



# MOMENTIVE

performance materials

## Graphite Monochromators

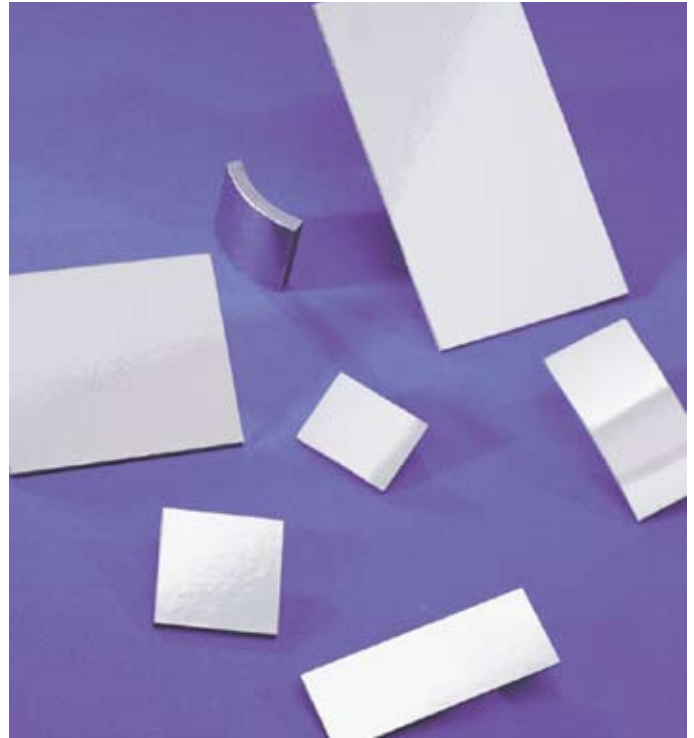
Graphite monochromators from Momentive Performance Materials are highly-oriented forms of high-purity pyrolytic graphite which diffract x-rays and neutrons with greater efficiency than any other material. In x-ray analysis, they provide 3 to 5 times greater intensity than conventional crystals. A singly-bent focusing monochromator using graphite yields 3 times the intensity of lithium fluoride at equivalent resolution. Graphite monochromators from Momentive Performance Materials provide the lowest mosaic spread available.

### Applications

- X-ray diffraction
- Neutron scattering and diffraction
- Scanning tunneling microscopy - calibration and substrates

### Physical Characteristics of HOPG (@ 300K)

Spacing of Reflecting Planes (002)	3.355-3.359 Å	
Mosaic Spread	0.4° ± 0.1° FWHM	
Density	2.255-2.265/cm <sup>3</sup>	
	<u>Parallel (002)</u>	<u>Perpendicular (002)</u>
Thermal Conductivity (W/mK)	1600-2000	~8
Thermal Expansion (/ °C)	Slightly negative	20 x 10 <sup>-6</sup>
Electrical Resistivity (ohm-cm)	3.5-4.5 x 10 <sup>-5</sup>	0.15-0.25



### Products

HOPG plates are produced as flat, singly-bent, and doubly-bent shapes. They are classified according to mosaic spread. Minimum size is 12mm x 12mm.

Grade	Mosaic Spread*	Nom. Thickness (mm)	Maximum Size* (mm)
ZYA	0.4° ± 0.1°	2	50 x 75
ZYB	0.8° ± 0.2°	2	50 x 75
ZYH	3.5° ± 1.5°	2,4,6,8	75 x 75

Thickness tolerances +0/-1 mm

Standard radii for singly-bent plates: 115, 225, 250, 510, 790, and 1300 mm.

Standard sizes for bent monochromators:  
 12x12, 20, 25, 40 20x20, 25, 40, 50  
 15x15, 25, 40, 50 25x25, 40, 50, 75

Thickness for bent plates: 2 +0/-1 mm.

\* Custom mosaics and tolerances available on request.

