# **VLWY9930**



# www.vishay.com

# **TELUX LED**

## **FEATURES**

- High luminous flux
- Supreme heat dissipation: R<sub>thJP</sub> is 90 K/W
- High operating temperature:  $T_{amb} = -40 \ ^{\circ}C \ to +110 \ ^{\circ}C$
- Meets SAE and ECE color requirements for the automobile industry for color red
- · Packed in tubes for automuioatic 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 gualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

212

125

-40 to +110

-40 to +110

260

200

90

## APPLICATIONS

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

 $P_V$ 

Ti

T<sub>amb</sub>

T<sub>stg</sub>

 $T_{sd}$ 

 $R_{thJA}$ 

R<sub>thJP</sub>

PARTS TABLE LUMINOUS FLUX WAVELENGTH FORWARD VOLTAGE at I<sub>F</sub> at I<sub>F</sub> at I<sub>F</sub> COLOR (mlm) (nm) (V) TECHNOLOGY PART (mA) (mA) (mA) MIN. TYP. MAX. MIN. TYP. MAX. MIN. TYP. MAX. VLWY9930 AllnGaP on Si Yellow 4000 8500 12 200 70 585 592 597 70 1.83 2.2 3.03 70

ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified) VLWY9930				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage <sup>(1)</sup>		V <sub>R</sub>	10	V
DC forward current	T <sub>amb</sub> ≤ 85 °C	١ <sub>F</sub>	70	mA
Surge forward current	t <sub>p</sub> ≤ 10 μs	I <sub>FSM</sub>	0.1	А

 $t \le 5$  s, 1.5 mm from body preheat

temperature 100 °C / 30 s

With anode heatsink of 70 mm<sup>2</sup>

Rev. 1.9, 04-Jul-2022
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Note

Power dissipation

Junction temperature

Soldering temperature

Operating temperature range

Thermal resistance junction to ambient

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

Thermal resistance junction to pin

Storage temperature range

mW °C

°C

°C

°C

K/W

K/W





# DESCRIPTION

This TELUX device 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 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 homogeneous light appearance in application.

## PRODUCT GROUP AND PACKAGE DATA

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

For technical questions, contact: <u>LED@vishay.com</u>				
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RoHS COMPLIANT GREEN



e4

# VLWY9930



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<b>OPTICAL AND ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25$ °C, unless otherwise specified) <b>VLWY9930, YELLOW</b>						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Total flux	$I_F = 70 \text{ mA}, R_{thJA} = 200 \text{ K/W}$	φv	4000	8500	12 200	mlm
Luminous intensity/total flux	I <sub>F</sub> = 70 mA, R <sub>thJA</sub> = 200 K/W	Ι <sub>ν</sub> /φ <sub>ν</sub>	-	0.7	-	mcd/mlm
Dominant wavelength	$I_F = 70 \text{ mA}, R_{thJA} = 200 \text{ K/W}$	λ <sub>d</sub>	585	592	597	nm
Peak wavelength	$I_F = 70 \text{ mA}, R_{thJA} = 200 \text{ K/W}$	λρ	-	595	-	nm
Angle of half intensity	$I_F = 70 \text{ mA}, R_{thJA} = 200 \text{ K/W}$	φ	-	± 45	-	o
Total included angle	90 % of total flux captured	Φ0.9 V	-	100	-	0
Forward voltage	$I_F = 70 \text{ mA}, R_{thJA} = 200 \text{ K/W}$	VF	1.83	2.2	3.03	V
Reverse voltage		V <sub>R</sub>	10	20	-	V
Temperature coefficient of $\lambda_{dom}$	I <sub>F</sub> = 70 mA	$T_C \lambda_{dom}$	-	0.1	-	nm/K
Temperature coefficient of V <sub>F</sub>	$I_F = 70$ mA, T > -25 °C	T <sub>CVF</sub>	-	-2	-	mV/K

LUMINOUS FLUX CLASSIFICATION			
GROUP	LUMINOUS FLUX (mlm)		
	MIN.	MAX.	
Н	4000	6100	
I	5000	7300	
К	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

COLOR CLASSIFICATION			
GROUP	DOMINANT WAVELENGTH (nm)		
GROOP	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

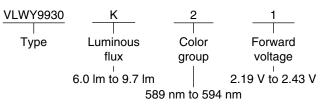
FORWARD VOLTAGE CLASSIFICATION			
GROUP	FORWARD VOLTAGE (V)		
	MIN.	MAX.	
Y	1.83	2.07	
Z	1.95	2.19	
0	2.07	2.31	
1	2.19	2.43	
2	2.31	2.55	
3	2.43	2.67	
4	2.55	2.79	
5	2.67	2.91	
6	2.79	3.03	
	•		

#### Note

Voltages are tested at a current pulse duration of 1 ms

### MARKING EXAMPLE FOR SELECTION CODE ON LABEL

Selection code: K21





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# **TYPICAL CHARACTERISTICS** ( $T_{amb} = 25$ °C, unless otherwise specified)

