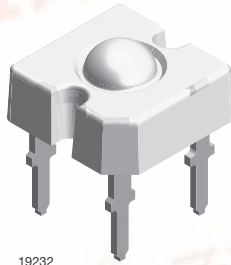


TELUX™



19232

**DESCRIPTION**

The TELUX™ series is a clear, non diffused LED for applications where supreme luminous flux is required.

It is designed in an industry standard 7.62 mm square package utilizing highly developed with super bright, AllnGaP technology.

The supreme heat dissipation of TELUX allows applications at high ambient temperatures.

All packing units are binned for luminous flux, forward voltage and color to achieve the most homogenous light appearance in application.

**PRODUCT GROUP AND PACKAGE DATA**

- Product group: LED
- Package: TELUX
- Product series: power
- Angle of half intensity: ± 45°

**FEATURES**

- High luminous flux
- Supreme heat dissipation:  $R_{thJP}$  is 90 K/W
- High operating temperature:  $T_{amb} = -40\text{ °C to }+110\text{ °C}$
- Meets SAE and ECE color requirements for the automobile industry for color red
- Packed in tubes for automatic insertion
- Luminous flux, forward voltage and color categorized for each tube
- Small mechanical tolerances allow precise usage of external reflectors or lightguides
- Compatible with wave solder processes according to CECC 00802
- ESD-withstand voltage: up to 2 kV according to JESD 22-A114-B
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC



**APPLICATIONS**

- Exterior lighting
- Tail-, stop- and, turn signals of motor vehicles
- Traffic light and signs

PARTS TABLE												
PART	COLOR	LUMINOUS FLUX (mIm)			at $I_F$ (mA)	WAVELENGTH (nm)			FORWARD VOLTAGE (V)			TECHNOLOGY
		MIN.	TYP.	MAX.		MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
VLWY9930	Yellow	4000	-	12 200	70	585	592	597	1.83	2.5	3.03	AllnGaP on Si

ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ °C}$ , unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage <sup>(1)</sup>		$V_R$	10	V
DC forward current	$T_{amb} \leq 85\text{ °C}$	$I_F$	70	mA
Surge forward current	$t_p \leq 10\text{ }\mu\text{s}$	$I_{FSM}$	0.1	A
Power dissipation		$P_V$	212	mW
Junction temperature		$T_j$	125	°C
Operating temperature range		$T_{amb}$	- 40 to + 110	°C
Storage temperature range		$T_{stg}$	- 40 to + 110	°C
Soldering temperature	$t \leq 5\text{ s}$ , 1.5 mm from body preheat temperature 100 °C/30 s	$T_{sd}$	260	°C
Thermal resistance junction/ambient	With anode heatsink of 70 mm <sup>2</sup>	$R_{thJA}$	200	K/W
Thermal resistance junction/pin		$R_{thJP}$	90	K/W

**Note**

<sup>(1)</sup> Driving the LED in reverse direction is suitable for a short term application

\*\* Please see document "Vishay Material Category Policy": [www.vishay.com/doc?99902](http://www.vishay.com/doc?99902)



OPTICAL AND ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Total flux	I <sub>F</sub> = 70 mA, R <sub>thJA</sub> = 200 K/W	Φ <sub>V</sub>	4000	-	12 200	mlm
Luminous intensity/total flux	I <sub>F</sub> = 70 mA, R <sub>thJA</sub> = 200 K/W	I <sub>V</sub> /Φ <sub>V</sub>	-	0.7	-	mcd/mlm
Dominant wavelength	I <sub>F</sub> = 70 mA, R <sub>thJA</sub> = 200 K/W	λ <sub>d</sub>	585	592	597	nm
Peak wavelength	I <sub>F</sub> = 70 mA, R <sub>thJA</sub> = 200 K/W	λ <sub>p</sub>	-	594	-	nm
Angle of half intensity	I <sub>F</sub> = 70 mA, R <sub>thJA</sub> = 200 K/W	φ	-	± 45	-	deg
Total included angle	90 % of total flux captured	φ <sub>0.9 V</sub>	-	100	-	deg
Forward voltage	I <sub>F</sub> = 70 mA, R <sub>thJA</sub> = 200 K/W	V <sub>F</sub>	1.83	2.5	3.03	V
Reverse voltage		V <sub>R</sub>	10	20	-	V
Temperature coefficient of λ <sub>dom</sub>	I <sub>F</sub> = 70 mA	T <sub>C</sub> λ <sub>dom</sub>	-	0.1	-	nm/K
Temperature coefficient of V <sub>F</sub>	I <sub>F</sub> = 70 mA, T > - 25 °C	T <sub>CVF</sub>	-	- 2	-	mV/K

