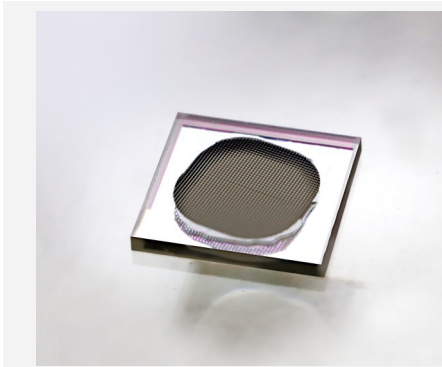


Wide Angle Diffusers

PoG Diffuser 45x40



Features and Advantages

The PoG (Polymer on Glass) diffuser combines a micro-structured polymer layer on a glass substrate, offering wide wavelength coverage (450–2000 nm), high transmission (>90%), customizable divergence angles (10°–130°) with various beam shapes, and excellent thermal stability (–40 °C to 125 °C, reflow soldering up to 260 °C), making it a cost-effective, reliable, and scalable solution for VCSEL-based applications such as 3D sensing, LiDAR, in-cabin monitoring, robotics, and machine vision.

Product Specifications

Product Code		120206000555 ⁽¹⁾
Specification Data	Unit	
Typical FOI Angle (FWHM) Horizontal ⁽²⁾⁽³⁾	°	48
Typical FOI Angle (FWHM) Vertical ⁽²⁾⁽³⁾	°	43
Material		Epoxy on glass
Length (L)	mm	3.32 ± 0.03
Width (W)	mm	3.32 ± 0.03
Thickness (T)	mm	0.384 ± 0.025
Clear Aperture (Al x Aw)	mm ²	2.190 x 2.126
Design Wavelength ⁽⁴⁾	nm	940nm / 850nm
AR Coating ⁽⁵⁾	nm	uncoated
Transmission ⁽⁶⁾	%	90

⁽¹⁾ Example for customization – design, dimensions and coating on request.

⁽²⁾ Angle at 50% level normalized to the centroid. Based on radiant intensity.

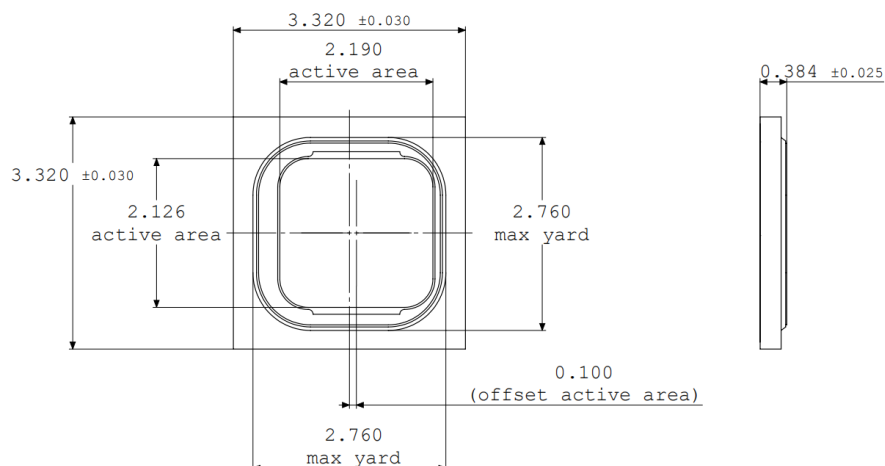
⁽³⁾ Typical VCSEL under typical driving conditions. Different VCSEL sources or different driving conditions could lead into different FOI values.

⁽⁴⁾ Optimization design based on VCSEL@940nm, can also be used for 850nm.

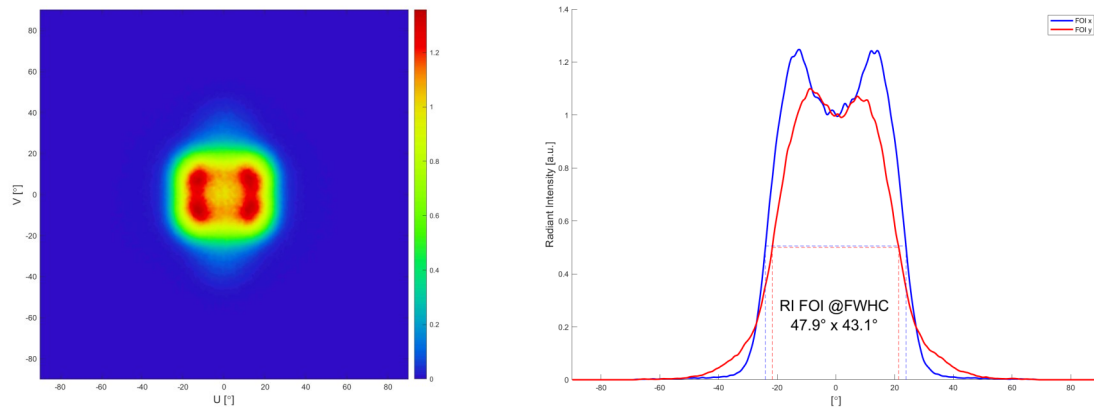
⁽⁵⁾ Optional for customized AR coating on glass surface.

⁽⁶⁾ Transmission is 90% for uncoated, and will be 94% with AR coating on glass surface.

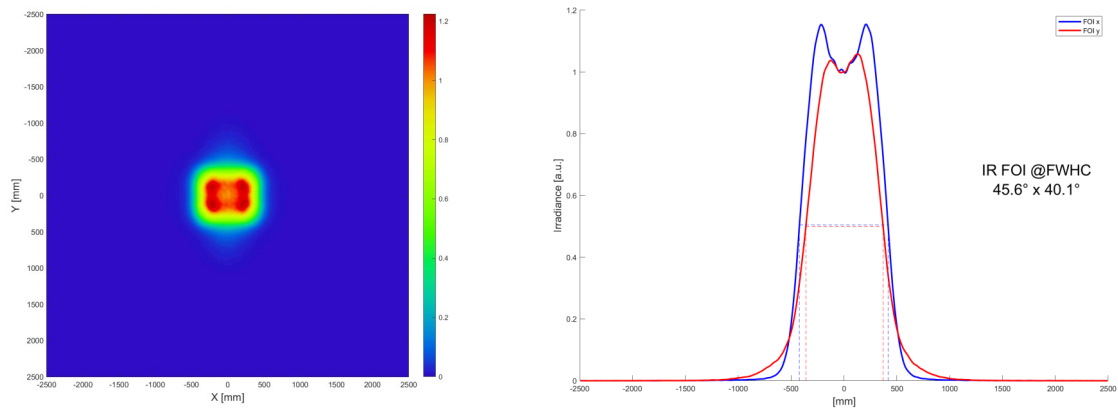
Product Drawing (mm)



Optical Simulation Results ⁽⁷⁾



Radiant Intensity Distribution Pattern (Left) and Radiant Intensity Output Profile (Right)



Irradiance Distribution Pattern (Left) and Irradiance Output Profile (Right)

⁽⁷⁾ Simulation based on measurements of a typical module product.