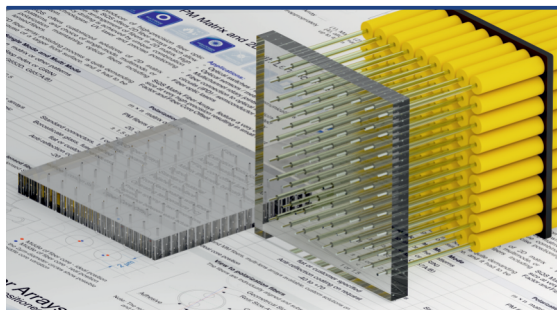




# 2D Fiber Arrays

Optical Fibers Positioned in 2D Matrix, 2D Matrix with PM and Lensed Fibers



Known as a producer of high-precision fiber optic components, SQS offers 2D fiber arrays which allow submicron arrangement of fibers in 2D matrix. High accuracy drilling is achieved by a unique combination of technologies: UV laser and precise positioning system.

SQS offers customized solutions of 2D matrix patterns, and choice of single-mode, multimode, or polarization maintaining optical fibers including lensed fibers. 2D fiber array polishing process is quite demanding because of a larger front surface, and it had to be accommodated to these specific requirements. Reached optical parameters (RL) of 2D fiber arrays by SQS correspond to values of 1D fiber arrays or ceramic ferrules.

2D Fiber Array assembly may be accommodated to customer requests.

Fiber Array may be positioned in a metal flange for easier handling. Optical Fibers may be protected by tubing, and terminated by any type of optical connector (single fiber or multifiber).

**Features:** SM or MM optical fiber, customized solutions available, various materials (borosilicate, fused silica), fiber core offset < 1  $\mu\text{m}$

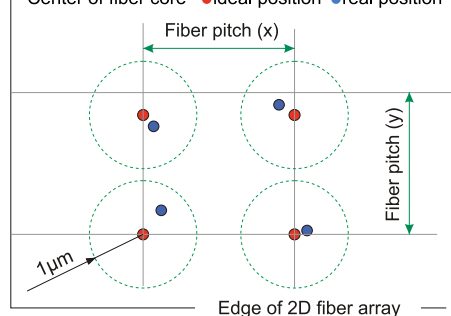
**Applications:** Optical switches / telecommunications, optical sensors / test and measurement, multichannel rotary joints / medicine, fiber connection to optical integrated circuits (IPD) / semiconductor industry, fiber optic lasers

	Single Mode and Multi-Mode Version	Polarization Maintaining Version
Fiber layout	m x n, hexagonal pattern or others	m x n, hexagonal pattern or others
Fiber type	MM (step index or graded index) SM (ITU-T G.652d, G.657a, b)	PM fibers (UV/VIS/NIR)
Fiber core offset [ $\mu\text{m}$ ]*	Typ. < 1	Typ. < 1
Fiber pitch [ $\mu\text{m}$ ]	x:250, y:500 for fiber 125/250 $\mu\text{m}$ ** x:350, y:350 for fiber 125/250 $\mu\text{m}$ **	x:500, y:500 for fiber 125/250 $\mu\text{m}$ **
Angle misalignment [°]	-	$\pm 1.5$ or $\pm 2.5$
Pointing accuracy [mrad]	< 5	< 5
Extinction ratio [dB]	-	20, 25, 30
Matrix thickness [mm]	2, 2.5, 3.0	2, 2.5, 3.0
Matrix material	fused silica	fused silica
End face finishing	flat (0°) or angled	flat (0°) or angled
Anti-reflection coating on end face	available on request	available on request
Output	optical connectors, 1D, 2D or 3D fiber arrays	optical connectors, 1D, 2D or 3D fiber arrays
Operating temperature [°C]	-40 to +85	-20 to +70

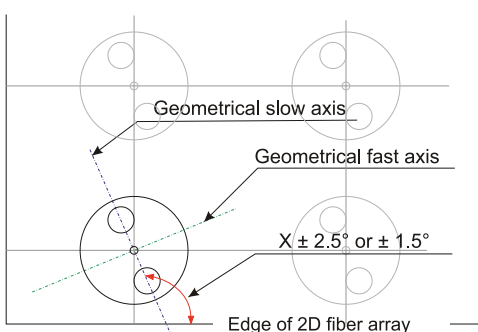
\* Precise spacing in two dimensions, distance between center of fiber core and ideal position. Parameter includes error drilling, core/clad concentricity and clad non-circularity.  
\*\* Minimum spacing, other on request

Fiber Core Offset	Angle Misalignment (PM Version)	Pointing Accuracy
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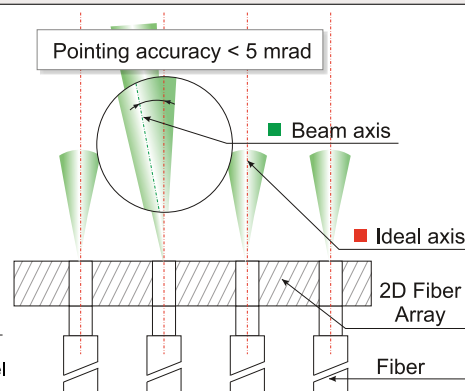
Center of fiber core - ● ideal position ● real position



Note: the 2 $\mu\text{m}$ -diameter circles show possible middle core variation



Note: 0°, 90° or tailored angle of rotation for each channel



## 2D Fiber Arrays with 81 SM Fibers (Tailored Solution)

