

Light Avenue Premium Edition LED series is designed for high performance consumer applications. Remarkable light extraction is reached by a particular top emitting design with vertical chip structure. As this die can be driven at very high currents compared to the chip size, an outstanding cost vs. performance ratio can be obtained.



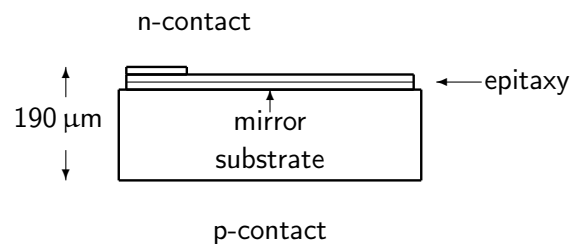
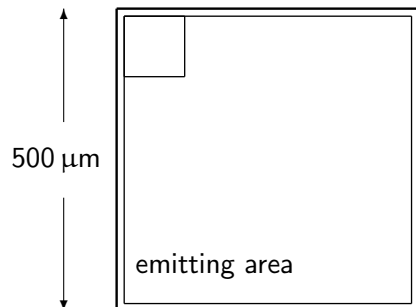
Features

- Highest brightness InGaN chip
- Top emitting device
- Lambertian radiation
- Optimized for SMT applications
- grouping: luminous intensity, wavelength

Applications

- Solid state lighting
- LCD backlighting
- Lamps
- Displays
- Light indicators

Delineation



Mechanical characteristics

DESCRIPTION	MINIMUM	TYPICAL <sup>1</sup>	MAXIMUM
Chip size (μm)	475	500	525
Chip height (μm)	170	190	210
Bond pad diameter (μm)	85	100	115
Top contact	Cathode (n), gold		
Bottom contact	Anode (p), gold alloy		
Die attach	Epoxy bonding		

Electro-optical characteristics ( $T_A = 25^\circ\text{C}$ )<sup>2</sup>

PARAMETER	SYMBOL	CONDITION	MIN.	TYP. <sup>1</sup>	MAX.	UNIT
Forward voltage	$V_F$	$I_F = 140\text{ mA}$	2.90		3.90	V
Reverse voltage	$V_R$	$I_R = 10\ \mu\text{A}$	5.0			V
Dominant wavelength	$\lambda_{dom}$	$I_F = 140\text{ mA}$	535		550	nm
Luminous intensity	$I_v$	$I_F = 140\text{ mA}$	3200	5000		mcd

Maximum ratings ( $T_A = 25^\circ\text{C}$ )<sup>3</sup>

PARAMETER	SYMBOL	VALUE	UNIT
Operating temperature range	$T_{op}$	-40...+85	°C
Forward current	$I_F$	250	mA
LED junction temperature	$T_j$	125	°C

Binning ( $I_F = 140\text{ mA}$ )<sup>4</sup>

		WAVELENGTH (NM)				
		535-540	537.5-542.5	540-545	542.5-547.5	545-550
Luminous intensity (mcd)	> 3200	A42	AM42	B42	BM42	C42
	> 4000	A43	AM43	B43	BM43	C43
	> 5000	A44	AM44	B44	BM44	C44
	> 6400	A45	AM45	B45	BM45	C45
	> 8000	A46	AM46	B46	BM46	C46

Notes:

- The usage of LEDs in life-support devices or systems has to be expressly and written authorized by the supplier!
- Dice are sensitive to ESD.
- Dice are shipped on blue foil with or without frame and have therefore to be stored between 15 and 30°C and below 60% relative humidity.
- Lead free product - RoHS compliant.
- The information in this document is subject to change without notice and describes the die generally. It shall not be considered as assured characteristics or detailed specification.

- The quality level of the final visual inspection shall comply to an AQL of 1.0 (according to MIL-STD-105E, level II), if the customer performs an incoming visual inspection of a shipment.
- All chips are checked according to the "Failure Catalog of Light Avenue dice" dated 2009-11-14. If this document is not familiar to you, please request it at your next sales office.

---

<sup>1</sup>Typical (Typ) data are defined as long-term production mean values. These values are not specified and only given for information.

<sup>2</sup>Measurements are done with an accuracy of  $\pm 15\%$ . Correlation to customer's equipment and products is required.

<sup>3</sup>Maximum ratings are package dependent and may differ between packages. The forward current is not limited by the die but by the effect of the LED junction temperature on the package. If you need more information on pulsed operation, please contact your next sales office about possible driving conditions. If not otherwise specified the maximum pulse current may not exceed the maximum current in continuous mode.

<sup>4</sup>There may be more than one bin on one single foil. Single bins cannot be ordered.