LUMINOUS FLUX CLASSIFICATION		
GROUP	LUMINOUS FLUX (mlm)	
	MIN.	MAX.
H	4000	6100
I	5000	7300
K	6000	9700
L	7000	12 200

**Note**

- Luminous flux is tested at a current pulse duration of 25 ms and an accuracy of ± 11 %.  
The above type numbers represent the order groups which include only a few brightness groups. Only one group will be shipped on each tube (there will be no mixing of two groups on each tube).  
In order to ensure availability, single brightness groups will be not orderable.  
In a similar manner for colors where wavelength groups are measured and binned, single wavelength groups will be shipped in any one tube.  
In order to ensure availability, single wavelength groups will not be orderable.

FORWARD VOLTAGE CLASSIFICATION		
GROUP	FORWARD VOLTAGE (V)	
	MIN.	MAX.
Y	1.83	2.07
Z	1.95	2.19
0	2.07	2.31
1	2.19	2.43
Y	1.83	2.07
Z	1.95	2.19
0	2.07	2.31
1	2.19	2.43
2	2.31	2.55
3	2.43	2.67
4	2.55	2.79
5	2.67	2.91
6	2.79	3.03

COLOR CLASSIFICATION		
GROUP	DOMINANT WAVELENGTH (nm)	
	MIN.	MAX.
0	585	588
1	587	591
2	589	594
3	592	597

**Note**

- Wavelengths are tested at a current pulse duration of 25 ms and an accuracy of ± 1 nm.

**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

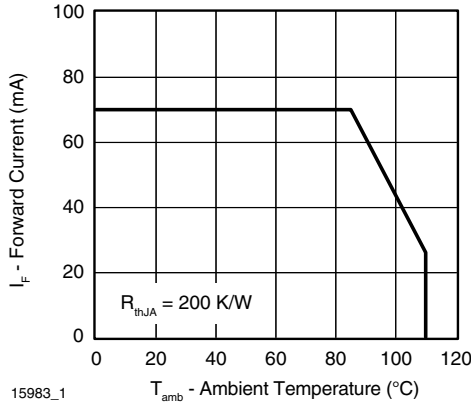


Fig. 1 - Forward Current vs. Ambient Temperature

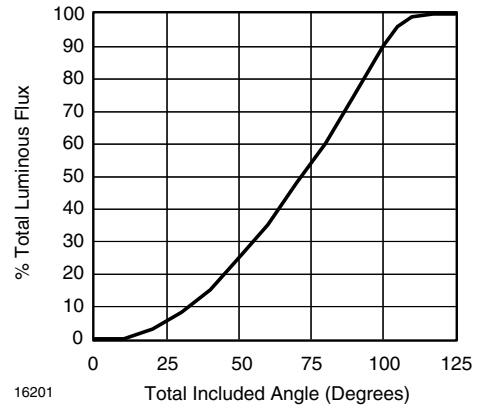


Fig. 4 - Percentage Total Luminous Flux vs. Total Included Angle for 90° Emission Angle

