BrightLine® Laser Dichroic Beamsplitters

Product Data Sheet

Flattest dichroics in the industry

λ/5 RWE on 3 mm and 1λ RWE on 1 mm

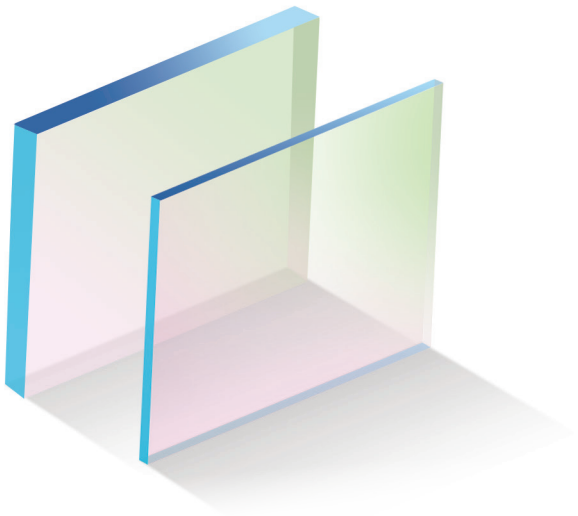
The steepest edges for higher throughput and signal collection

Wider reflection bands — into UV for photoactivation

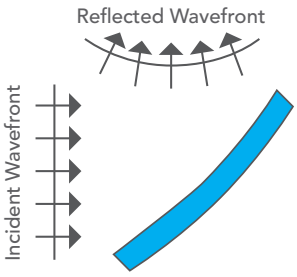
Learn more at www.semrock.cn

Laser Dichroic Beamsplitters for Super-resolution & TIRF Microscopy

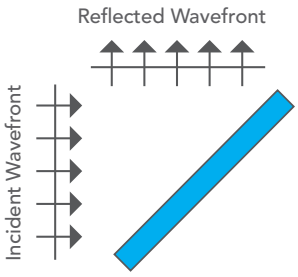
Semrock's industry leading laser dichroic beamsplitters just got flatter. We're setting a new standard for super-resolution & TIRF microscopy with λ/5 RWE on our new 3 mm thick dichroics and improved 1λ RWE on our existing 1 mm dichroics. Each one comes with our Semrock guaranteed steepest edges, short wavelength reflectivity down to 350 nm, and long wavelength transmission optimized out to 1200 nm or 1600 nm.



Super-resolution & TIRF imaging systems are highly sensitive to optical wavefront distortion and demand the highest quality components. In order to address the needs of this market, Semrock has introduced industry leading laser dichroic beamsplitters with λ/5 RWE. These new catalog products are offered on 3 mm thick glass to reduce sensitivity to mounting stress in custom optical systems. Designed and manufactured to have extremely high flatness, these dichroic beamsplitters minimize the reflected wavefront distortion, thereby maximizing both the signal and the signal-to-noise ratio in super-resolution microscopes.



Standard Flatness Dichroic



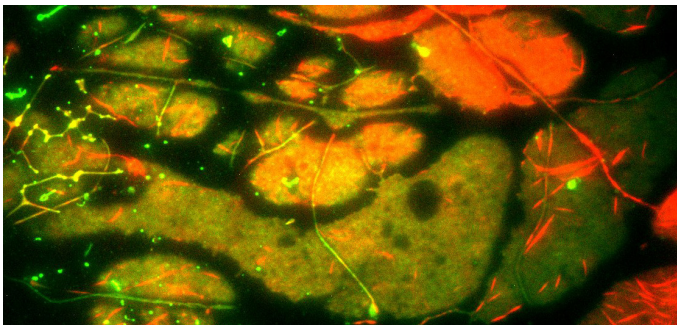
Super-resolution Dichroic

For setups in which maximizing the switching speed or minimizing the beam shift in transmission is critical, Semrock's 1 mm thick laser dichroic beamsplitters have been significantly improved to 1λ RWE (~255 m radius of curvature). These industry leading optics are compatible with popular microscopy filter cubes and improve the performance of laser based confocal and TIRF illumination systems. They are also ideal for reflection of imaging beams in conventional structured-illumination techniques as well as patterned illumination systems for localized photo-activation. These dichroic beamsplitters allow the use of much larger diameter illumination beams, offering researchers and instrument developers more flexibility in system design with no compromise to overall performance.

Steeper. Wider. Flatter.

The Best Laser Dichroic Beamsplitters Got Flatter

- λ/5 P-V Reflected Wavefront Error (RWE) on 3 mm
- 1λ P-V Reflected Wavefront Error (RWE) on 1 mm
- Minimal reflected wavefront distortion for large diameter illumination beams
- The steepest edges for higher throughput and signal collection
- Wider reflection bands — into UV for photoactivation and super-resolution techniques
- Wider transmission regions — into IR to 1200 or 1600 nm
- Available for popular laser lines



Xenopus laevis embryos transfected with GFP-cadherin and RFP-actin imaged in TIRF using Semrock's Di03-R405/488/561/635-t1 super-resolution dichroic in a full-multiband configuration. Image courtesy of Keck Imaging Center, University of Virginia.

Laser Dichroic Beamsplitters for Super-resolution & TIRF	
1λ P-V RWE 1 mm Thickness Filter Part Number	λ/5 P-V RWE 3 mm Thickness Filter Part Number
Di03-R405-t1-25x36	Di03-R405-t3-25x36
Di03-R442-t1-25x36	Di03-R442-t3-25x36
Di03-R473-t1-25x36	Di03-R473-t3-25x36
Di03-R488-t1-25x36	Di03-R488-t3-25x36
Di03-R514-t1-25x36	Di03-R514-t3-25x36
Di03-R532-t1-25x36	Di03-R532-t3-25x36
Di03-R561-t1-25x36	Di03-R561-t3-25x36
Di03-R594-t1-25x36	Di03-R594-t3-25x36
Di03-R635-t1-25x36	Di03-R635-t3-25x36
Di03-R660-t1-25x36	Di03-R660-t3-25x36
Di03-R685-t1-25x36	Di03-R685-t3-25x36
Di03-R785-t1-25x36	Di03-R785-t3-25x36
Di03-R488/561-t1-25x36	Di03-R488/561-t3-25x36
Di03-R405/488/532/635-t1-25x36	Di03-R405/488/532/635-t3-25x36
Di03-R405/488/561/635-t1-25x36	Di03-R405/488/561/635-t3-25x36

NOTE: Mounting can impact flatness performance. Values above apply to unmounted parts.

Standard filter size 25.2 x 35.6 mm to fit all popular microscope cubes utilizing 1 mm dichroic beamsplitters.

***Semrock's Super-resolution/TIRF grade Flatness Microscopy Cubes** are optimized for mounting 1λ RWE, 1 mm thick super-resolution dichroics.*

Flatness / RWE Classification	Example Applications	Nominal Radius of Curvature	Maximum Reflected Beam Diameter, mm	Reflected Wave-front Error at 632.8 nm, PV	Dichroic Family, and Example Part Numbers
Super-resolution / TIRF	TIRF, PALM, STORM, STED	~ 1275 meters	22.5	<0.2λ	BrightLine Laser (Di03-R405-t3-)
		~ 255 meters	10	<1λ	BrightLine Laser (Di03-R405-t1-)
Laser	Confocal, combining/splitting laser beams	~ 30 meters	2.5	<6λ	BrightLine Laser (Di02-R405-) RazorEdge® (LPD01-488RU-) LaserMUX™ (LM01-503-)

IDEX HEALTH & SCIENCE | Semrock

For ordering, technical support, and contact information please visit www.semrock.cn