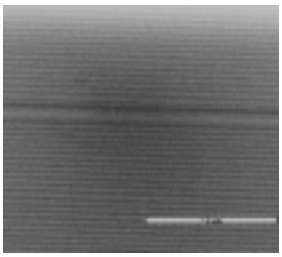
850nm VCSEL Epi Wafers

Standard Epi Structure for 850 nm Oxide and Ion-implant VCSELs

Target F-P wavelength	842~853 nm
Target PL wavelength	828~833 nm
Active layer	GaAs/AlGaAs MQW
DBRs	AlGaAs/AlGaAs
Dopant	Si for n-type and C for p-type
Substrate	2 degree off n-GaAs



Epi Wafer Specifications

Item	Range	Comments
F-P wavelength	840~855 nm	Uniformity : ±4.0 nm Run-to-run reproducibility : ± 0.5 % Over inner 65mm diameter of 3" wafer
PL wavelength	827~835 nm	Uniformity : ±2.0 nm Over inner 65mm diameter of 3" wafer
Doping level * Cap layer * p-DBR * n-DBR	 > 5×10^{19} cm^{-3} $1\sim4\times10^{18}$ cm^{-3} $1\sim3\times10^{18}$ cm^{-3}	Uniformity : ± 15 %
Defect density	< 100 cm^{-2}	Smooth background surface

Substrate Specifications

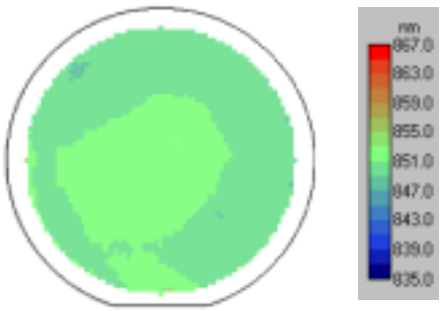
Material	VGF GaAs wafer Epi-ready	Orientation	(100) 2 ± 0.5 degree Off toward (011)
Doping	N-type, Si-doped	Flat spec.	EJ
Carrier con.	$0.8\sim4\times10^{18}$ cm^{-3}	Major flat	(0-1-1), 22 ± 2mm
Diameter	76.2 ± 0.4 mm	Minor flat	(0-11), 12 ± 1mm
Thickness	600 ± 10 μm	EPD	< 500 cm^{-2}

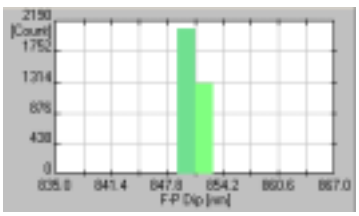
These specifications are subject to change without notice.

Notes:

1. Epi structure is available upon customer's request.
2. Tighter wavelength specifications are available on request.
3. Our technological team have amassed a wealth of experience in the development of the epitaxy and processing of VCSELs.
   If you have a specific application for a VCSEL, please call or e-mail.
   One of our specialists will be happy to discuss your particular requirements.

Reflectance Mapping



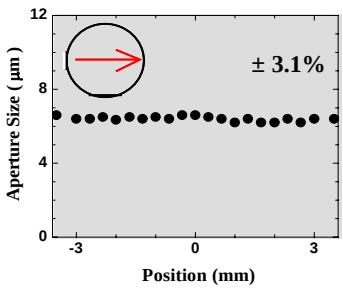


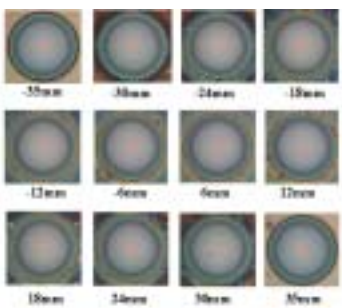
Average : 850.9 nm

Std dev : 0.853 nm

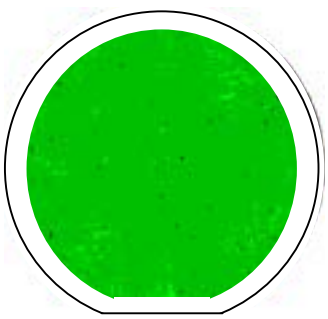
(0.100%)

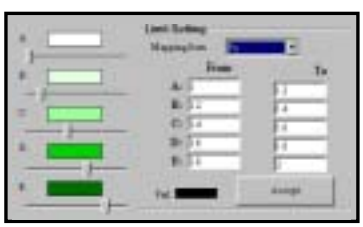
3inch Oxidation Uniformity





Oxide VCSEL Mapping P_0 @ 5 mA, 25ºC





Yield > 80%

Wafer Handling

Wafers are fragile. Handle with care.
After unpacking the box, make sure that there are no contaminants on wafer rings. If there are any contaminants on wafer rings, remove the contaminations using an air-blower before using the wafers.

308 SPRC, 664-14, Deokjin-Dong 1-Ga,
Deokjin-Gu, Jeonju 561-756, Korea
TEL: +82-63-270-4331 FAX: +82-63-270-4332

E-mail : sales@optowell.com

URL : http://www.optowell.com