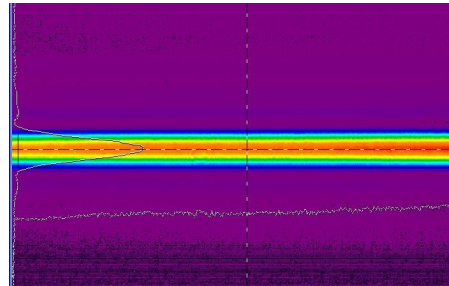
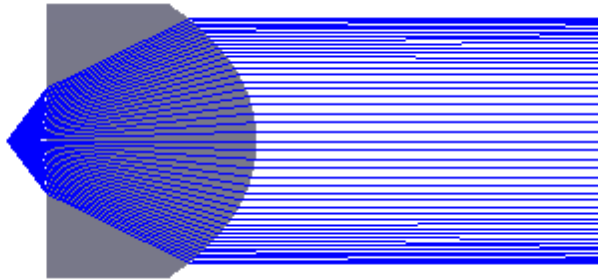




doric™ plano-convex acylindrical lens design 01 : FAC lens with long working distance

The Fast-Axis Collimation of laser diodes and laser diode bars requires lenses with aberration-free performance at extremely high numerical aperture. With the recent fine tuning and advancement of our acylindric lens manufacturing technology, we are now proudly offering sidelobes-free FAC lens for NA of up to 0.80. Our cylindrical and acylindric lenses are already well-known for its excellence, but with the latest product quality improvements we believe that we are offering the highest quality FAC lens available on the cylindrical microlens market right now.

| | |
|--------------|----------|
| WEBCODE: | D141-xxx |
| LENS DRAWING | |



| SPECIFICATIONS | SYMBOL | VALUE | | | | |
|--------------------------------|--------------|---|-------------------|-------------------|--------------------|--------------------|
| Part number | | D141-363 | D141-362 | D141-361 | D141-360 | D141-356 |
| Lens Type | | ACYLINDRICAL | | | | |
| Material | | S-TIH53 | | | | |
| Design Wavelength | λ_0 | 808 nm | | | | |
| Operating Wavelength | λ_0 | 750 - 1100 nm | | | | |
| Effective focal length | EFL | 0.900 mm | 0.590 mm | 0.512 mm | 0.320 mm | 0.275 mm |
| Working distance | WD | 0.228 mm | 0.150 mm | 0.130 mm | 0.081 mm | 0.070 mm |
| Diffraction Limited Divergence | DIV | 1.11 mrad | 1.70 mrad | 1.95 mrad | 3.13 mrad | 3.64 mrad |
| Lens Height | H | 1.60 +/- 0.040 mm | 1.05 +/- 0.030 mm | 0.91 +/- 0.030 mm | 0.570 +/- 0.015 mm | 0.490 +/- 0.010 mm |
| Central Thickness | CT | 1.22 +/- 0.040 mm | 0.80 +/- 0.030 mm | 0.70 +/- 0.030 mm | 0.435 +/- 0.015 mm | 0.375 +/- 0.010 mm |
| Length | L | custom +/- 0.05 mm | | | | |
| Focal length tolerance | ΔEFL | +/- 3 % | | | | |
| Numerical aperture | NA | 0.80 | | | | |
| Collimated power within angle | P | > 80% within 1.15 x DIV > 85% within 1.30 x DIV | | | | |
| AR coating | AR | 2S-NIR : broad band AR coating (R < 0.5% @ 790 - 1000 nm) | | | | |
| Note | | other size and custom AR coating are available upon request side or bottom tabs are available upon request | | | | |

* lens design available upon request

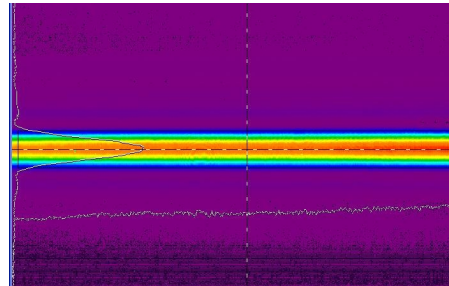
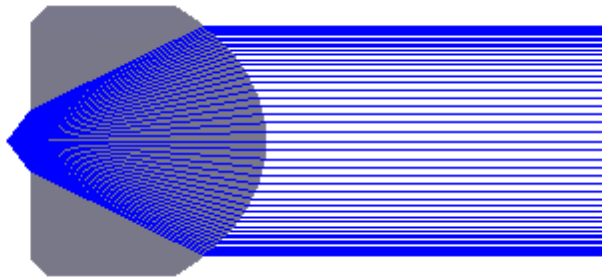
PRELIMINARY SPECIFICATION, SUBJECT TO CHANGE WITHOUT NOTICE



doric™ plano-convex acylindrical lens design 02 : FAC lens with short working distance

