



# Short-Form Catalog

## 2014/2015

Light is OSRAM

**OSRAM**  
Opto Semiconductors



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**Laser Diodes**

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# Blue Laser



Typ. emission wavelength 450nm

Efficient radiation source for cw and pulsed operation

Single transverse mode semiconductor laser

High modulation bandwidth

Technical Data	PL 450B	PL TB450B
$\lambda_{\text{peak}}$ $\lambda_{\text{peak}}$ (typ)		450 nm
Opt. power $P_{\text{opt}}$ [W] @ $I_F = 100$ mA	0.08	1.6
Forward Voltage $V_F$ (typ) [V] @ $I_F = 100$ mA	5.8	
Beam divergence (FWHM) $\Theta_{\perp} \times \Theta_{\parallel}$ [°]	21° x 7°	23° x 7°
Package Features		TO38 iCut package
<b>Ordering Codes</b>		
PL 450B	Q65111A0518	
PL TB450B		Q65111A3513

# Green Laser



<b>Technical Data</b>	<b>PL 520</b>
<b><math>\lambda_{\text{peak}}</math></b> $\lambda_{\text{peak}}$ (typ)	520 nm
<b>Opt. power</b> $P_{\text{opt}}$ [W] @ $P_{\text{op}} = 50 \text{ mW}$	0.05
<b>Forward Voltage</b> $V_F$ (typ) [V] @ $P_{\text{op}} = 50 \text{ mW}$	7
<b>Beam divergence (FWHM)</b> $\Theta_{\perp} \times \Theta_{\parallel}$ [°]	22° x 7°
<b>Package Features</b>	TO38 iCut package
<b>Ordering Codes</b>	
<b>PL 520_B1</b>	<b>Q65111A2445</b>
<b>PL 520_B2</b>	<b>Q65111A3559</b>

# Pulsed Laser Diodes

## Standard Pulsed Laser Diodes



Optical peak power up to 25 W

Laser wavelength 905 nm

Suited for short laser pulses from 1 to 100 ns

Laser aperture 200  $\mu\text{m}$   $\times$  2  $\mu\text{m}$

Technical Data	SPL PL90	SPL PL90_3
Package Outline		Plastic housing
$\lambda_{\text{peak}}$ $\lambda_{\text{peak}}$ (typ)		905 nm
Opt. power $P_{\text{opt}}$ [W]	25	75
Beam divergence (FWHM) $\Theta_{\perp} \times \Theta_{\parallel}$ [°]		25° x 9°
Package Features	5 mm radial plastic package, pulse width < 100 ns	
Ordering Codes		
SPL PL90	Q62702P1760	
SPL PL90_3		Q62702P5353

# Pulsed Laser Diodes

## Hybrid Pulsed Laser Diodes



Low cost, small size plastic package

Integrated FET and capacitors for pulse control

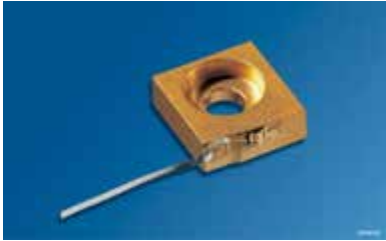
Strained InAlGaAs/GaAs QW-structures

High power large-optical-cavity laser structure

<b>Technical Data</b>	<b>SPL LL90_3</b>
<b>Package Outline</b>	Plastic housing with integrated driver
$\lambda_{\text{peak}}$ $\lambda_{\text{peak}}$ (typ)	905 nm
<b>Opt. power</b> $P_{\text{opt}}$ [W]	70
<b>Beam divergence (FWHM)</b> $\Theta_{\perp} \times \Theta_{\parallel}$ [°]	30° x 15°
<b>Package Features</b>	Integrated laser driver circuit, plastic package, pulse width < 50 ns
<b>Ordering Codes</b>	
<b>SPL LL90_3</b>	<b>Q65110A1009</b>



