WINGER® WEBBL01-IM LED 3 mm blue, Flat Top, white diffused, max. 580 mcd, 120°



Item number	304473200
Type	WEBBL01-IM
Brand	WINGER®
Package	3 mm Flat Top, white diffused
Emitted colour	blue, typ. 465 nm
Luminous intensity	max. 580 mcd
Viewing angle	120°

The WINGER® WEBBL01-IM is a leaded 3 mm Flat Top LED with a white diffused package and a flat emitting face, emitting blue light (typ. 465 nm) with up to 580 mcd at a wide 120° viewing angle.

The flat-top, diffused package produces a wide, glare-reduced beam and is suited to backlighting, indicator lighting, model making and similar applications.

1 Optical and Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Forward voltage [1]	V_F	3.0	3.2	3.4	V	I_F = 20 mA
Viewing angle (50 % power angle)	2θ½		120		°	I_F = 20 mA
Luminous intensity	I_V	300 [2]		580	mcd	I_F = 20 mA
Dominant wavelength	λ_D		465		nm	I_F = 20 mA
Recommended forward current	$I_{F(rec)}$			20	mA	
Reverse current	I_R			20 [1]	µA	V_R = 5 V

[1] Value or min./max. range according to the previous datasheet version (not stated on the current shop page, or typ. value taken from the shop and range from the previous datasheet).
[2] Min. value 300 mcd according to the previous datasheet version.
Typical values at T_A = 25 °C unless otherwise stated. Measurement tolerances according to the previous datasheet version: forward voltage ±0.1 V; luminous intensity ±15 %; viewing angle ±15 %; peak wavelength ±2.0 nm.
It is strongly recommended to limit the die temperature to 55 °C.

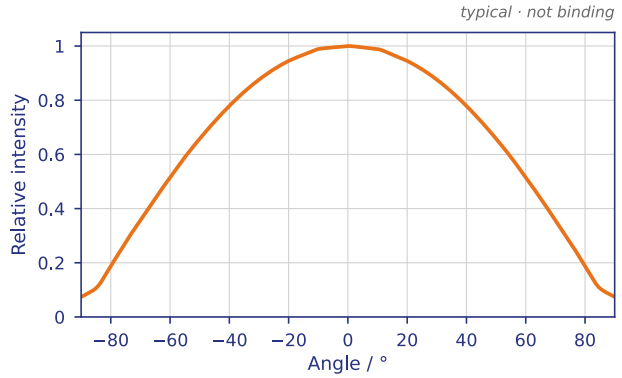
2 Absolute Maximum Ratings

Parameter	Symbol	Rating
Forward current	I_F	30 mA [1]
Peak forward current (duty cycle 1/10, pulse width 0.1 ms)	I_{FP}	100 mA [1]
Reverse voltage	V_R	5 V [1]
Max. power dissipation	P_D	80 mW
Operating temperature range	T_{OPR}	−20 … +50 °C [1]
Storage temperature range	T_{STG}	−40 … +80 °C [1]
Lead soldering temperature	T_{SOL}	260 °C for max. 5 s [1]

[1] Value or min./max. range according to the previous datasheet version (not stated on the current shop page, or typ. value taken from the shop and range from the previous datasheet).
Absolute maximum ratings at T_A = 25 °C. I_F, I_{FP}, V_R, T_{OPR}, T_{STG} and T_{SOL} according to the previous datasheet version (not listed in the shop technical data). P_D as stated in the shop (and in the previous datasheet).

3 Characteristic Curves

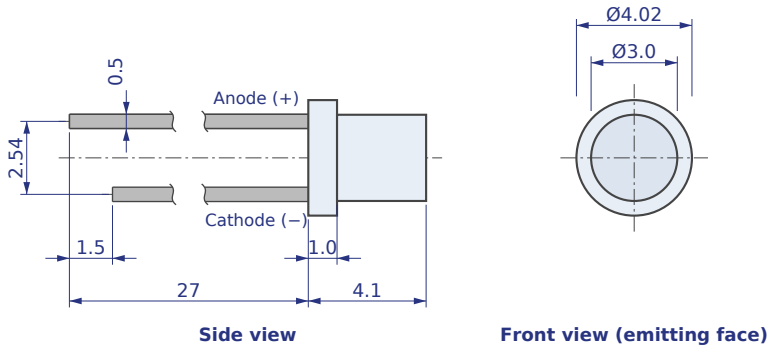
Radiation characteristic



Typical radiation pattern taken over from the previous datasheet version (read graphically, approximate values) – not binding; the table values apply. The 50 % intensity is at typ. 61° from the axis (2θ½ ≈ 122°), consistent with the table value of 120°.

4 Mechanical Data

Parameter	Value
Package	3 mm Flat Top, through-hole (THT), white diffused package, flat emitting face
Body diameter	Ø 3.0 mm
Flange diameter	Ø 4.02 mm
Overall body height (seating plane to flat emitting face)	4.1 mm
Height from flange front face to flat emitting face	3.1 mm
Flange thickness	1.0 mm
Lead spacing / lead cross-section	2.54 mm / 0.5 mm × 0.5 mm
Lead length	27 mm (anode; cathode 1.5 mm shorter)
Polarity	long lead = anode (+); short lead = cathode (−)
General tolerance	±0.25 mm



Side view and front view of the emitting face (schematic, not to scale). Long lead = anode, short lead = cathode. Leads shown shortened.