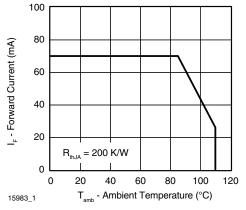


Fig. 1 - Forward Current vs. Ambient Temperature

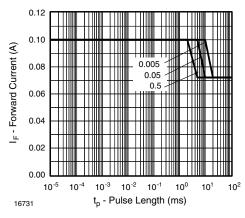


Fig. 2 - Forward Current vs. Pulse Length

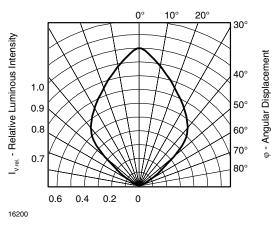


Fig. 3 - Relative Luminous Intensity vs. Angular Displacement

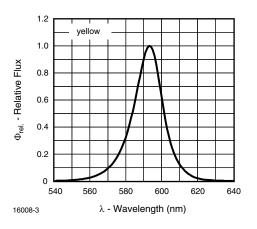


Fig. 4 - Relative Flux vs. Wavelength

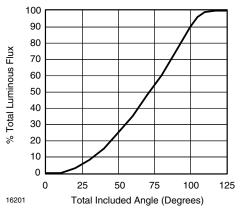


Fig. 5 - Percentage Total Luminous Flux vs. Total Included Angle for 90° Emission Angle

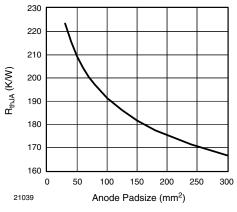


Fig. 6 - Thermal Resistance Junction Ambient vs. Anode Padsize

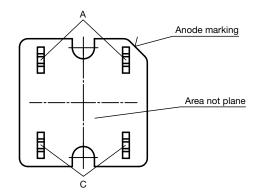
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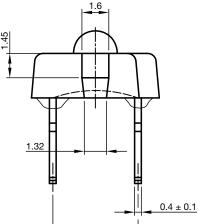


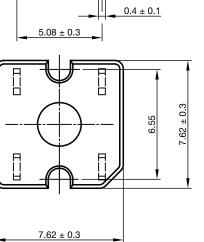
5°

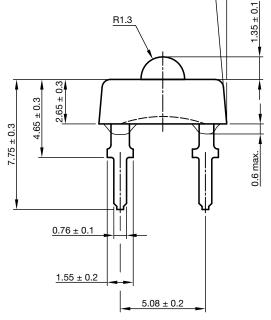
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## **PACKAGE DIMENSIONS** in millimeters





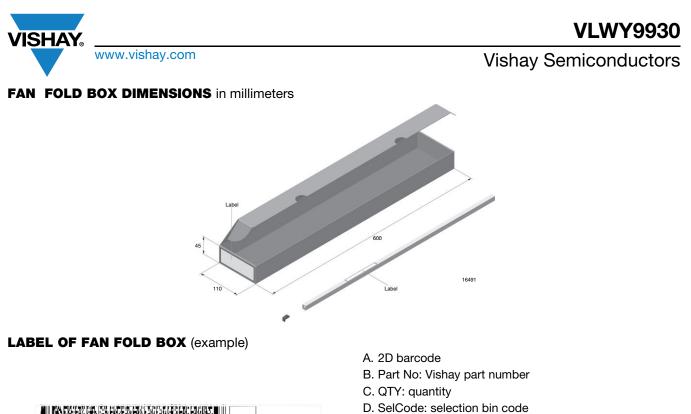




technical drawings according to DIN specifications

Drawing-No.: 6.544-5392.01-4 Issue: 3; 27.02.15

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- E. Country of origin
- F. PTC: production plant code
- G. Termination finish
- H. Region code
- I. Serial#: serial number
- K. Batch number: year, week, country code, plant code
- L. SL: storage location
- M. Environmental symbols: RoHS, (Pb)-free, lead halogen-free
- N. Lot numbers

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

2022260620 2022262A 15,2022262H 12,202262H 12,202262H 12,202260H28 11,20400 11,2040 11

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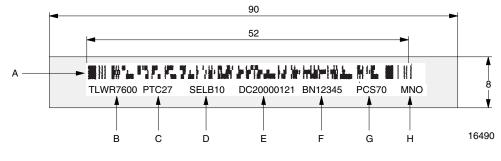
(14) H/F

M

Lot1: 4 Lot2: 4 Batch: 4 Region Serial # Operato

(04)

Ġ Ĥ



- A. Bar code
- B. Type of component

artNo: VLWY9930 QTY: 2100 SelCade: K21 Vigin Thailand TC: 28

QTY:

F

- 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

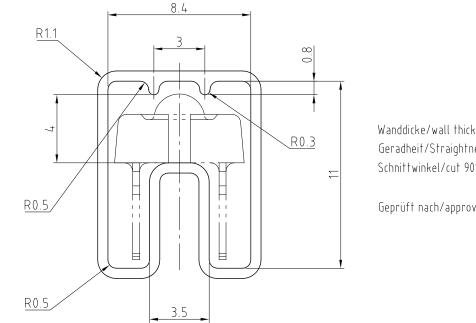
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## TUBE WITH BAR CODE LABEL DIMENSIONS in millimeters

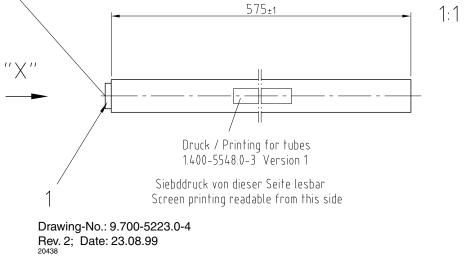




Wanddicke/wall thickness: 0.6±0.1 Geradheit/Straightness 2 Schnittwinkel/cut 90° ±1°

Geprüft nach/approved to: LV 5145

## Bestücken mit 1 Stopper / equip with 1 stopper



Drawing Proportions not Scaled



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