## Bar Light Infrared, 500 mm

# LBAI501

Part Number



- Create patented curve effect to reduce LED hot spots
- Flexibility: expand the beam angle with an Angle Changer
- No external control required
- Overdrive

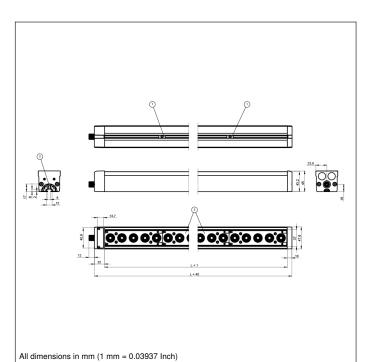
wenglor bar lights from the LBA series can be configured for almost any application. The direct lights provide a perfect balance between brightness and even light distribution, so the luminaires can be used at both small and large working distances. The bar light can be positioned around the product to create lighting effects such as bright field, low angle of incidence, dark field and dome lighting. It can also be used for some line scan applications. The LBA bar lights can be operated in continuous mode with high intensity or synchronized with the Machine Vision Camera in strobe mode with increased luminosity (overdrive). When the LBA bar lights are combined with the ZBAG angle changers, the beam angle can then be increased and the lighting can be designed flexibly and controlled via the visual field.

#### **Technical Data**

| Optical Data         Light Source         Infrared Light           Wavelength         850 nm           Risk Group (EN 62471)         1           Beam angle         ± 7 °           Infrared light output         383 W/m²           Measuring point distance         200 mm           Compatible with         Angle Changer           Electrical Data         21,626,4 V DC           Supply Voltage         21,626,4 V DC           Power         28,8 W           Peak power         115,2 W           Current Consumption Continuous Mode (Ub = 24 V)         1,2 A           Current consumption strobe mode (Ub = 24 V)         4,8 A           Flash Duration         30 ms           Duty Cycle         < 0,2           Rise time         15 μs           Fall time         10 μs           Input signal         PNP/NPN           Temperature Range         040 °C           Storage temperature         -2060 °C           Short Circuit Protection         yes           Reverse Polarity Protection         yes           Overload Protection         yes           Protection Class         III           Dimming         010 V ≜ 10030% <th< th=""><th>Technical Data</th><th></th></th<>  | Technical Data                                  |                      |  |  |
|--|---|----------------------|--|--|
| Wavelength       850 nm         Risk Group (EN 62471)       1         Beam angle       ± 7 °         Infrared light output       383 W/m²         Measuring point distance       200 mm         Compatible with       Angle Changer         Electrical Data       21,626,4 V DC         Supply Voltage       21,626,4 V DC         Power       28,8 W         Peak power       115,2 W         Current Consumption Continuous Mode (Ub = 24 V)       1,2 A         Current consumption strobe mode (Ub = 24 V)       4,8 A         Flash Duration       30 ms         Duty Cycle       < 0,2         Rise time       15 μs         Fall time       10 μs         Input signal       PNP/NPN         Temperature Range       040 °C         Storage temperature       -2060 °C         Short Circuit Protection       yes         Reverse Polarity Protection       yes         Overload Protection       yes         Protection Class       III         Dimming       010 V ≜ 10030%         Overdrive       yes         Mechanical Data       Luminous Field Length (L)       500 mm         Housing Material   | Optical Data                                    |                      |  |  |
| Risk Group (EN 62471)       1         Beam angle       ± 7 °         Infrared light output       383 W/m²         Measuring point distance       200 mm         Compatible with       Angle Changer         Electrical Data       Supply Voltage         Power       28,8 W         Peak power       115,2 W         Current Consumption Continuous Mode (Ub = 24 V)       1,2 A         Current consumption strobe mode (Ub = 24 V)       4,8 A         Flash Duration       30 ms         Duty Cycle       < 0,2   | Light Source                                    | Infrared Light       |  |  |
