Yvon is ISO 9001:2000 certified, and our well-staffed departments are committed to customer satisfaction and product quality.

Transmission gratings for high energy lasers

Transmission gratings for high energy lasers

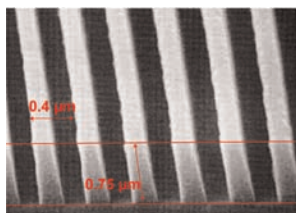
The Laser Megajoule (LMJ) gratings

The Laser Megajoule (LMJ) is a high energy laser facility under construction in Bordeaux for the French nuclear research agency (Commissariat à l’Energie Atomique, CEA). At completion, 240 pulsed laser beams will be focused on a 2 mm target, delivering 2 MJ and producing the high density, pressure and temperature conditions where nuclear fusion triggers.

An original feature of the LMJ is the use of large diffractive optic components, where the only comparable system in the world (the American National Ignition Facility at Lawrence Livermore Laboratories in California) uses classical dioptric components.

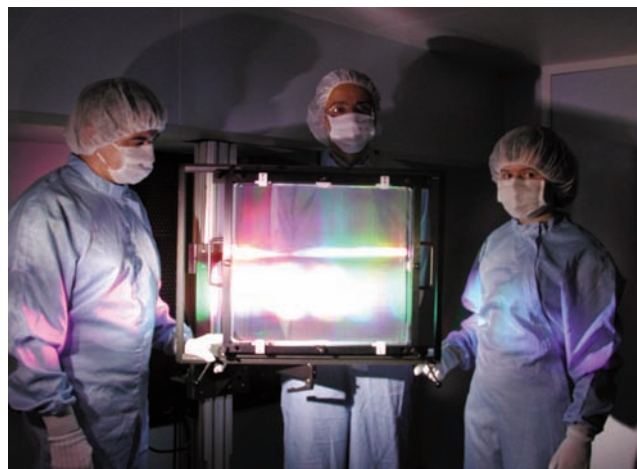
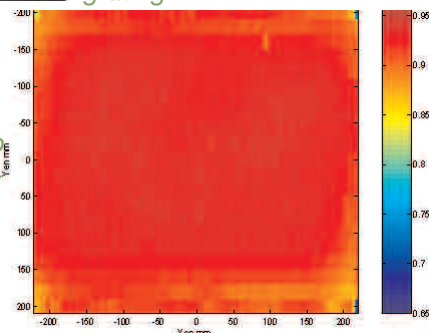
Thanks to a close cooperation between CEA and HJY scientists, the feasibility of these unique components (400x400 mm focusing gratings) was confirmed and production started in 2000 for the demonstration prototype which confirmed the high performance of the design.

The profile figure presents the SEM profile of the gratings produced at HJY: the groove depth is 2 times the period which was a real challenge. The uniformity over the 420x470 mm surface is also a technological achievement.



SEM groove profile of 2500 l/mm transmission grating

The efficiency map of a 1ω LMJ transmission grating demonstrates the large scale ion-etching uniformity



Specifications of the transmission gratings for high energy lasers

To produce the LMJ-type transmission gratings, we produce first a holographic mask, then we transfer the mask modulation directly into the fused silica substrate. So the grating is made only of fused silica (without any photoresist on epoxy layer). As a result the laser-induced damage threshold is as high as a fused silica plate.

We are producing two types of transmission gratings for high energy lasers:

□ gratings 1ω: gratings with straight and equidistant lines, 800 l/mm, optimized for 1.053 μm, 92 to 94% average efficiency on TM polarization.

□ gratings 3ω: focusing grating with curved and non-equidistant lines, 2400 l/mm optimized for 351 nm, 90 to 92% average efficiency on TM polarization. This focusing grating acts as a stigmatic focusing lens.

Measured damage threshold =
25 J/cm² at 1.053 μm for ns pulse
12 J/cm² at 351 nm for ns pulse

FAX FORM

For more information or custom grating / mirror quotations, please complete the corresponding request info on our web site: www.jobinyvon.com or send this completed form by fax.

The personal details that we use to provide or promote our products and services (for example your name and telephone number), will NOT be passed to ANY organization beyond the HORIBA Group, its Subsidiary or Associate Companies, Agents or Distributors to be used for marketing purposes.

