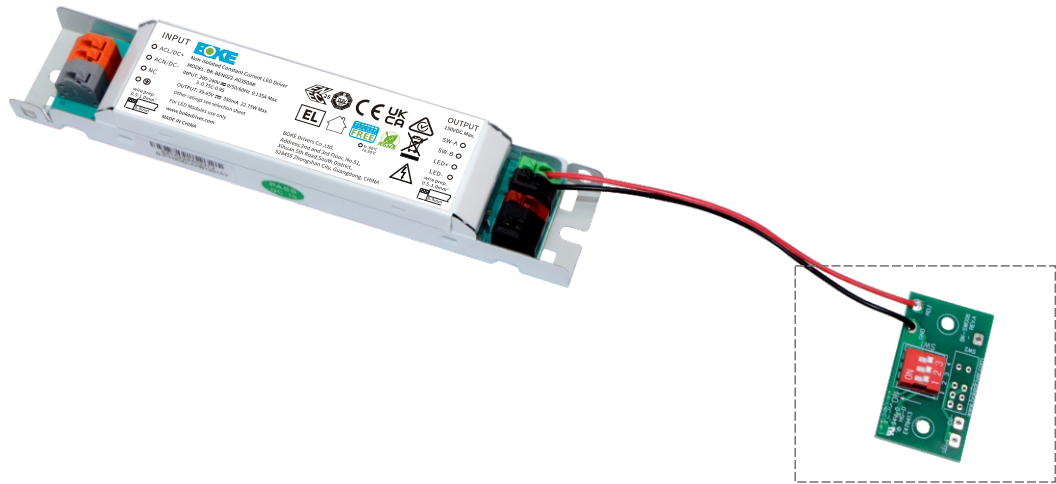


## Non-isolated constant current linear driver BEN Series suffix R(External DIP-switch)



Optional accessories(Model: BK-SW010A)

### Features

- Input and output non-isolated
- Multi-level current output can be realized by external DIP-switch
- The DIP-switch can be externally connected to the lamp body to adjust the output power
- Output flick-free, meets the new requirements of ErP certification
- Built in active PFC function, high PF, low THD
- Dual-stage circuit design, work stable
- Withstand 380VAC high voltage short-time shock
- Suitable for built-in use of Class I lamps
- Passed CE, ENEC, UKCA, RCM, EL and other certifications
- IP20 protection grade, indoor use
- Nominal life-time up to 100,000 h
- 5.5-year guarantee

### Functions

- Support central emergency application (100% output in DC input)
- Support self-contained emergency application
- Protective features (short-circuit, no-load protection)

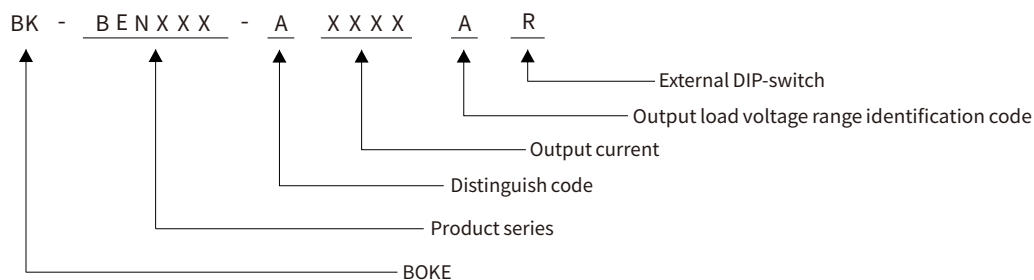
### Suitable for lights

- Suitable for tri-proof lights.

### Typical applications

- LED indoor lighting
- LED office lighting
- LED commercial lighting

### Model coding rules of BEN series



## Function list

| Model                                                    | Mode | Function           |
|----------------------------------------------------------|------|--------------------|
| BK-BEN022-A<br>BK-BEN040-A<br>BK-BEN060-A<br>BK-BEN080-A | S    | Integrated dialing |
|                                                          | R    | External dialing   |

\* The description in this specification is only applicable to the products with the suffix R and the model are BEN022-A,BEN040-A,BEN060-A and BEN080-A.

