

Optran® UVNCC, Optran® WFNCC

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非圆形纤芯光纤

Silica/ silica non-circular core fiber

这些光纤非常适合匀化光束激光应用。CeramOptec® 提供长宽比高达 1:6 的矩形芯光纤和具有 4 到 8 个侧面的正多边形芯光纤作为标准产品

These fibers are ideal for laser applications, where the shape and homogeneity of the output beam is decisive. CeramOptec® offers rectangular core fibers with aspect ratios of up to 1:6 and regular polygon core fibers with 4 to 8 side faces as a standard product.

Homogeneous power distribution

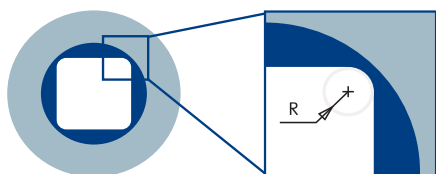
角半径

矩形的角半径 (r_4) 表示为矩形角内切圆的半径与矩形内切圆直径 (D_{in}) 之比。

(见下图) 正方形有三种标准半径: $r_4 < 10\%$ 、 $10\% < r_4 < 20\%$ 、 $r_4 > 20\%$

Corner radii

The corner radius for rectangular shapes (r_4) is described as the ratio between the radius of a circle inscribed in the corner of the rectangle and the diameter of a circle inscribed within the rectangle itself (D_{in}). (See drawing below) Three types of standard radii are available for a square shape: $r_4 < 10\%$, $10\% < r_4 < 20\%$, $r_4 > 20\%$.



$$r_4 = R/D_{in} * 100\%$$



边数大于 4 的正多边形的角锐度由外接圆和内接圆直径之比决定
Corner sharpness for regular polygons with a number of sides >4 defined by the ratio between the diameters of circumscribed and inscribed circles.

Wavelength

Optran® UVNCC	190–1200 nm
Optran® WFNCC	300–2400 nm

Numerical aperture (NA)

Low	0.16 ± 0.02
Standard	0.22 ± 0.02
High	0.28 ± 0.02

Technical data

Wavelength / spectral range	Optran® UVNCC: 190–1200 nm Optran® WFNCC: 300–2400 nm
Numerical aperture (NA)	0.16 ± 0.02 0.22 ± 0.02 0.28 ± 0.02 or customized
Operating temperature	-190 to +350°C
Core diameter	Geometries and diameters upon request
OH content	Optran® UVNCC: high (> 700 ppm) Optran® WFNCC: low (< 1 ppm) Fibers with OH content < 0.25
Standard proof test	100 kpsi (nylon, ETFE, acrylate cladding) 70 kpsi (polyimide cladding)
Minimum bending radius	50 × cladding diameter (short-term mechanical stress) 150 × core diameter (during use with high laser power)
Attenuation values	in relation to wavelength: see p. 21