[www.momentive.com](http://www.momentive.com)

### SALES OFFICES

#### USA

T: 440.878.5700  
 F: 440.878.5928  
 E: cs-na.ceramics@momentive.com

#### GERMANY

T: 49.4152.9380  
 F: 49.4152.938.136  
 E: cs-eur.ceramics@momentive.com

#### JAPAN

T: 81.3.5114.3774  
 F: 81.3.5114.3779  
 E: cs-jp.ceramics@momentive.com

#### CHINA

T: 86.21.6288.1088  
 F: 86.21.6289.0681  
 E: cs-asia.ceramics@momentive.com

DISCLAIMER: THE MATERIALS, PRODUCTS AND SERVICES OF MOMENTIVE PERFORMANCE MATERIALS INC., MOMENTIVE PERFORMANCE MATERIALS USA INC., MOMENTIVE PERFORMANCE MATERIALS ASIA PACIFIC PTE. LTD., MOMENTIVE PERFORMANCE MATERIALS WORLDWIDE INC., MOMENTIVE PERFORMANCE MATERIALS GmbH & Co. KG, MOMENTIVE PERFORMANCE MATERIALS SUISSE Sarl, THEIR SUBSIDIARIES AND AFFILIATES DOING BUSINESS IN LOCAL JURISDICTIONS (collectively "SUPPLIERS"), ARE SOLD BY THE RESPECTIVE LEGAL ENTITY OF THE SUPPLIER SUBJECT TO SUPPLIERS' STANDARD CONDITIONS OF SALE, WHICH ARE INCLUDED IN THE APPLICABLE DISTRIBUTOR OR OTHER SALES AGREEMENT, PRINTED ON THE BACK OF ORDER ACKNOWLEDGMENTS AND INVOICES, AND AVAILABLE UPON REQUEST. ALTHOUGH ANY INFORMATION, RECOMMENDATIONS, OR ADVICE CONTAINED HEREIN IS GIVEN IN GOOD FAITH, SUPPLIERS MAKE NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, (i) THAT THE RESULTS DESCRIBED HEREIN WILL BE OBTAINED UNDER END-USE CONDITIONS, OR (ii) AS TO THE EFFECTIVENESS OR SAFETY OF ANY DESIGN INCORPORATING SUPPLIERS' PRODUCTS, MATERIALS, SERVICES, RECOMMENDATIONS OR ADVICE. AFOREMENTIONED EXCLUSIONS OR LIMITATION OF LIABILITY ARE NOT APPLICABLE TO THE EXTENT THAT THE END-USE CONDITIONS AND/OR INCORPORATION CONDITIONS CORRESPOND TO THE RECOMMENDED CONDITIONS OF USE AND/OR OF INCORPORATION AS DESCRIBED BY SUPPLIER IN ITS PRODUCT DATA SHEET AND/OR PRODUCT SPECIFICATIONS. EXCEPT AS PROVIDED IN SUPPLIERS' STANDARD CONDITIONS OF SALE, SUPPLIERS AND THEIR REPRESENTATIVES SHALL IN NO EVENT BE RESPONSIBLE FOR ANY LOSS RESULTING FROM ANY USE OF ITS MATERIALS, PRODUCTS OR SERVICES DESCRIBED HEREIN.

Each user bears full responsibility for making its own determination as to the suitability of Suppliers' materials, services, recommendations, or advice for its own particular use. Each user must identify and perform all tests and analyses necessary to assure that its finished parts incorporating Suppliers' products, materials, or services will be safe and suitable for use under end-use conditions. Nothing in this or any other document, nor any oral recommendation or advice, shall be deemed to alter, vary, supersede, or waive any provision of Suppliers' Standard Conditions of Sale or this Disclaimer, unless any such modification is specifically agreed to in a writing signed by Suppliers. No statement contained herein concerning a possible or suggested use of any material, product, service or design is intended, or should be construed, to grant any license under any patent or other intellectual property right of Suppliers or any of its subsidiaries or affiliates covering such use or design, or as a recommendation for the use of such material, product, service or design in the infringement of any patent or other intellectual property right.