# Single Emitters (<10W) C-Mount



Efficient radiation source for cw and pulsed operation

Reliable InGa(Al)As strained quantum-well structure

New optimized single quantum-well structure

Improved reliability, low threshold current, higher efficiency

Technical Data	SPL CG81-2S
Package Outline	Laser on submount
$\lambda_{\text{peak}}$ $\lambda_{\text{peak}}$ (typ)	808 nm
Opt. power $P_{\text{opt}}$ [W]	2
Beam divergence (FWHM) $\Theta_{\perp} \times \Theta_{\parallel}$ [°]	38° x 7°
Package Features	Open heat sink (C-type)
Ordering Codes	
SPL CG81-2S	Q65110A1832

# Single Emitters (<10W)

## TO 220 Package with Fiber Connector



Efficient radiation source for cw and pulsed operation

Reliable InGa(Al)As strained quantum-well structure

New optimized single quantum-well structure

Improved reliability, low threshold current, higher efficiency

Technical Data	SPL 2F81-2S	SPL 2F94-2S
Package Outline	TO-220 FC (fiber coupled)	
$\lambda_{\text{peak}}$ $\lambda_{\text{peak}}$ (typ)	808 nm	940 nm
Opt. power $P_{\text{opt}}$ [W]	1.5	
Fiber diameter D [ $\mu\text{m}$ ]	200	
Numerical aperture NA []	0.22	
Package Features	TO-220 package, FC-receptacle for efficient fiber coupling, thermistor for temperature and wavelength control	
Ordering Codes		
SPL 2F81-2S	Q65110A1722	
SPL 2F94-2S		Q65110A1828

# Bare Bars and Laser Dies

## Bare Laser Bars with 30% fill factor



Un-mounted monolithic linear array

19 emitter (30% fill-factor) design

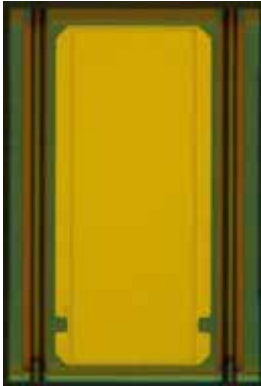
Recommended optical power 40W

Typical conversion efficiency 50%

Technical Data	SPL BX81-2S	SPL BM88 - 20H
<b>Package Outline</b>		unmounted laser bar
$\lambda_{\text{peak}}$ $\lambda_{\text{peak}}$ (typ)	808 nm	872 nm
$P_{\text{opt}}$ [W]	40	
<b>Beam divergence full angle (1/e<sup>2</sup>)</b> $\Theta_{\perp}$ x $\Theta_{\parallel}$ [°]	65° x 9°	
<b>Package Features</b>	30% filling factor, 19 emitters, emitter width 150 $\mu\text{m}$ , emitter pitch 500 $\mu\text{m}$	
<b>Chip size</b> [mm x mm]	9.5 x 1.2	
<b>Ordering Codes</b>		
<b>SPL BX81-2S (802 +/-3nm)</b>	<b>Q62702P5510</b>	
<b>SPL BM88-20H</b>		<b>Q65110A9647</b>

# Bare Bars and Laser Dies

## Pulsed Laser Dies



Reliable strained InGaAs/GaAs material

High power large-optical-cavity structure

Nanostack laser technology including multiple epitaxially stacked emitters

Laser aperture 200  $\mu\text{m}$   $\times$  10  $\mu\text{m}$

<b>Technical Data</b>	<b>SPL DS90_3</b>
<b>Package Outline</b>	unmounted laser chip
$\lambda_{\text{peak}}$ $\lambda_{\text{peak}}$ (typ)	903 nm
<b>Opt. power</b> $P_{\text{opt}}$ [W]	
<b>Beam divergence (FWHM)</b> $\Theta_{\perp} \times \Theta_{\parallel}$ [°]	25° $\times$ 10°
<b>Package Features</b>	emitter width 200 $\mu\text{m}$
<b>Chip size</b> [mm $\times$ mm]	0.6 $\times$ 0.6
<b>Ordering Codes</b>	
<b>SPL DS90_3</b>	<b>Q65111A5640</b>