

# Product data sheet

Specifications



## Regulated Power Supply, 100 to 240V AC, 24V, 10A, single phase, Optimized

ABLS1A24100

### Main

|                             |  |
|-----------------------------|--|
| Range of product            | Modicon Power Supply   |
| Product or component type   | Power supply   |
| Power supply type           | Regulated switch mode  |
| Variant option              | Optimized  |
| Enclosure material          | Aluminium  |
| Nominal input voltage       | 100...240 V AC single phase<br>100...240 V AC phase to phase<br>140...340 V DC |
| Rated power in W            | 240 W  |
| Output voltage              | 24 V DC  |
| Power supply output current | 10 A   |

### Complementary

|                              |   |
|------------------------------|---|
| Input voltage limits         | 85...264 V AC without temperature derating<br>120...375 V DC without temperature derating   |
| Nominal network frequency    | 50...60 Hz  |
| Network system compatibility | TN<br>TT<br>IT  |
| Maximum leakage current      | 1 mA 240 V AC   |
| Input protection type        | Integrated fuse (not interchangeable) 6.3 A<br>External protection (recommended) 20 A Curve B<br>External protection (recommended) 20 A Curve C<br>External protection (recommended) 6 A Curve B<br>External protection (recommended) 6 A Curve C |
| Inrush current               | 30.0 A at 115 V<br>60.0 A at 230 V  |
| Power factor                 | 0.95 at 115 V AC<br>0.95 at 230 V AC  |
| Efficiency                   | 85 % at 115 V AC<br>88 % at 230 V AC  |
| Output voltage adjustment    | 22...28 V   |
| Power dissipation in W       | 36 W  |
| Current consumption          | < 2.8 A 115 V AC<br>< 1.4 A 230 V AC<br>< 2.4 A 140 V DC  |
| Turn-on time                 | < 1 s   |
| Holding time                 | > 20 ms 115 V AC<br>> 20 ms 230 V AC  |

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

|  |  |
|--|--|
| <b>Startup with capacitive loads</b>   | 8000 $\mu$ F   |
| <b>Residual ripple</b>                 | < 120 mV   |
| <b>Meantime between failure [MTBF]</b> | 700000 h at 25 °C, full load conforming to SR 332  |
| <b>Output protection type</b>          | Against overload and short-circuits, protection technology: automatic reset<br>Against over temperature, protection technology: manual reset<br>Against overvoltage, protection technology: manual reset   |
| <b>Connections - terminals</b>         | Screw connection: 0.5...4 mm <sup>2</sup> , (AWG 20...AWG 12) without wire end ferrule for output<br>Screw connection: 0.5...2.5 mm <sup>2</sup> , (AWG 20...AWG 14) with wire end ferrule for output<br>Screw connection: 0.75...4 mm <sup>2</sup> , (AWG 18...AWG 12) without wire end ferrule for input<br>Screw connection: 0.75...4 mm <sup>2</sup> , (AWG 18...AWG 12) with wire end ferrule for input |
| <b>Line and load regulation</b>        | < 0.5 % at 0 to 100 % load at 25 °C<br>< 1 % at full voltage range in line at 25 °C  |
| <b>Status LED</b>                      | 1 LED (green) output voltage   |
| <b>Depth</b>                           | 117.6 mm   |
| <b>Height</b>                          | 123.6 mm   |
| <b>Width</b>                           | 60 mm  |
| <b>Product weight</b>                  | 0.8 kg   |
| <b>Output coupling</b>                 | Parallel<br>Serial   |
| <b>Mounting support</b>                | Top hat type TH35-15 rail conforming to IEC 60715<br>Top hat type TH35-7.5 rail conforming to IEC 60715<br>Double-profile DIN rail   |
| <b>Supply</b>                          | SELV conforming to IEC 60950-1<br>SELV conforming to IEC 60204-1<br>SELV conforming to IEC 60364-4-41  |
| <b>Dielectric strength</b>             | 3000 V AC with input to output   |
| <b>Service life</b>                    | 10 year(s)   |
| <b>Overvoltage category</b>            | II   |

