

# Flexible Design, Unyielding Performance

fleX-Beam™ is a unique, compact X-ray generator that combines a low-powered X-ray source and a precisely-aligned polycapillary optic to deliver a bright X-ray beam for advanced material analysis. fleX-Beam is available in several standard focused or collimated beam configurations and can also be customized for specific applications.

## Industry-Leading Performance

- fleX-Beam's intensity is up to 10,000 times greater than conventional pinhole collimators
- Focal spot as small as  $5\mu\text{m}$  @ Rh Ka (20.162keV)
- 50 watt performance exceeds conventional kilowatt-powered X-ray tubes
- Integrated safety shutter & 8-position filter wheel

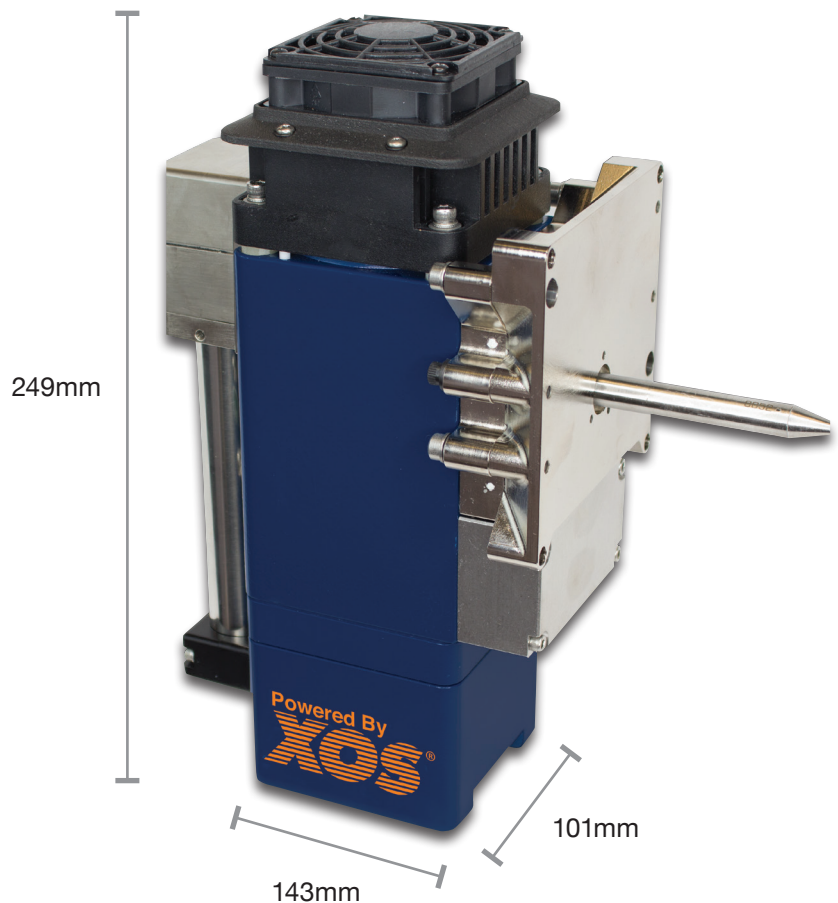
## Simple Integration

- This comprehensive solution is compact and easily integrates with any instrument or system

## Easy Serviceability & Field-Alignment

- Innovative design allows for the ability to interchange different optics, as well as service the X-ray source in the field

# fleX-Beam



# Custom Solutions

flex-Beam™ can be used in different applications where a compact X-ray source with high photon flux is required. Various configurations are available to be used in  $\mu$ -XRF, diffraction, in-line process monitoring or in-situ analysis, and medical imaging applications. XOS provides custom flex-Beam optics based on customer requirements.

## Standard flex-Beam Models

Highly-Focusing Optics									
Working distance (mm)	2	4	9	20	50	100	<b>Typical Applications: Micro XRF</b> - Small Feature Analysis - Film & Plating Thickness - High-Resolution Elemental Mapping  <i>* Note: For Mo Ka radiation using a 100<math>\mu</math>m, Mo-anode x-ray source at 50 kV/1mA</i>		
Focal spot size* ( $\mu$ m, FWHM)	8	15	25	45	100	180			
Output beam intensity* (photons/s)	$3.5 \times 10^7$	$7.0 \times 10^7$	$1.5 \times 10^8$	$2.0 \times 10^8$	$3.0 \times 10^8$	$4.0 \times 10^8$			
Slightly-Focusing Optics									
Output convergent angle (degree)	0.25	0.5	1	2				<b>Typical Applications: XRD</b> - Residual Stress Analysis - Laue Diffraction - Powder Diffraction  <i>* Note: For Cu Ka radiation using a 100<math>\mu</math>m, Cu-anode x-ray source at 50 kV/1mA. Working distance is 140mm and focal spot size is 0.5mm</i>	
Output beam intensity	$8.5 \times 10^8$	$1.6 \times 10^9$	$5.0 \times 10^9$	$1.6 \times 10^{10}$					
Highly-Collimating Optics									
Output beam diameter (mm)	0.5	1	2	3	4	6	10	20	<b>Typical Applications: XRD &amp; WDS</b> - Powder Diffraction - Texture & Strain Measurement - Wavelength-Dispersive Spectrometer  <i>* Note: For Cu Ka radiation using a 100<math>\mu</math>m, Cu-anode x-ray source at 50 kV/1mA. Output beam divergent angle is 0.2°</i>
Output beam intensity (photon/s)*	$3.0 \times 10^8$	$1.2 \times 10^9$	$3.5 \times 10^9$	$6.5 \times 10^9$	$1.0 \times 10^{10}$	$1.3 \times 10^{10}$	$1.8 \times 10^{10}$	$2.5 \times 10^{10}$	



PCS50 controller is available for research applications. It offers precise command and custom settings.  
 Dimensions: 382mm W x 335mm L x 107mm H

### Technical Specifications

Available Targets*	Cr, Cu, Mo, Rh, W
Nominal Output Power	50 kV / 1.0 mA / 50 W
Stability	<0.5% RSD per °C over 8 hours
Ambient Operating Temp	20°-35° C
Cooling Mode	Integrated forced air
Dimensions	101mm W x 143mm L (w/o optic) x 249mm H
Weight	5.9kg

Included: Built in safety shutter & 8-position filter wheel

\*Other target materials may be available upon request.



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