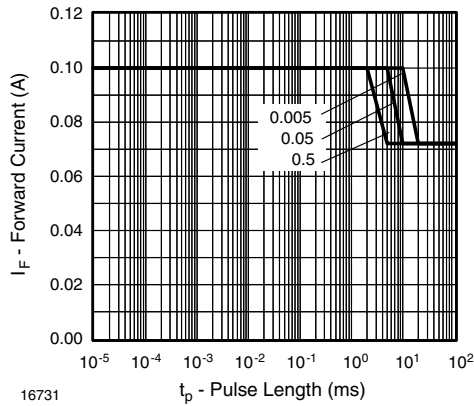


Fig. 2 - Forward Current vs. Pulse Length

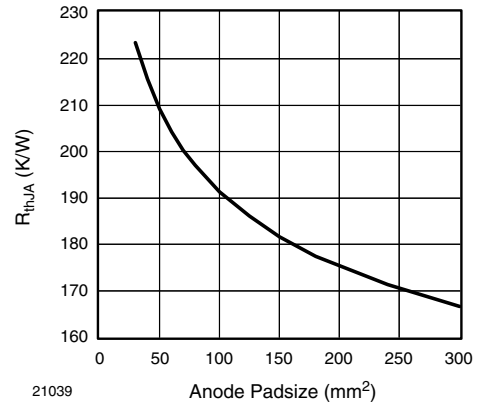


Fig. 5 - Thermal Resistance Junction Ambient vs. Anode Padsize

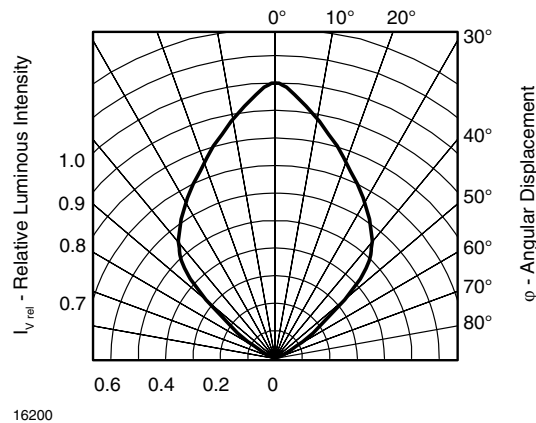
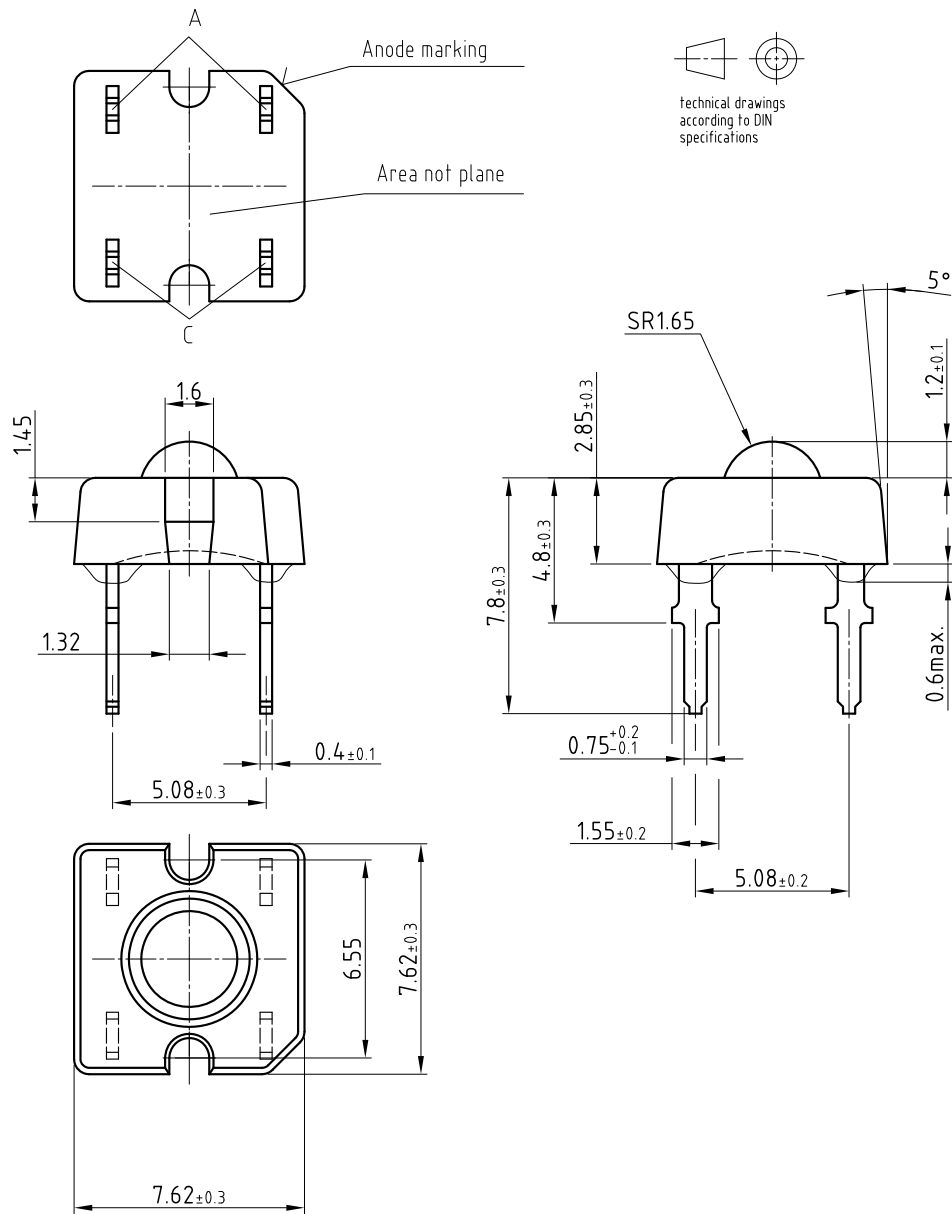