## Environment

|                                |  |
|--------------------------------|--|
| <b>Standards</b>               | IEC 62368-1<br>EN/IEC 61204-3<br>IEC 61000-6-1<br>IEC 61000-6-2<br>IEC 61000-6-3<br>IEC 61000-6-4<br>IEC 61000-3-2<br>EN 61000-3-3<br>UL 62368-1<br>CSA C22.2 No 62368-1<br>UL 508<br>CSA C22.2 No 107.1<br>EN/IEC 62368-1 |
| <b>Product certifications</b>  | CE<br>CUL listed<br>CUL recognized<br>RCM<br>CB Scheme<br>EAC<br>KC  |
| <b>Operating altitude</b>      | < 5000 m   |
| <b>Shock resistance</b>        | 150 m/s <sup>2</sup> for 11 ms   |
| <b>IP degree of protection</b> | IP20   |

|  |  |
|--|--|
| <b>Ambient air temperature for operation</b> | -20...40 °C without derating mounting position A 115 V AC < 2000 m<br>-20...50 °C without derating mounting position A 230 V AC < 2000 m<br>40...70 °C with current derating of 1.67 % per °C mounting position A 115 V AC < 2000 m<br>50...70 °C with current derating of 2.5 % per °C mounting position A 230 V AC < 2000 m  |
| <b>Electrical shock protection class</b>     | Class I  |
| <b>Pollution degree</b>                      | 2  |
| <b>Vibration resistance</b>                  | 3 mm (f= 2...9 Hz) conforming to IEC 60068-2-6<br>10 m/s <sup>2</sup> (f= 9...200 Hz) conforming to IEC 60068-2-6  |
| <b>Electromagnetic immunity</b>              | Immunity to electrostatic discharge - test level: 8 kV (contact discharge) conforming to IEC 61000-4-2<br>Immunity to electrostatic discharge - test level: 15 kV (air discharge) conforming to IEC 61000-4-2<br>Immunity to conducted RF disturbances - test level: 15 V/m (80 MHz...2 GHz) conforming to IEC 61000-4-3<br>Immunity to conducted RF disturbances - test level: 5 V/m (2...2.7 GHz) conforming to IEC 61000-4-3<br>Immunity to conducted RF disturbances - test level: 5 V/m (2.7...6 GHz) conforming to IEC 61000-4-3<br>Immunity to fast transients - test level: 4 kV (on input-output) conforming to IEC 61000-4-4<br>Surge immunity test - test level: 4 kV (between power supply and earth) conforming to IEC 61000-4-5<br>Surge immunity test - test level: 3 kV (between phases) conforming to IEC 61000-4-5<br>Immunity to conducted RF disturbances - test level: 15 V (0.15...80 MHz) conforming to IEC 61000-4-6<br>Immunity to magnetic fields - test level: 30 A/m (50...60 Hz) conforming to IEC 61000-4-8<br>Immunity to voltage dips conforming to IEC 61000-4-11<br>Disturbing field emission conforming to EN 55016-2-3<br>Limits for harmonic current emissions conforming to IEC 61000-3-2 conforming to EN 55016-1-2<br>conforming to EN 55016-2-1 |
| <b>Electromagnetic emission</b>              | Conducted emissions conforming to IEC 61000-6-3<br>Radiated emissions conforming to IEC 61000-6-4  |

## Packing Units

|                                     |            |
|-------------------------------------|------------|
| <b>Unit Type of Package 1</b>       | PCE        |
| <b>Number of Units in Package 1</b> | 1          |
| <b>Package 1 Height</b>             | 7.000 cm   |
| <b>Package 1 Width</b>              | 17.500 cm  |
| <b>Package 1 Length</b>             | 18.500 cm  |
| <b>Package 1 Weight</b>             | 990.000 g  |
| <b>Unit Type of Package 2</b>       | S03        |
| <b>Number of Units in Package 2</b> | 9          |
| <b>Package 2 Height</b>             | 30.000 cm  |
| <b>Package 2 Width</b>              | 30.000 cm  |
| <b>Package 2 Length</b>             | 40.000 cm  |
| <b>Package 2 Weight</b>             | 9.495 kg   |
| <b>Unit Type of Package 3</b>       | P12        |
| <b>Number of Units in Package 3</b> | 216        |
| <b>Package 3 Height</b>             | 105.000 cm |
| <b>Package 3 Width</b>              | 80.000 cm  |
| <b>Package 3 Length</b>             | 120.000 cm |
| <b>Package 3 Weight</b>             | 241.000 kg |



## Environmental Data

Schneider Electric aims to achieve Net Zero status by 2050 through supply chain partnerships, lower impact materials, and circularity via our ongoing “Use Better, Use Longer, Use Again” campaign to extend product lifetimes and recyclability.