The Fast-Axis Collimation of laser diodes and laser diode bars requires lenses with aberration-free performance at extremely high numerical aperture. With the recent fine tuning and advancement of our acylindric lens manufacturing technology, we are now proudly offering sidelobes-free FAC lens for NA of up to 0.80. Our cylindrical and acylindric lenses are already well-known for its excellence, but with the latest product quality improvements we believe that we are offering the highest quality FAC lens available on the cylindrical microlens market right now.

| | |
|--------------|----------|
| WEBCODE: | D141-xxx |
| LENS DRAWING | |



| SPECIFICATIONS | SYMBOL | VALUE | | | | |
|--------------------------------|--------------|---|--------------------|--------------------|--------------------|--------------------|
| Part number | | D141-759 | D141-758 | D141-757 | D141-756 | D141-755 |
| Lens Type | | ACYLINDRICAL | | | | |
| Material | | S-TIH53 | | | | |
| Design Wavelength | λ_0 | 808 nm | | | | |
| Operating Wavelength | λ_0 | 750 - 1100 nm | | | | |
| Effective focal length | EFL | 0.900 mm | 0.590 mm | 0.512 mm | 0.320 mm | 0.275 mm |
| Working distance | WD | 0.132 mm | 0.086 mm | 0.075 mm | 0.047 mm | 0.040 mm |
| Diffraction Limited Divergence | DIV | 1.11 mrad | 1.70 mrad | 1.95 mrad | 3.13 mrad | 3.64 mrad |
| Lens Height | H | 1.60 +/- 0.04 mm | 1.050 +/- 0.030 mm | 0.910 +/- 0.030 mm | 0.570 +/- 0.015 mm | 0.490 +/- 0.010 mm |
| Central Thickness | CT | 1.40 +/- 0.04 mm | 0.920 +/- 0.030 mm | 0.800 +/- 0.030 mm | 0.500 +/- 0.015 mm | 0.430 +/- 0.010 mm |
| Length | L | custom +/- 0.05 mm | | | | |
| Focal length tolerance | ΔEFL | +/- 3 % | | | | |
| Numerical aperture | NA | 0.80 | | | | |
| Collimated power within angle | P | > 80% within 1.15 x DIV > 85% within 1.30 x DIV | | | | |
| AR coating | AR | 2S-NIR : broad band AR coating (R < 0.5% @ 790 – 990 nm) | | | | |
| Note | | other size and custom AR coating are available upon request side or bottom tabs are available upon request | | | | |

* lens design available upon request

PRELIMINARY SPECIFICATION, SUBJECT TO CHANGE WITHOUT NOTICE

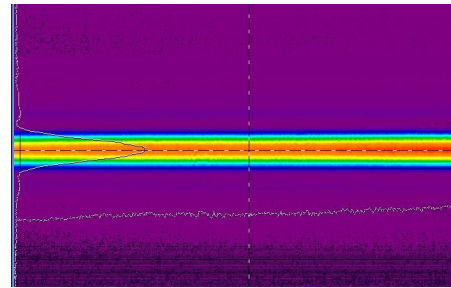
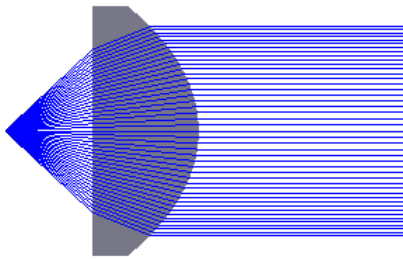
doric™ plano-convex acylindrical lens design 03 : FAC lens with long focal length

This lens design is adapted to get high NA with a relatively large EFL

WEBCODE:

D141-xxx

LENS DRAWING



| SPECIFICATIONS | SYMBOL | VALUE | | | |
|------------------------------------|--------------|---|--|-------------------|--|
| Part number | | D141-364 | | D141-364 | |
| Lens Type | | ACYLINDRICAL | | | |
| Material | | S-TIH53 | | | |
| Design Wavelength | λ_0 | 808 nm | | | |
| Operating Wavelength | λ_0 | 750 - 1100 nm | | | |
| Effective focal length | EFL | 7.00 mm | | 9.00 mm | |
| Working distance | WD | 4.20 mm | | 2.28 mm | |
| Diffraction Limited Divergence * | DIV | - | | - | |
| Lens Height | H | 13.40 +/- 0.10 mm | | 16.00 +/- 0.10 mm | |
| Central Thickness | CT | 5.10 +/- 0.10 mm | | 12.23 +/- 0.10 mm | |
| Length | L | custom +/- 0.10 mm | | | |
| Focal length tolerance | Δ EFL | +/- 3 % | | | |
| Numerical aperture | NA | 0.68 | | | |
| Form error of acylindrical surface | IRR. | 2.0 μ m peak-to-valley | | | |
| AR coating | AR | 2S-NIR : broad band AR coating (R < 0.5% @ 750 - 1100 nm) | | | |
| Note | | other size and custom AR coating are available upon request | | | |