| Beam angle       ± 7 °         Infrared light output       383 W/m²         Measuring point distance       200 mm         Compatible with       Angle Changer         Electrical Data         Supply Voltage       21,626,4 V DC         Power       28,8 W         Peak power       115,2 W         Current Consumption Continuous Mode (Ub = 24 V)       1,2 A         Current consumption strobe mode (Ub = 24 V)       4,8 A         Flash Duration       30 ms         Duty Cycle       < 0,2   | Wavelength                                      | 850 nm               |  |  |
| Infrared light output         383 W/m²           Measuring point distance         200 mm           Compatible with         Angle Changer           Electrical Data         21,626,4 V DC           Supply Voltage         21,626,4 V DC           Power         28,8 W           Peak power         115,2 W           Current Consumption Continuous Mode (Ub = 24 V)         1,2 A           Current consumption strobe mode (Ub = 24 V)         4,8 A           Flash Duration         30 ms           Duty Cycle         < 0,2  | Risk Group (EN 62471)                           | 1                    |  |  |
| Measuring point distance       200 mm         Compatible with       Angle Changer         Electrical Data       21,626,4 V DC         Supply Voltage       21,626,4 V DC         Power       28,8 W         Peak power       115,2 W         Current Consumption Continuous Mode (Ub = 24 V)       1,2 A         Current consumption strobe mode (Ub = 24 V)       4,8 A         Flash Duration       30 ms         Duty Cycle       < 0,2   | Beam angle                                      | ±7°                  |  |  |
| Compatible with  Electrical Data  Supply Voltage Power Peak power Peak power Current Consumption Continuous Mode (Ub = 24 V) Current consumption strobe mode (Ub = 24 V) Flash Duration Supply Voltage  Power  Current Consumption Strobe mode (Ub = 24 V) Flash Duration  Duty Cycle Rise time Fall time Power  Input signal PNP/NPN  Temperature Range PNP/NPN  Temperature Range Power  Storage temperature Powerse Polarity Protection Protection Class Frotection Frotection Class Frotection Frotection Class Frotection Frotection Class Frotection Frotection Frotection Frotection Frotection Frotection Frotection Frotection Diagram No. Footnorection Diagram No. Footnorection Diagram No. Footnorection Panel No. Footnorection Control Panel No. Footnorection Class Panel No. Footnorection Panel No. Footnorecti | Infrared light output                           | 383 W/m <sup>2</sup> |  |  |
| Electrical Data           Supply Voltage         21,626,4 ∨ DC           Power         28,8 W           Peak power         115,2 W           Current Consumption Continuous Mode (Ub = 24 V)         1,2 A           Current consumption strobe mode (Ub = 24 V)         4,8 A           Flash Duration         30 ms           Duty Cycle         < 0,2   | Measuring point distance                        | 200 mm               |  |  |
| Supply Voltage         21,626,4 V DC           Power         28,8 W           Peak power         115,2 W           Current Consumption Continuous Mode (Ub = 24 V)         1,2 A           Current consumption strobe mode (Ub = 24 V)         4,8 A           Flash Duration         30 ms           Duty Cycle         < 0,2   | Compatible with                                 | Angle Changer        |  |  |
| Power28,8 WPeak power115,2 WCurrent Consumption Continuous Mode (Ub = 24 V)1,2 ACurrent consumption strobe mode (Ub = 24 V)4,8 AFlash Duration30 msDuty Cycle< 0,2   | Electrical Data                                 |                      |  |  |