[Environmental Data explained >](#)

[How we assess product sustainability >](#)

### Environmental footprint

|                                  |   |
|----------------------------------|---|
| Total lifecycle Carbon footprint | 1557  |
| Environmental Disclosure         | <a href="#">Product Environmental Profile</a> |

## Use Better

### Materials and Substances

|  |  |
|--|--|
| Packaging made with recycled cardboard | No   |
| Packaging without single use plastic   | Yes  |
| <a href="#">EU RoHS Directive</a>      | Pro-active compliance (Product out of EU RoHS legal scope)   |
| SCIP Number                            | 698d9b2a-7a6a-4b8f-a149-489156f55645   |
| REACH Regulation                       | <a href="#">REACH Declaration</a>  |
| California proposition 65              | <b>WARNING:</b> This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to <a href="#">www.P65Warnings.ca.gov</a> |

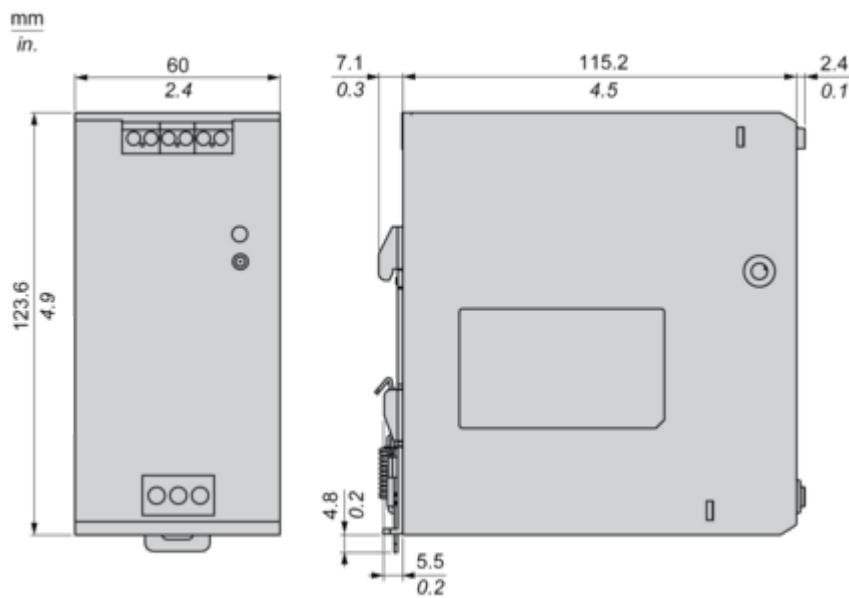
## Use Again

### Repack and remanufacture

|                                 |   |
|---------------------------------|---|
| End of life manual availability | <a href="#">End of Life Information</a>   |
| Take-back                       | No  |
| WEEE Label                      | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins |

**Dimensions Drawings****Electrical Safety**

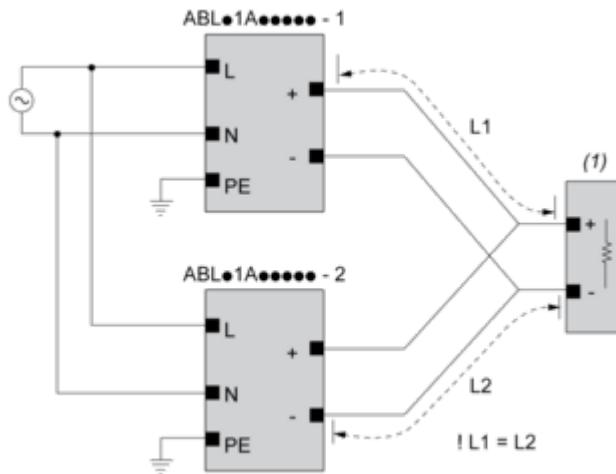
- If the unit is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- For means of disconnection a switch or circuit breaker, located near the product, must be included in the installation. A marking as disconnecting device for the product is required.
- The device has an internal fuse. The unit is tested and approved with branch circuit protective device up to 20A. This circuit breaker can be used as disconnecting device.
- The power supply is only suitable for audio, video, information, communication, industrial and control equipment.