Your Contact Details:

Last Name:	First Name:
Title:	Organization:
Dept:	Address:
State/Province:
Country:	Postal Code:
(USA please include Zip)	
Telephone:	E-Mail:
Fax:	

Please keep me informed with up-to-date information.

Your Interest

My interest is:

- Information only Possible purchase I have funding I am applying for funds

I intend to purchase

- Now! Within 3 months Within 6 months Within 12 months More than 12 months

- Salesperson please call

Please Send Product Information For:

Gratings & OEM

- Diffraction Gratings
 Pulse Compression Gratings
 OEM Spectrometers
 Imaging CCDs
 Multi Channel Imaging

Vacuum UV

- Monochromators & Spectrographs
 Mirrors
 Gratings

My Application is:

We would be interested in learning more about your application. Please give details below:

.....
.....

Comments

Please include any comments or further information about your requirement below:

.....
.....

USA - HORIBA Jobin Yvon Inc

Tel: +1-732-494-8660
Fax: +1-732-549-5125
Email: info@jobinyvon.net

France - HORIBA Jobin Yvon SAS

Tel: +33 (0) 1 64 54 13 00
Fax: +33 (0) 1 69 09 07 21
Email: info@jobinyvon.fr

Japan - HORIBA Ltd

Tel: +81 (0) 3 38618231
Fax: +81 (0) 3 38618259
Email: info@horiba.co.jp

Germany - HORIBA Jobin Yvon GmbH

Tel: +49 (0) 89 46 23 17-0
Fax: +49 (0) 89 46 23 17-99
Email: info@jobinyvon.de

Italy - HORIBA Jobin Yvon SRL

Tel: +39 0 2 57603050
Fax: +39 0 2 57600876
Email: info@jobinyvon.it

UK - HORIBA Jobin Yvon Ltd

Tel: +44 (0) 20 8204 8142
Fax: +44 (0) 20 8204 6142
Email: info@jobinyvon.co.uk

China - HORIBA Jobin Yvon SAS

Beijing representative office

Tel: +86 (0) 10 8567 9966
Fax: +86 (0) 10 8567 9066

Shanghai representative office

Tel: +86 (0) 21 3222 1818
Fax: +86 (0) 21 6289 5553
Email: jjh@jobinyvon.cn

HORIBA Jobin Yvon attempts to provide accurate information in this catalogue, however HORIBA Jobin Yvon assumes no responsibility should errors or inaccuracies

occur. HORIBA Jobin Yvon reserves the right to change the content without notice and provides this catalog "as is" with no warranty either express or implied.

COMPANY PROFILE

HORIBA Jobin Yvon is one of the world's largest manufacturers of analytical and spectroscopic systems and components and we are committed to serving our customers with superior products and technical support.

Established in 1819, Jobin Yvon is part of the HORIBA Group which employs more than 4,500 people worldwide, with annual sales in excess of \$900,000,000.

HORIBA Jobin Yvon, Sofie, Dilor, Spex and IBH are some of our well known and respected brand names.

HORIBAJOBIN YVON

USA: HORIBA Jobin Yvon Inc., 3880 Park Avenue, Edison, NJ 08820-3012, Toll-Free: +1-866-jobinyvon
Tel: +1-732-494-8660 Ext 232, Fax: +1-732-549-5125, E-mail: oem@jobinyvon.com, www.jobinyvon.com
France: HORIBA Jobin Yvon S.A.S., 16-18, rue du Canal, 91165 Longjumeau Cedex,
Tel: +33(0)164541338, Fax: +33(0)169099319, E-mail: oem.sales@jobinyvon.fr, www.jobinyvon.com
Japan: HORIBA Ltd., JY Optical Sales Dept, Higashi-Kanda, Daiji Building, 1-7-8 Higashi-Kanda
Chiyoda-ku, Tokyo 101-0031, Tel: +81 (0) 3 3861 8231, www.jyoriba.jp
Germany: +49 (0) 89 462317-0 Italy: +39 0 2 57603050 UK: +44 (0) 20 8204 8142
China: +86 (0) 10 8567 9966

(All HORIBA Jobin Yvon companies were formerly known as Jobin Yvon)

Explore the future

HORIBA