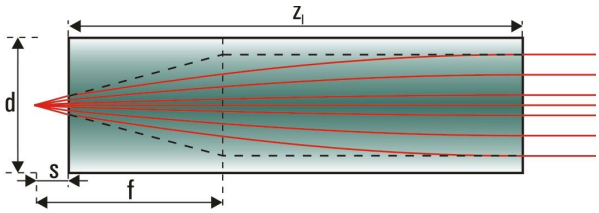
# GRIN Rod Lenses with intermediate NA = 0.30

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




Order example: GT-LFRL-100-025-33-CC (670)
- Design wavelength
- Coating Code
- NA: 0.33
- 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 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 l (nm) | Product code |
|---|---|---|---|---|---|---|---|---|
| Diameter d: 0.5 mm | | | | | | | | |
| 0.25 | 0 | 0.30 | 2.05 | 0.83 | 0.767 | 1.567 | 670 | GT-LFRL-050-025-30-CC (670) |
| 0.23 | 0.10 | 0.30 | 1,89 | 0.84 | 0.767 | 1.567 | 670 | GT-LFRL-050-023-30-CC (670) |
| 0.25 | 0 | 0.30 | 2.06 | 0.84 | 0.762 | 1.562 | 810 | GT-LFRL-050-025-30-CC (810) |
| 0.23 | 0.10 | 0.30 | 1,90 | 0.85 | 0.762 | 1.562 | 810 | GT-LFRL-050-023-30-CC (810) |
| 0.25 | 0 | 0.30 | 2.08 | 0.85 | 0.756 | 1.556 | 1310-1550 | GT-LFRL-050-025-30-CC (1550) |
| 0.23 | 0.10 | 0.30 | 1.92 | 0.86 | 0.756 | 1.556 | 1310-1550 | GT-LFRL-050-023-30-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: l = 450 ... 690 nm
- C2: l = 800 ... 960 nm
- C5: l = 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.

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.

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