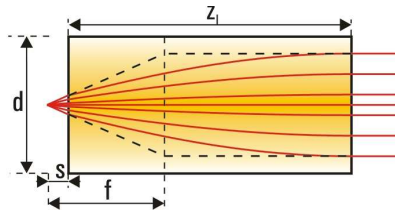


GRIN Rod Lenses – Numerical Aperture 0.5

Gradient index lenses for fiber coupling and beam shaping of laser diodes



Order example: GT-LFRL-100-025-50-CC (670)
 Design wavelength
 Coating Code
 NA: 0.5
 Pitch: 0.25
 Diameter: 1.0 mm
 Laser Focusing Rod Lens
 GRINTECH

- Working distance, design wavelength and lens length deviating from these standards can also be produced
- 8° angled facet / other diameters (0.60 and 0.85 mm) are available on request
- ZEMAX files can be [DOWNLOADED](#) from our website

Pitch P	Working distance s (mm)	Numerical Aperture NA	Lens length z _l (mm)	Focal length f (mm)	Gradient constant g (mm ⁻¹)	Refractive index at the center of the profile n ₀	Wavelength λ (nm)	Product code
Diameter d: 0.35 mm								
0.25	0	0.56	0.77	0.30	2.032	1.629	670	GT-LFRL-035-025-50-CC (670)
0.23	0.04	0.56	0.70	0.31	2.032	1.629	670	GT-LFRL-035-023-50-CC (670)
0.25	0	0.55	0.78	0.31	2.019	1.624	810	GT-LFRL-035-025-50-CC (810)
0.23	0.04	0.55	0.71	0.31	2.019	1.624	810	GT-LFRL-035-023-50-CC (810)
0.25	0	0.54	0.78	0.31	2.004	1.616	1550	GT-LFRL-035-025-50-CC (1550)
0.23	0.04	0.54	0.72	0.31	2.004	1.616	1550	GT-LFRL-035-023-50-CC (1550)
Diameter d: 0.5 mm								
0.25	0	0.54	1.15	0.45	1.369	1.629	670	GT-LFRL-050-025-50-CC (670)
0.23	0.06	0.54	1.05	0.45	1.369	1.629	670	GT-LFRL-050-023-50-CC (670)
0.25	0	0.53	1.15	0.45	1.361	1.624	810	GT-LFRL-050-025-50-CC (810)
0.23	0.06	0.53	1.05	0.46	1.361	1.624	810	GT-LFRL-050-023-50-CC (810)
0.25	0	0.53	1.16	0.46	1.349	1.616	1550	GT-LFRL-050-025-50-CC (1550)
0.23	0.06	0.53	1.06	0.46	1.349	1.616	1550	GT-LFRL-050-023-50-CC (1550)
Diameter d: 1.0 mm								
0.25	0	0.55	2.25	0.88	0.697	1.629	670	GT-LFRL-100-025-50-CC (670)
0.23	0.12	0.55	2.05	0.89	0.697	1.629	670	GT-LFRL-100-023-50-CC (670)
0.25	0	0.54	2.27	0.89	0.693	1.624	810	GT-LFRL-100-025-50-CC (810)
0.23	0.12	0.54	2.06	0.90	0.693	1.624	810	GT-LFRL-100-023-50-CC (810)
0.25	0	0.53	2.29	0.90	0.687	1.616	1550	GT-LFRL-100-025-50-CC (1550)
0.23	0.12	0.53	2.08	0.91	0.687	1.616	1550	GT-LFRL-100-023-50-CC (1550)
Diameter d: 1.8 mm								
0.25	0	0.52	4.24	1.66	0.370	1.629	670	GT-LFRL-180-025-50-CC (670)
0.23	0.23	0.52	3.85	1.68	0.370	1.629	670	GT-LFRL-180-023-50-CC (670)
0.25	0	0.52	4.27	1.67	0.368	1.624	810	GT-LFRL-180-025-50-CC (810)
0.23	0.23	0.52	3.88	1.69	0.368	1.624	810	GT-LFRL-180-023-50-CC (810)
0.25	0	0.51	4.30	1.70	0.365	1.616	1550	GT-LFRL-180-025-50-CC (1550)
0.23	0.23	0.51	3.92	1.71	0.365	1.616	1550	GT-LFRL-180-023-50-CC (1550)
Diameter d: 2.0 mm								
0.25	0	0.51	4.85	1.89	0.324	1.629	670	GT-LFRL-200-025-50-CC (670)
0.23	0.25	0.51	4.42	1.91	0.324	1.629	670	GT-LFRL-200-023-50-CC (670)
0.25	0	0.51	4.88	1.91	0.322	1.624	810	GT-LFRL-200-025-50-CC (810)
0.23	0.25	0.51	4.45	1.93	0.322	1.624	810	GT-LFRL-200-023-50-CC (810)
0.25	0	0.50	4.92	1.94	0.319	1.616	1550	GT-LFRL-200-025-50-CC (1550)
0.23	0.25	0.50	4.50	1.96	0.319	1.616	1550	GT-LFRL-200-023-50-CC (1550)

GRIN rod lenses are offered with antireflection coatings (R < 0.5 % for the design wavelength and incidence angles of 0 ... 30° corresponding to measurements on a reference substrate)

Coating Code: NC: no coating (reflection loss approx. 12 %)
 C1: λ = 450 ... 690 nm
 C2: λ = 800 ... 960 nm
 C5: λ = 1310 ... 1550 nm

Variations due to modifications of the production process are possible. It is the user's responsibility to determine suitability for the user's purpose.

Please note our partnership with Inscopix as our exclusive distributor for the field of non-confocal, single photon epi-fluorescence imaging for neuroscience applications in non-humans (see page 11).

Tolerances:
 lens length z_l: ± 5% due to variations of the gradient constant
 working distance s: ± 0.02 mm
 diameter d: + 0 / -0.01 mm
 Please ask for tighter diameter tolerances

Surface quality:
 5 / 3 x 0.025; L 3 x 0.005; E 0 (defined by DIN ISO 10110-7:2000-02).
 The surface quality is defined within 90 % of the lens diameter. Outside of this area defects are allowed.

Revision 12/2015

Brain Imaging – one of the most enabling applications of GRINTECH micro-optics

Endomicroscopy using GRINTECH lenses and assemblies allows an *in-vivo* imaging access to deep tissue regions in the brain, especially in non-humans. It helps to understand disease formation and progression on a cellular level of the tissue.

To support our customers even better by providing appropriate biological techniques and protocols, GRINTECH has created a partnership with **Inscopix** Inc. in Palo Alto, California, one of the leading technology providers in neuroscience microscopic imaging.

Beginning on December 1st, 2015 **Inscopix** will distribute exclusively our products in the field of non-confocal, single photon epi-fluorescence imaging for neuroscience applications in non-humans.

www.inscopix.com