| Peak power  Current Consumption Continuous Mode (Ub = 24 V)  1,2 A  Current consumption strobe mode (Ub = 24 V)  Flash Duration  Duty Cycle  Rise time  15 $\mu$ s  Fall time  10 $\mu$ s  Input signal  PNP/NPN  Temperature Range  3040 °C  Storage temperature  4040 °C  Storage temperature  Faverse Polarity Protection  Ves  Ves  Verload Protection  Ves  Protection Class  III  Dimming  010 V $\triangleq$ 10030%  Overdrive  Mechanical Data  Luminous Field Length (L)  Housing Material  Degree of Protection  Plastic, PMMA  Connection  Max. cable length  Function  Operating modes  Continuous, Strobe  Control Panel No.  | Supply Voltage                                  | 21,626,4 V DC        |  |  |
| Current Consumption Continuous Mode (Ub = 24 V) 1,2 A  Current consumption strobe mode (Ub = 24 V) 4,8 A  Flash Duration 30 ms  Duty Cycle $< 0,2$ Rise time $15 \mu s$ Fall time $10 \mu s$ Input signal PNP/NPN  Temperature Range $040  ^{\circ}C$ Storage temperature $-2060  ^{\circ}C$ Short Circuit Protection yes  Reverse Polarity Protection yes  Protection Class III  Dimming $010  V \triangleq 10030\%$ Overdrive yes  Mechanical Data  Luminous Field Length (L) 500 mm  Aluminum, anodised Degree of Protection IP65  Optic Cover Plastic, PMMA  Connection Diagram No.  Control Panel No.   | Power   | 28,8 W               |  |  |
| Current consumption strobe mode (Ub = 24 V) 4,8 A  Flash Duration 30 ms  Duty Cycle $< 0,2$ Rise time 15 $\mu$ s  Fall time 10 $\mu$ s  Input signal PNP/NPN  Temperature Range 040 °C  Storage temperature -2060 °C  Short Circuit Protection yes  Reverse Polarity Protection yes  Overload Protection yes  Protection Class III  Dimming 010 V $\triangleq$ 10030%  Overdrive yes  Mechanical Data  Luminous Field Length (L) 500 mm  Housing Material Aluminum, anodised Degree of Protection IP65  Optic Cover Plastic, PMMA  Connection M12 × 1; 5-pin  Max. cable length 150 m  Function  Operating modes Continuous, Strobe  Connection Diagram No.  O07  Control Panel No.  | Peak power                                      | 115,2 W              |  |  |
| Flash Duration 30 ms  Duty Cycle $< 0,2$ Rise time $15 \mu s$ Fall time $10 \mu s$ Input signal PNP/NPN  Temperature Range $040  ^{\circ}C$ Storage temperature $-2060  ^{\circ}C$ Short Circuit Protection yes Reverse Polarity Protection yes Overload Protection yes Protection Class III Dimming $010  V \triangleq 10030\%$ Overdrive yes  Mechanical Data Luminous Field Length (L) 500 mm  Housing Material Aluminum, anodised Degree of Protection IP65 Optic Cover Plastic, PMMA Connection M12 $\times$ 1; 5-pin Max. cable length $150  m$ Function  Operating modes Continuous, Strobe  Connection Diagram No.  O07  Control Panel No.   | Current Consumption Continuous Mode (Ub = 24 V) | 1,2 A                |  |  |
| Duty Cycle $< 0,2$ Rise time $15 \ \mu s$ Fall time $10 \ \mu s$ Input signal PNP/NPN Temperature Range $040 \ ^{\circ}C$ Storage temperature $-2060 \ ^{\circ}C$ Short Circuit Protection yes Reverse Polarity Protection yes Overload Protection yes Protection Class III Dimming $010 \ V \triangleq 10030\%$ Overdrive yes  Mechanical Data Luminous Field Length (L) $500 \ mm$ Housing Material Aluminum, anodised Degree of Protection IP65 Optic Cover Plastic, PMMA Connection M12 $\times$ 1; 5-pin Max. cable length $150 \ m$ Function Operating modes Continuous, Strobe Connection Diagram No.  O07 Control Panel No.  | Current consumption strobe mode (Ub = 24 V)     | 4,8 A                |  |  |