**Dimensions****Front and Side Views**

## Connections and Schema

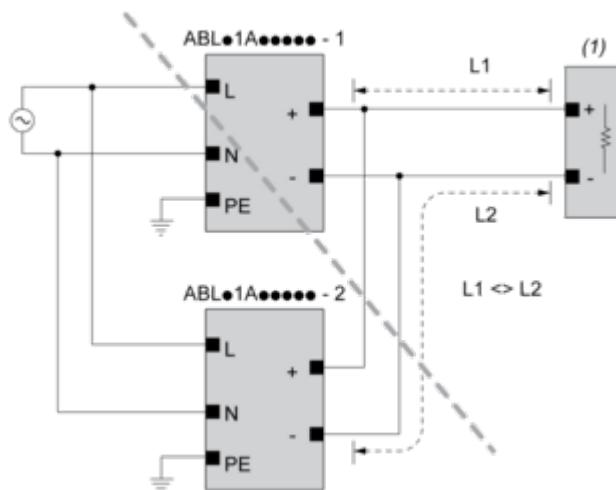
Connections and Schema

## Correct Parallel Connection



(1) : Load

## Incorrect Parallel Connection



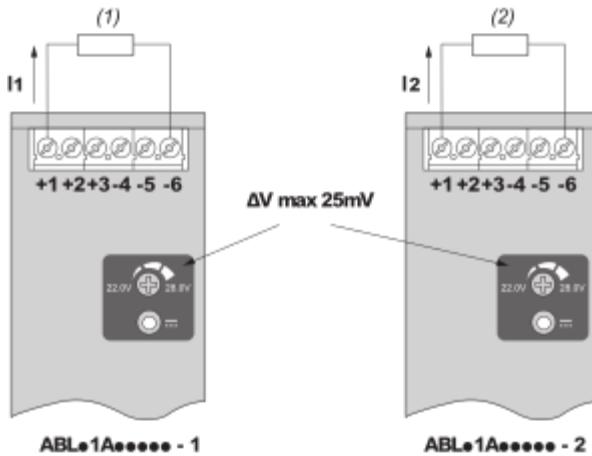
(1) : Load

ABLx1Axxxxx-1 = ABLx1Axxxxx-2

max 2 x ABLx1Axxxxx

 $L1 = L2$  $\Delta V$  max 25 mV $I_{Load} < 90\% 2 \times I_{nom}$ 

## Output Voltage Balancing



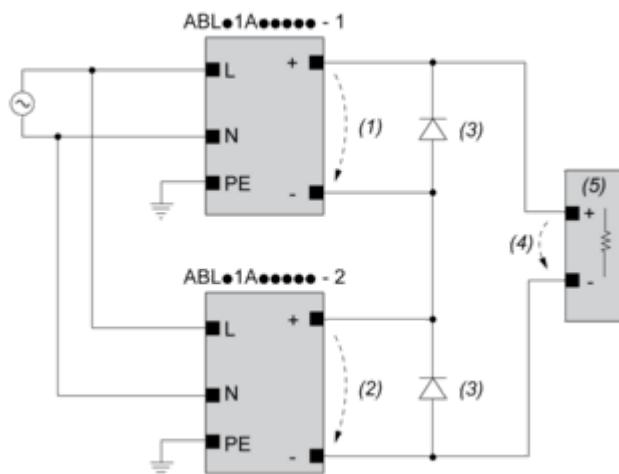
(1) :  $R_{Load1}$

(2) :  $R_{Load2}$

$$R_{Load1} = R_{Load2}$$

$$I_1 = I_2 = \sim I_{nom}$$

### Series Connection



(1) :  $V_{out1}$

(2) :  $V_{out2}$

(3) : 2 x Diode,  $V_{RRM} > 2 \times V_{out1/2}$ ;  $I_F > 2 \times I_{nom1/2}$

(4) :  $V_{Load} = 2 \times V_{out}$

(5) : Load

Connections and Schema