* lens design available upon request

PRELIMINARY SPECIFICATION, SUBJECT TO CHANGE WITHOUT NOTICE

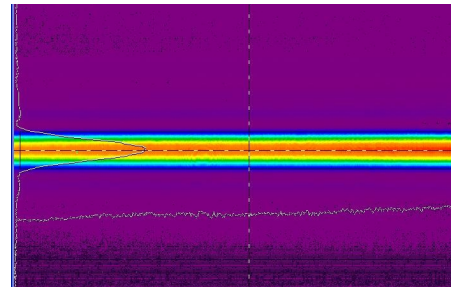
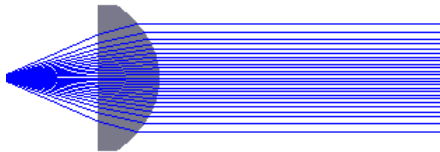
doric™ plano-convex acylindrical lens
design 04 : BK7 acylindrical lens

This lens design is adapted to get medium NA with a relatively large EFL

WEBCODE:

D141-xxx

LENS DRAWING



| SPECIFICATIONS | SYMBOL | VALUE | | | |
|------------------------------------|--------------|---|--|------------------|--|
| Part number | | D141-367 | | D141-368 | |
| Lens Type | | ACYLINDRICAL | | | |
| Material | | BK7 | | | |
| Design Wavelength | λ_0 | 905 nm | | | |
| Operating Wavelength | λ_0 | 750 - 1100 nm | | | |
| Effective focal length | EFL | 9.68 mm | | 19.03 mm | |
| Working distance | WD | 6.87 mm | | 13.43 mm | |
| Diffraction Limited Divergence * | DIV | - | | - | |
| Lens Height | H | 10.0 +/- 0.10 mm | | 19.0 +/- 0.10 mm | |
| Central Thickness | CT | 4.25 +/- 0.10 mm | | 8.5 +/- 0.10 mm | |
| Length | L | custom +/- 0.10 mm | | | |
| Focal length tolerance | Δ EFL | +/- 3 % | | | |
| Numerical aperture | NA | 0.50 | | | |
| Form error of acylindrical surface | IRR. | 2.0 μ m peak-to-valley | | | |
| AR coating | AR | 2S-NIR : broad band AR coating (R < 0.5% @ 750 - 1100 nm) | | | |
| Note | | other size and custom AR coating are available upon request | | | |

* lens design available upon request

PRELIMINARY SPECIFICATION, SUBJECT TO CHANGE WITHOUT NOTICE



doric™ plano-convex acylindrical lens
design 05 : Fused silica acylindrical lens for finite conjugates

This lens design is designed to image a source in 1D with 0.1 magnification.

WEBCODE:

D141-xxx

LENS DRAWING



| SPECIFICATIONS | SYMBOL | VALUE |
|------------------------------------|--------------|---|
| Part number | | D141-369 |
| Lens Type | | ACYLINDRICAL |
| Material | | Fused Silica |
| Design Wavelength | λ_0 | 1550 nm |
| Operating Wavelength | λ_0 | 1480 – 1580 nm |
| Effective focal length | EFL | 3.85 mm |
| Object Distance | S_o | 3.024 mm |
| Image Distance | S_i | 42.40 mm |
| Magnification | | 0.10 |
| Lens Height | H | 2.60 +/- 0.05 mm |
| Central Thickness | CT | 1.75 +/- 0.05 mm |
| Length | L | custom +/- 0.10 mm |
| Numerical aperture | NA | 0.20 (object) |
| Focal length tolerance | ΔEFL | +/- 3 % |
| Form error of acylindrical surface | IRR. | 1.0 μ m peak-to-valley |
| AR coating | AR | 2S-TEL : broad band AR coating (R < 0.5% @ 1520 – 1570 nm) |
| Note | | other size and custom AR coating are available upon request |

* lens design available upon request

PRELIMINARY SPECIFICATION, SUBJECT TO CHANGE WITHOUT NOTICE