| Rise time $15 \mu \text{s}$ Fall time $10 \mu \text{s}$ Input signal $PNP/NPN$ Temperature Range $040 ^{\circ}\text{C}$ Storage temperature $-2060 ^{\circ}\text{C}$ Short Circuit Protection $yes$ Reverse Polarity Protection $yes$ Overload Protection $yes$ III $010 \text{V} \triangleq 10030\%$ Overdrive $yes$ $\frac{\text{Mechanical Data}}{\text{Luminous Field Length (L)}}$ 500 mm $\text{Housing Material}$ Aluminum, anodised $\text{Degree of Protection}}$ IP65 $\text{Optic Cover}$ Plastic, PMMA $\text{Connection}$ M12 × 1; 5-pin $\text{Max. cable lenght}}$ 150 m $\frac{\text{Function}}{\text{Connection Diagram No.}}$ Control Panel No.  | Flash Duration                                  | 30 ms                |  |  |
| Fall time $10  \mu s$ Input signal $PNP/NPN$ Temperature Range $040  ^{\circ}C$ Storage temperature $-2060  ^{\circ}C$ Short Circuit Protection $yes$ Reverse Polarity Protection $yes$ Overload Protection $yes$ III Dimming $010  V \triangleq 10030\%$ Overdrive $yes$ Mechanical Data Luminous Field Length (L) $yes$ Soom Material Aluminum, anodised Degree of Protection $yes$ Plastic, PMMA Connection $yes$ Plastic, PMMA Connection $yes$ Continuous, Strobe Connection Diagram No.  | Duty Cycle                                      | < 0,2                |  |  |
| Input signal  Temperature Range  040 °C  Storage temperature  -2060 °C  Short Circuit Protection  Reverse Polarity Protection  yes  Overload Protection  Protection Class  III  Dimming  010 V ≜ 10030%  Overdrive  yes  Mechanical Data  Luminous Field Length (L)  Housing Material  Degree of Protection  Optic Cover  Plastic, PMMA  Connection  M12 × 1; 5-pin  Max. cable lenght  Function  Operating modes  Continuous, Strobe  Connection Diagram No.  Control Panel No.  T17  | Rise time                                       | 15 <i>μ</i> s        |  |  |
| Temperature Range  Storage temperature  Storage temperature  Short Circuit Protection  Reverse Polarity Protection  Overload Protection  Protection Class  III  Dimming  O10 V ≜ 10030%  Overdrive  Mechanical Data  Luminous Field Length (L)  Housing Material  Degree of Protection  Optic Cover  Plastic, PMMA  Connection  M12 × 1; 5-pin  Max. cable lenght  Function  Operating modes  Continuous, Strobe  Connection Diagram No.  Control Panel No.  1-2060 °C  2060 °C  3060 °C  4060  | Fall time                                       | 10 μs                |  |  |
| Storage temperature  Short Circuit Protection  Reverse Polarity Protection  Overload Protection  Protection Class  III  Dimming  Owerdrive  Mechanical Data  Luminous Field Length (L)  Housing Material  Degree of Protection  Optic Cover  Plastic, PMMA  Connection  M12 × 1; 5-pin  Max. cable length  Function  Operating modes  Control Panel No.  -2060 °C  yes  yes  Mechanical yes  III  500 mm  Aluminum, anodised  IP65  Plastic, PMMA  150 m  Function  Operating modes  Continuous, Strobe  | Input signal                                    | PNP/NPN              |  |  |
| Short Circuit Protection  Reverse Polarity Protection  Overload Protection  Protection Class  III  Dimming  O10 V ≜ 10030%  Overdrive  yes  Mechanical Data  Luminous Field Length (L)  Housing Material  Degree of Protection  Optic Cover  Plastic, PMMA  Connection  M12 × 1; 5-pin  Max. cable lenght  Function  Operating modes  Continuous, Strobe  Connection Diagram No.  Control Panel No.  | Temperature Range                               | 040 °C               |  |  |
| Reverse Polarity Protection  Overload Protection  Protection Class  III  Dimming  O10 V ≜ 10030%  Overdrive  yes  Mechanical Data  Luminous Field Length (L)  Housing Material  Degree of Protection  Optic Cover  Plastic, PMMA  Connection  M12 × 1; 5-pin  Max. cable lenght  Function  Operating modes  Continuous, Strobe  Connection Diagram No.  Control Panel No.  | Storage temperature                             | -2060 °C             |  |  |
| Overload Protection       yes         Protection Class       III         Dimming       010 V ≜ 10030%         Overdrive       yes         Mechanical Data         Luminous Field Length (L)       500 mm         Housing Material       Aluminum, anodised         Degree of Protection       IP65         Optic Cover       Plastic, PMMA         Connection       M12 × 1; 5-pin         Max. cable lenght       150 m         Function         Operating modes       Continuous, Strobe         Connection Diagram No.       007         Control Panel No.       117  | Short Circuit Protection                        | yes                  |  |  |