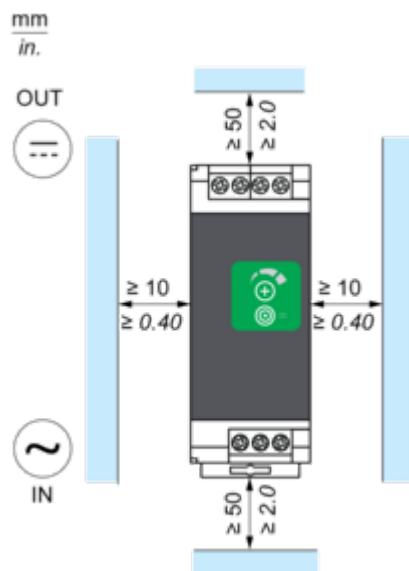
|             | (1)   |       |       |
|-------------|-------|-------|-------|
|             | <40°C | <50°C | <70°C |
| ABLS1A24021 | 50°C  | 60°C  | 75°C  |
| ABLS1A24038 | 50°C  | 60°C  | 75°C  |
| ABLS1A12062 | 50°C  | 60°C  | 80°C  |
| ABLS1A24031 | 50°C  | 60°C  | 80°C  |
| ABLS1A12100 | 60°C  | 70°C  | 90°C  |
| ABLS1A24050 | 60°C  | 70°C  | 90°C  |
| ABLS1A48025 | 60°C  | 70°C  | 90°C  |
| ABLS1A24100 | 60°C  | 70°C  | 90°C  |
| ABLS1A24200 | 95°C  | 95°C  | 90°C  |

(1) : Ambient

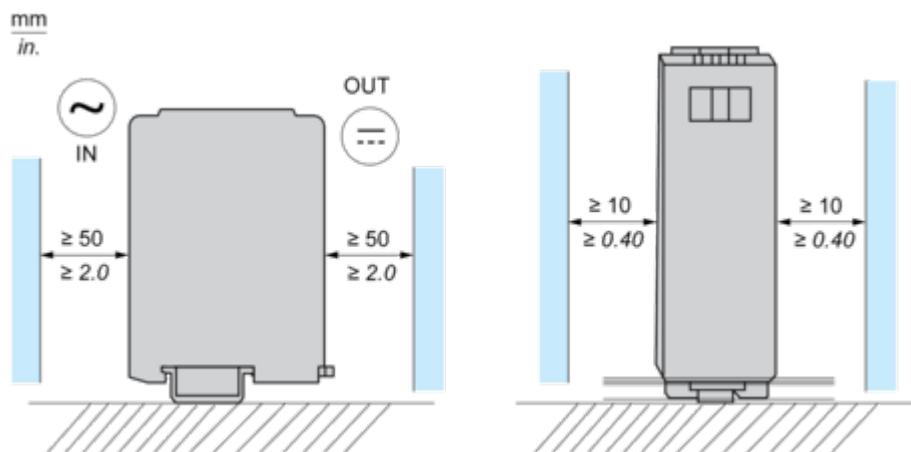
## Mounting and Clearance

Mounting

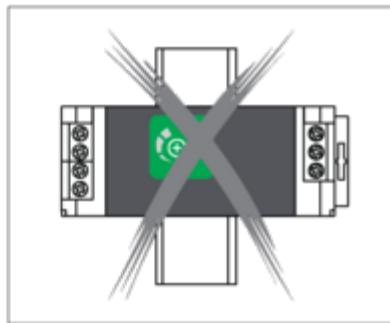
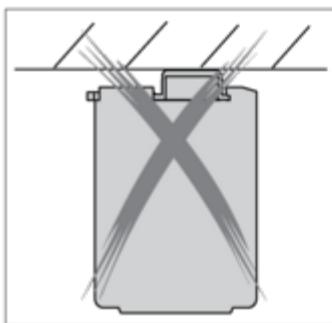
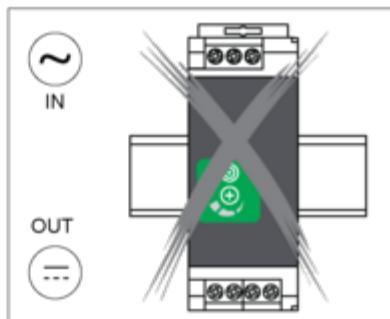
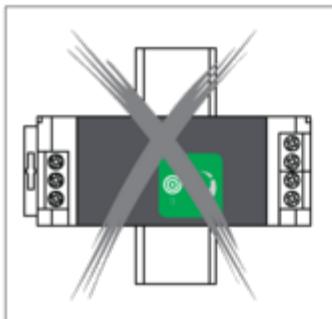
## Mounting Position A