Fig. 3 - Rel. Luminous Intensity vs. Angular Displacement

**PACKAGE DIMENSIONS** in millimeters

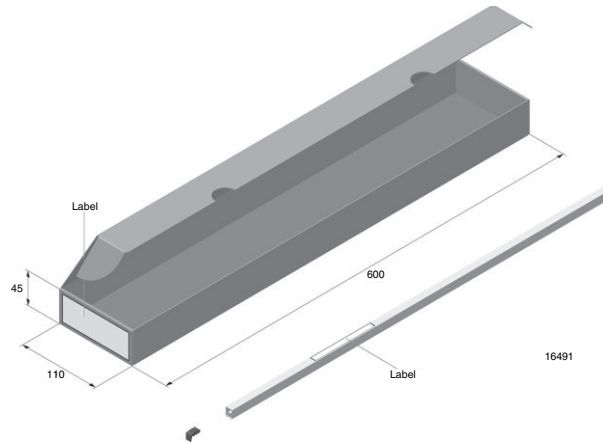


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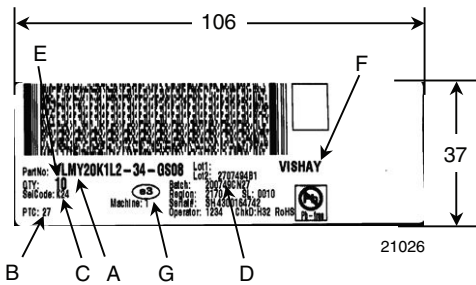
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**FAN FOLD BOX DIMENSIONS** in millimeters