| Protection Class  Dimming  Dimming  O10 V ≜ 10030%  Overdrive  Mechanical Data  Luminous Field Length (L)  Housing Material  Degree of Protection  Optic Cover  Plastic, PMMA  Connection  M12 × 1; 5-pin  Max. cable length  Function  Operating modes  Continuous, Strobe  Connection Diagram No.  Control Panel No.   | Reverse Polarity Protection                     | yes                  |  |  |
| Dimming       010 V ≜ 10030%         Overdrive       yes         Mechanical Data   | Overload Protection                             | yes                  |  |  |
| Overdrive yes  Mechanical Data  Luminous Field Length (L) 500 mm  Housing Material Aluminum, anodised Degree of Protection IP65 Optic Cover Plastic, PMMA Connection M12 × 1; 5-pin Max. cable length 150 m  Function Operating modes Continuous, Strobe Connection Diagram No.  Control Panel No.   | Protection Class                                | III                  |  |  |
| Mechanical Data  Luminous Field Length (L) 500 mm  Housing Material Aluminum, anodised  Degree of Protection IP65  Optic Cover Plastic, PMMA  Connection M12 × 1; 5-pin  Max. cable length 150 m  Function  Operating modes Continuous, Strobe  Connection Diagram No.  Control Panel No.  | Dimming   | 010 V ≙ 10030%       |  |  |
| Luminous Field Length (L)  Housing Material  Degree of Protection  Optic Cover  Plastic, PMMA  Connection  M12 × 1; 5-pin  Max. cable length  Function  Operating modes  Connection Diagram No.  Control Panel No.   | Overdrive                                       | yes                  |  |  |
| Housing Material  Degree of Protection  IP65  Optic Cover  Plastic, PMMA  Connection  M12 × 1; 5-pin  Max. cable lenght  Function  Operating modes  Continuous, Strobe  Connection Diagram No.  Control Panel No.  | Mechanical Data                                 |                      |  |  |
| Degree of Protection IP65 Optic Cover Plastic, PMMA Connection M12 × 1; 5-pin Max. cable lenght 150 m  Function Operating modes Continuous, Strobe  Connection Diagram No. Control Panel No.   | Luminous Field Length (L)                       | 500 mm               |  |  |
| Optic Cover Plastic, PMMA Connection M12 × 1; 5-pin Max. cable lenght 150 m  Function Operating modes Continuous, Strobe  Connection Diagram No. Control Panel No.   | Housing Material                                | Aluminum, anodised   |  |  |
| Connection M12 × 1; 5-pin  Max. cable lenght 150 m  Function  Operating modes Continuous, Strobe  Connection Diagram No.  Control Panel No.  | Degree of Protection                            | IP65                 |  |  |
| Max. cable lenght 150 m  Function  Operating modes Continuous, Strobe  Connection Diagram No. 007  Control Panel No. T17   | Optic Cover                                     | Plastic, PMMA        |  |  |
| Function Operating modes Continuous, Strobe Connection Diagram No. Control Panel No.  T17  | Connection                                      | M12 × 1; 5-pin       |  |  |
| Operating modes Continuous, Strobe  Connection Diagram No.  Control Panel No.  T17   | Max. cable lenght                               | 150 m                |  |  |
| Connection Diagram No.  Control Panel No.  T17   | Function  |                      |  |  |
| Control Panel No.  | Operating modes                                 | Continuous, Strobe   |  |  |
| Control Panel No.  | Connection Diagram No.                          | 007                  |  |  |
| Suitable Mounting Technology No. 925   | -   |                      |  |  |
|  |   |                      |  |  |