## Mounting Position B



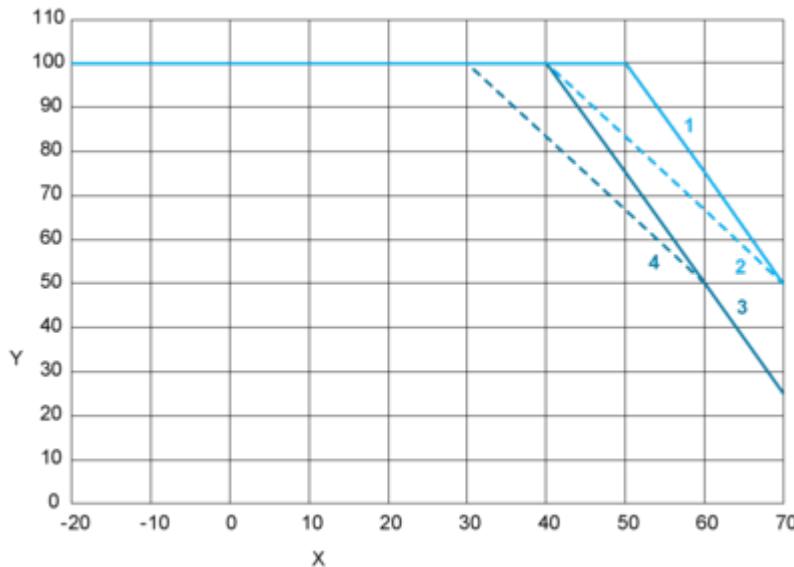
## Incorrect Mounting



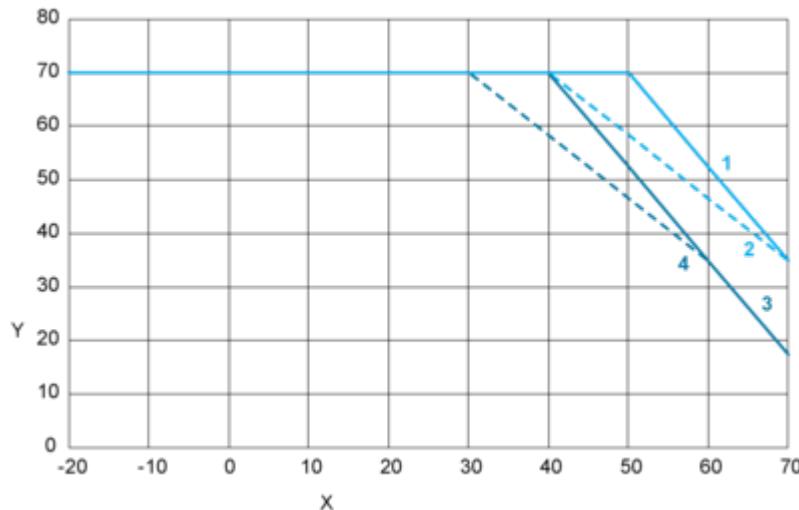
## Performance Curves

Performance Curve

## Mounting Position A



## Mounting Position B



X : Surrounding Air Temperature (°C)

Y : Percentage of Maximum Load (%)

1 : Altitude ≤ 2000 m (6561 ft), Input voltage = 230 VAC / 325 VDC

2 : Altitude ≤ 2000 m (6561 ft), 115 VAC / 162 VDC

3 : Altitude ≤ 5000 m (16404 ft), Input voltage = 230 VAC / 325 VDC

4 : Altitude ≤ 5000 m (16404 ft), 115 VAC / 162 VDC

Image of product / Alternate images

## Alternative

## 標準品仕様表

| 光源電源電圧     | グローブ色 | 型式       | 使用電圧範囲   | 消費電力 | 実入電流 | 製造年 |
|------------|-------|----------|----------|------|------|-----|
| AC/DC24V   | 青     | ABLS24B  | 19~27V   | 5.2W | 5A   |     |
|            | 赤     | ABLS24R  |          |      |      |     |
|            | 緑     | ABLS24G  |          |      |      |     |
| AC200/110V | 青     | ABLS100B | 90~120V  | 7W   | 1A   |     |
|            | 赤     | ABLS100R |          |      |      |     |
| AC200/220V | 青     | ABLS220B | 180~240V | 7W   | 0.5A |     |

| 光源      | 開光角度               | IP   | 防雨構造 | 電球                        | 材質  |
|---------|--------------------|------|------|---------------------------|---|
| ABLS24  | 140mm <sup>1</sup> | IP65 | IP65 | Φ67<br>Ext 8.815<br>0.064 | 24VDC<br>G18.8A15S/19<br>12V5W                    |
| ABLS100 | 電球                 | IP65 | IP65 | Ext 8.815                 | 本体:樹脂合板/PCアミラック板/PC板<br>(グローブ:樹脂ガラス/メラミン化粧板/二重構造) |
| ABLS220 |                    |      |      |                           |   |





