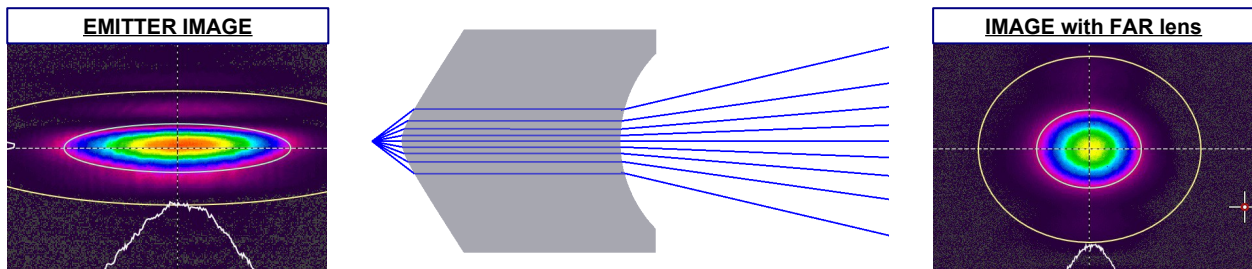


Fast Axis Reducer lens or FAR lens

The emission facet of the single mode laser diode is typically 1um thick and 3-5um wide. Its output beam is highly divergent in “fast axis direction” perpendicular to the active layer and significantly less divergent in “slow axis direction” parallel with the active layer. To collimate such an asymmetrically divergent beam, one can use combination of fast and slow axis collimating lenses (FAC+SAC). However the cross section of the beam is rectangular with longer side along the slow axis. If one wants to get **collimated** and **round** beam, he needs Fast Axis divergence Reducer (FAR) cylindrical lens, then a rotationally symmetric lens with longer focal length. The convex surface of FAR lens collimates the fast-axis divergence of a laser diode while a concave cylindrical surface equalizes it with the slow axis divergence. The thickness of the lens is used to correct the astigmatism of the diode. They are designed for a specific diode aspect ratio and specific wavelength. Fused silica is recommended material for high power at shorter wavelength.



	SYMBOL	VALUE		
PART NUMBER	-	D142-0404	D142-0402	NOTE
ORDERING CODE	-	FAR_1:3_STIH53_520	FAR_1:5_STIH53_780	
LENS TYPE	-	ACYLINDRICAL FAST-AXIS DIVERGENCE REDUCER		
GLASS	-	S-TIH53	S-TIH53	
DIODE ASPECT RATIO	-	1 : 3	1 : 5	
DESIGN WAVELENGTH	λ	520 nm	780 nm	
WORKING DISTANCE	WD	0.100 mm	0.069 mm	from laser to lens 1 st surface
LENS HEIGHT	H	0.412 mm	0.500 mm	+/- 0.02 mm
CENTRAL THICKNESS	ET	0.438 mm	0.550 mm	+/- 0.02 mm
LENGTH	L	custom	custom	+/- 0.05 mm
AR coating	AR	450 - 650 nm	750 - 1100 nm	R < 0.5%

NOTE : other lens design and AR coating are available upon request