### **Complementary Products**

| ·                          |
|----------------------------|
| Angle changer ZBAG         |
|                            |
| ZBAZ001 Bar clamp          |
|                            |
| ZC4G003 connection cable   |
|                            |
| ZDCG004 connection cable   |
| 250 doo 1 donnoction casio |
| ZDCG005 connection cable   |
| ZDOGOOJ COMBECTION CADIE   |
|                            |



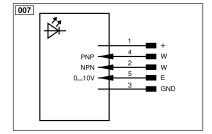
## Ctrl. Panel

**T17** 



68 = supply voltage indicator

9b = Strobe Mode Indicator



| Legend    |  |          |                                |           |  |  |
|-----------|--|----------|--------------------------------|-----------|--|--|
| +         | Supply Voltage +                           | nc       | Not connected                  | ENBRS422  | Encoder B/B (TTL)                      |  |
| _         | Supply Voltage 0 V                         | U        | Test Input                     | ENA       | Encoder A                              |  |
| ~         | Supply Voltage (AC Voltage)                | 0        | Test Input inverted            | ENв       | Encoder B                              |  |
| Д         | Switching Output (NO)                      | W        | Trigger Input                  | Amin      | Digital output MIN                     |  |
| Ā         | Switching Output (NC)                      | W-       | Ground for the Trigger Input   | AMAX      | Digital output MAX                     |  |
| /         | Contamination/Error Output (NO)            | 0        | Analog Output                  | Аок       | Digital output OK                      |  |
| 7         | Contamination/Error Output (NC)            | 0-       | Ground for the Analog Output   | SY In     | Synchronization In                     |  |
| =         | Input (analog or digital)                  | BZ       | Block Discharge                | SY OUT    | Synchronization OUT                    |  |
| Γ         | Teach Input                                | Amv      | Valve Output                   | OLT       | Brightness output                      |  |
| 7         | Time Delay (activation)                    | а        | Valve Control Output +         | M         | Maintenance                            |  |
| 3         | Shielding                                  | b        | Valve Control Output 0 V       | rsv       | Reserved                               |  |
| RxD       | Interface Receive Path                     | SY       | Synchronization                | Wire Colo | Wire Colors according to DIN IEC 60757 |  |
| ΓxD       | Interface Send Path                        | SY-      | Ground for the Synchronization | BK        | Black                                  |  |
| RDY       | Ready                                      | E+       | Receiver-Line                  | BN        | Brown                                  |  |
| GND       | Ground                                     | S+       | Emitter-Line                   | RD        | Red                                    |  |
| CL        | Clock                                      | ±        | Grounding                      | OG        | Orange                                 |  |
| E/A       | Output/Input programmable                  | SnR      | Switching Distance Reduction   | YE        | Yellow                                 |  |
| 3         | IO-Link                                    | Rx+/-    | Ethernet Receive Path          | GN        | Green                                  |  |
| PoE       | ower over Ethernet                         | Tx+/-    | Ethernet Send Path             | BU        | Blue                                   |  |
| N         | Safety Input                               | Bus      | Interfaces-Bus A(+)/B(-)       | VT        | Violet                                 |  |
| OSSD      | Safety Output                              | La       | Emitted Light disengageable    | GY        | Grey                                   |  |
| Signal    | Signal Output                              | Mag      | Magnet activation              | WH        | White                                  |  |
| BI_D+/-   | Ethernet Gigabit bidirect. data line (A-D) | RES      | Input confirmation             | PK        | Pink                                   |  |
| ENo RS422 | Encoder 0-pulse 0/0 (TTL)                  | EDM      | Contactor Monitoring           | GNYE      | Green/Yellow                           |  |
| PT        | Platinum measuring resistor                | ENARS422 | Encoder A/Ā (TTL)              |           | •                                      |  |









