WINGER® WEBUV02-CS LED 3 mm UV (blacklight), 60 mW/sr

Item number	34040000
Type	WEBUV02-CS
Brand	WINGER®
Package	3 mm, water clear
Emitted colour	UV (blacklight), typ. 405 nm
Radiant intensity	max. 60 mW/sr
Viewing angle	20°



The WINGER® WEBUV02-CS is a leaded 3 mm UV (blacklight) LED in a water-clear package, with a peak wavelength typ. 405 nm and a radiant intensity of typ. / max. 60 mW/sr at a 20° viewing angle.

It is suited to blacklight and fluorescence applications, inspection and effect lighting. UV radiation can be harmful to eyes and skin; see the handling notes.

1 Optical and Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Forward voltage [1]	V_F	3.0	3.2	3.6	V	I_F = 20 mA
Viewing angle (50 % power angle)	2θ½		20		°	I_F = 20 mA
Radiant intensity	I_e		60 [3]	60	mW/sr	I_F = 20 mA
Peak wavelength [2]	λ_P	400	405	410	nm	I_F = 20 mA
Recommended forward current	$I_{F(rec)}$			20	mA	
Reverse current	I_R			10	µA	V_R = 5 V

[1] Min./max. range according to the previous datasheet version.
[2] Typical value 405 nm according to the product page and the previous datasheet version. Min./max. range 400–410 nm according to the previous datasheet version. The shop PDF filename uses 400 nm (the minimum of that range).
[3] Typical value 60 mW/sr according to the previous datasheet version; the product page states a maximum of 60 mW/sr (previous datasheet version: max. 70 mW/sr).
Typical values at T_A = 25 °C unless otherwise stated. Measurement tolerances: forward voltage ±0.1 V; radiant intensity ±15 %; viewing angle ±15 %; wavelength ±2.0 nm.
It is strongly recommended to limit the die temperature to 55 °C.

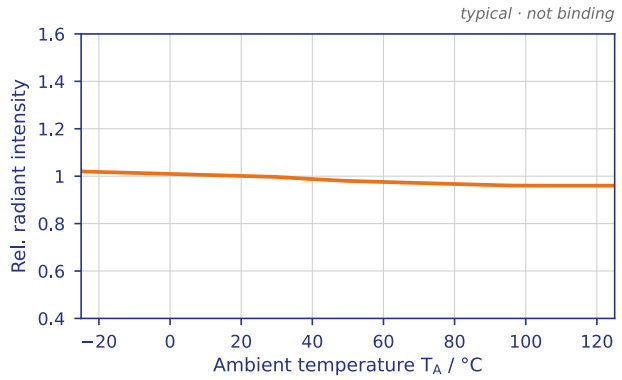
2 Absolute Maximum Ratings

Parameter	Symbol	Rating
Forward current	I_F	20 mA
Peak forward current (duty cycle 1/10, pulse width 0.1 ms)	I_{FP}	80 mA
Reverse voltage	V_R	5 V
Max. power dissipation	P_D	60 mW
Operating temperature range	T_{OPR}	−10 ... +50 °C
Storage temperature range	T_{STG}	−20 ... +60 °C
Lead soldering temperature	T_{SOL}	260 °C for max. 5 s, at least 3 mm from the body

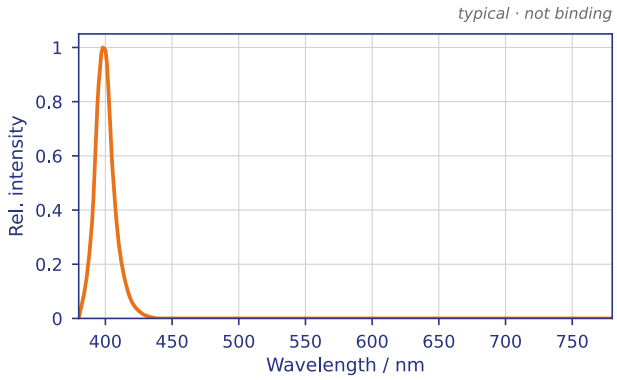
Absolute maximum ratings at T_A = 25 °C.

3 Characteristic Curves

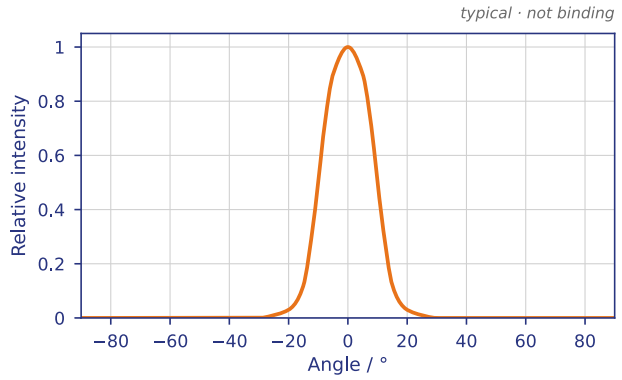
Rel. radiant intensity vs. ambient temperature



Relative spectral emission



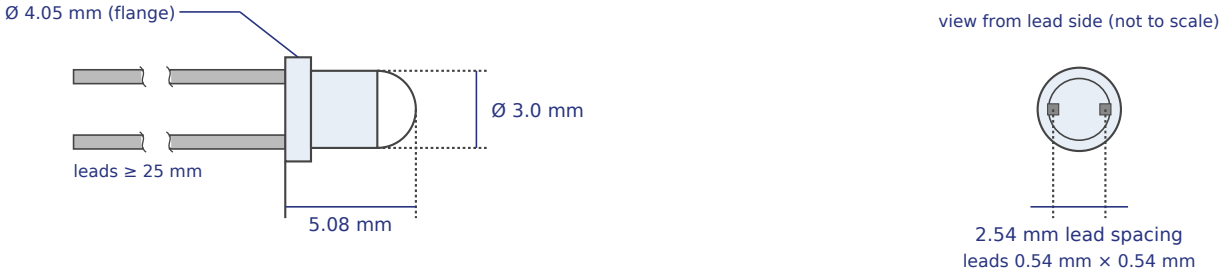
Radiation characteristic



Typical curves taken over from the previous datasheet version (read graphically, approximate values) – not binding; the table values apply. Spectrum normalised to its maximum (peak approx. 398–400 nm; the table typical value is 405 nm).

4 Mechanical Data

Parameter	Value
Package	3 mm round, through-hole (THT), water clear
Body diameter	Ø 3.0 mm
Flange diameter	Ø 4.05 mm
Overall body height (seating plane to lens tip)	5.08 mm
Height from flange front face to lens tip	4.08 mm
Lead spacing / lead cross-section	2.54 mm / 0.54 mm × 0.54 mm
Lead length	≥ 25 mm (anode; cathode 1.5 mm shorter)
Polarity	long lead = anode (+); short lead and flat on flange = cathode (−)
General tolerance	±0.25 mm



Side view (schematic, not to scale). Long lead = anode, flat on flange = cathode side.

Dimensions in mm, taken from the product-page drawing (shop). The previous datasheet version stated flange Ø 3.8 mm, overall body height 6.3 mm (5.3 mm from the flange front face to the lens tip), lead length 28 mm and lead cross-section 0.5 mm × 0.5 mm. General tolerance ±0.25 mm according to the previous datasheet version.

5 Ordering Information and Packaging

Parameter	Value
Item number	34040000
Type	WEBUV02-CS
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).
- UV radiation: protect eyes and skin. Do not look directly into the operating LED; use suitable eye and skin protection. [4]

[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, at least 3 mm from the body
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	−20 … +60 °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 [4]
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.

[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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