Dimensions in mm, taken from the product-page drawing (shop file 3mm_FlatTop_Kurz_schem.gif). The previous datasheet version shows the same dimensions. General tolerance ±0.25 mm according to the previous datasheet version. Height from the flange front face to the flat emitting face is 3.1 mm (= 4.1 mm overall height minus 1.0 mm flange thickness, both dimensioned on the shop drawing).

5 Ordering Information and Packaging

Parameter	Value
Item number	304473200
Type	WEBBL01-IM
Packaging	loose in bag
Packaging unit	1,000 pcs per bag

6 Handling and Application Notes

- Always operate the LED with a current-limiting series resistor or a constant-current source – never connect it directly to a voltage source. Series resistor: $R = (U_{supply} - V_F) / I_F$.
- When connecting LEDs in parallel, use a separate series resistor for each LED or string.
- Do not exceed the absolute maximum ratings, not even briefly; avoid reverse voltage.
- Bend the leads only before soldering and at room temperature, never directly at the body (typ. at least 3 mm [4] from the body). Hold the lead firmly between body and bending point; never use the body as a fulcrum.
- Do not apply mechanical stress to the leads or the lens while the LED is hot (during and directly after soldering). Let it cool down to room temperature first.
- Clean with isopropyl alcohol only if necessary; do not use aggressive solvents. Ultrasonic cleaning only after prior qualification.
- Do not look directly into the LED at short distance for a longer period (glare).
- Protect the LED against current surges and overvoltage; limit the die temperature to 55 °C (strongly recommended).

[4] Typical value for this LED type; not individually measured / subject to confirmation.

7 ESD Protection

Parameter	Value
ESD withstand voltage (HBM)	1,000 V [4] (HBM, ANSI/ESDA/JEDEC JS-001)

- LEDs are electrostatic-sensitive devices (ESD). Electrostatic discharge or voltage surges can damage the LED immediately or reduce its service life without visible signs.
- Handle and process only in an ESD protected area (EPA) in accordance with IEC 61340-5-1: grounded work surfaces, equipment and soldering irons, wrist straps or ESD gloves, ESD-safe packaging and transport containers.
- Keep the LEDs in their ESD-safe packaging until processing.

[4] Typical value for this LED type; not individually measured / subject to confirmation.

8 Soldering Instructions

Parameter	Value
Wave soldering	max. 260 °C, max. 5 s
Preheating (wave soldering)	max. 100 °C, max. 60 s [4]
Hand soldering	max. 350 °C, max. 3 s, at least 3 mm from the body, once only [4]

- Recommended methods: wave soldering or hand soldering. Through-hole LEDs are not intended for reflow soldering unless explicitly stated.
- Solder only once if possible and keep the specified minimum distance between soldering point and body. Never dip the body into the solder.
- Hand soldering: use a temperature-controlled, grounded soldering iron; do not touch the body with the tip.
- Shorten the leads preferably after soldering and without transferring stress to the body.

[4] Typical value for this LED type; not individually measured / subject to confirmation.

9 Storage

Parameter	Value
Storage temperature	−40 … +80 °C
Recommended storage conditions	≤ 30 °C, ≤ 60 % RH, in original packaging [4]
Shelf life	12 months from delivery in unopened original packaging [4]

- Store in the original packaging in a dry, clean environment free of corrosive gases. Avoid condensation and rapid temperature changes.
- High humidity or sulphur-containing atmospheres can discolour the lead surface and impair solderability; process the LEDs promptly.
- Store cool and dry; protect from direct sunlight and heat; keep away from ignition sources.

[4] Typical value for this LED type; not individually measured / subject to confirmation.

10 Environmental Compliance

Parameter	Value
RoHS (EU) 2011/65/EU incl. (EU) 2015/863	compliant (Directive 2011/65/EU) [3]
REACH (EC) 1907/2006	no SVHC of the candidate list above 0.1 % (w/w) known [4]

Declarations of conformity are available on request.
Dispose of as electronic waste in accordance with local regulations.

[3] RoHS compliance according to the previous datasheet version (RoHS marking on that document).
[4] Typical value for this LED type; not individually measured / subject to confirmation.

11 Warranty and Application Limits

- Perform an acceptance inspection on arrival of the goods; return defective items stating the defect and quantity.
- Integration of the LEDs into the application and verification of service life and other qualities in practical use shall be carried out by the user.
- Do not use the LEDs in applications requiring higher reliability and safety where failure or malfunction could endanger life or health. The seller assumes no liability for claims or damages resulting from use contrary to the intended purpose or without written consent.
- The seller assumes no responsibility for damage or defects caused by operation at currents exceeding the absolute maximum ratings; these are not covered by warranty.

Values marked [4] are typical values for this LED type and have not been individually measured for this item; they are subject to confirmation. Please contact us for binding values: info@led1.de · +49 340 8508260.

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