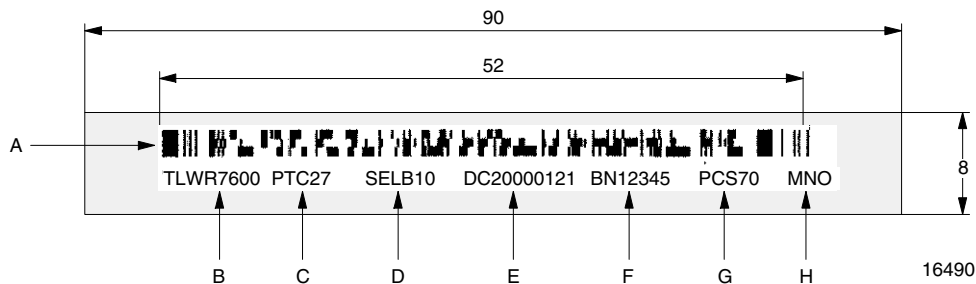


**LABEL OF FAN FOLD BOX** (example)



- A. Type of component
- B. PTC = manufacturing plant
- C. SEL - selection code (bin):  
e.g.: K2 = code for luminous intensity group  
4 = code for color group
- D. Batch/date code year/week
- E. Total quantity
- F. Company code
- G. Code for lead (Pb)-free classification (e3)

**EXAMPLE FOR TELUX TUBE LABEL DIMENSIONS** in millimeters



- A. Bar code
- B. Type of component
- C. Manufacturing plant
- D. SEL - selection code (bin):  
digit 1 - code for luminous flux group  
digit 2 - code for dominant wavelength group  
digit 3 - code for forward voltage group
- E. Date code
- F. Batch no.
- G. Total quantity
- H. Company code

**TUBE WITH BAR CODE LABEL DIMENSIONS** in millimeters

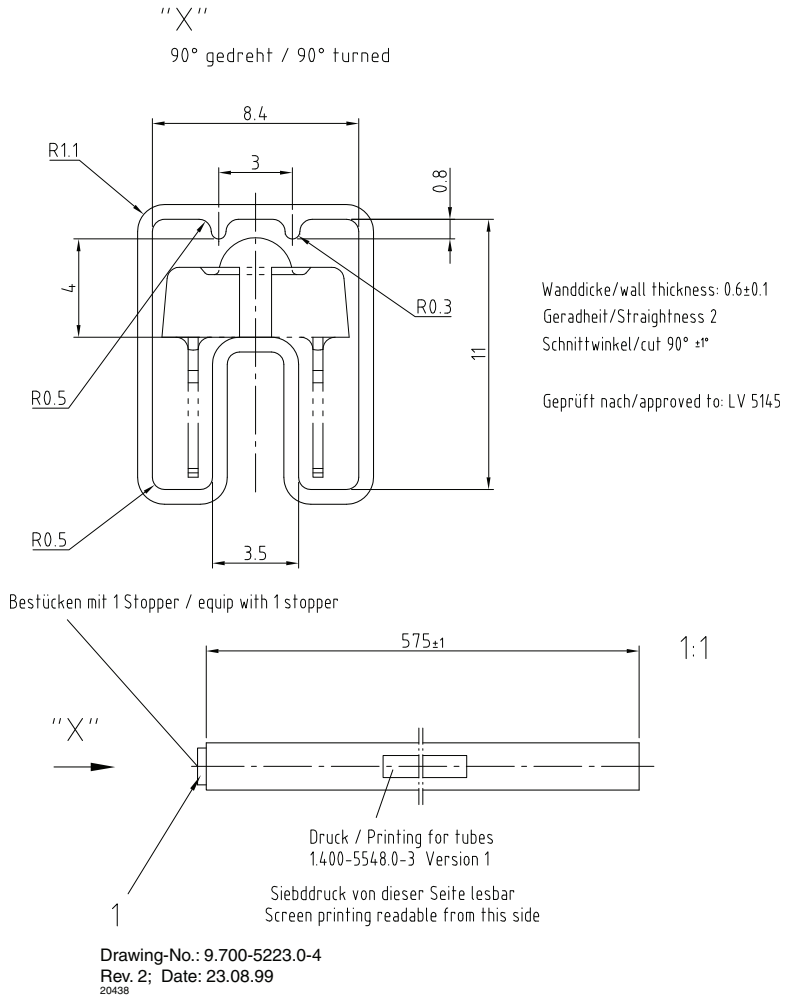


Fig. 6 - Drawing Proportions not Scaled

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