## Model list

| Model                                  | Input voltage | Output power | Output voltage | Output current | Dimension      |
|----------------------------------------|---------------|--------------|----------------|----------------|----------------|
| BK-BEN022-A0350AS<br>BK-BEN022-A0350AR | 200-240VAC/DC | 22.75W MAX.  | 39-72VDC       | 0.2-0.35A      | L158*W30*H21mm |
| BK-BEN040-A0350AS<br>BK-BEN040-A0350AR | 200-240VAC/DC | 39.9W MAX.   | 54-114VDC      | 0.2-0.35A      | L158*W30*H21mm |
| BK-BEN060-A0350AS<br>BK-BEN060-A0350AR | 200-240VAC/DC | 60.2W MAX.   | 100-200VDC     | 0.2-0.35A      | L195*W30*H21mm |
| BK-BEN080-A0550AS<br>BK-BEN080-A0550AR | 200-240VAC/DC | 80.0W MAX.   | 50-216VDC      | 0.2-0.55A      | L210*W30*H21mm |

\* The description in this specification is only applicable to the products with the suffix R and the model are BEN022-A,BEN040-A,BEN060-A and BEN080-A.

## Technical data

|                                     |                                                                                                                                                                                       |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product model                       | BK-BEN022-A0350AR                                                                                                                                                                     |
| <b>Output parameters</b>            |                                                                                                                                                                                       |
| Regulation method                   | Constant Current                                                                                                                                                                      |
| Rated output current range          | 0.2-0.35A, see the DIP-switch for details                                                                                                                                             |
| Rated output voltage range          | 39-72VDC, see the DIP-switch for details                                                                                                                                              |
| Rated output power                  | 22.75W Max, see the DIP-switch for details                                                                                                                                            |
| Output current adjustment           | External DIP S.W(4 levels)                                                                                                                                                            |
| Output current ripple LF            | ±3%                                                                                                                                                                                   |
| Output current accuracy             | ±5%-±10%, see the DIP-switch for details                                                                                                                                              |
| Linear regulation                   | ±5%                                                                                                                                                                                   |
| Load regulation                     | ±5%                                                                                                                                                                                   |
| No load output voltage              | 150VDC                                                                                                                                                                                |
| Flicker-free(typ.)                  | Flickering percent(IEEE 1789)=0.214%(100Hz), Flicker index(IEEE 1789)=0.001(100Hz), Pst LM = 0.028, SVM = 0.000,<br>(The above parameters are obtained from testing the panel lights) |
| <b>Input parameters</b>             |                                                                                                                                                                                       |
| Rated input voltage range           | 200-240VAC 200-240VDC                                                                                                                                                                 |
| Input voltage range                 | 180-264VAC 180-264VDC                                                                                                                                                                 |
| Input voltage shock                 | <380 V AC                                                                                                                                                                             |
| Input current                       | <0.135A (Rated input voltage)                                                                                                                                                         |
| Input frequency                     | 0/50/60Hz                                                                                                                                                                             |
| Input PF/Input DF(typ.)             | PF:0.96,DF: 0.96 ,see the electrical values below for details                                                                                                                         |
| Input THD(typ.)                     | 10% ,see the electrical values below for details                                                                                                                                      |
| Efficiency(typ.)                    | 88.5% ,see the electrical values below for details                                                                                                                                    |
| In-rush current(typ.)               | 10.85A peak ,238us duration(50 % Ipeak) , see the description below for details                                                                                                       |
| Start/Switchover/Turn off           | <0.5s(AC start),<0.5s(DC start),<0.3s(AC/DC switchover),<0.5s(Turn off )                                                                                                              |
| Switching cycles                    | > 100,000 switching cycles                                                                                                                                                            |
| Power consumption(typ.)             | Full load(Pin):25.7W, No load(Pno): N/A, On stand-by(Psb) : N/A, Network stand-by(Pnet) : N/A                                                                                         |
| <b>Safety</b>                       |                                                                                                                                                                                       |
| Withstand voltage                   | I/P-FG:1750VAC                                                                                                                                                                        |
| Mains surge capability              | L-N:2KV,L-FG/N-FG:2KV(90°/270° , 5 times each with an interval of 60s)(Performance criterion:B)                                                                                       |
| Isolation resistance                | I/P-FG:100MΩ/500Vdc/25°C/70% RH                                                                                                                                                       |
| <b>Control interface</b>            |                                                                                                                                                                                       |
| DALI dimming port                   | N/A                                                                                                                                                                                   |
| pushDIM dimming port                | N/A                                                                                                                                                                                   |
| 1-10V 3in1 dimming port             | N/A                                                                                                                                                                                   |
| Auxiliary power supply              | N/A                                                                                                                                                                                   |
| Dimming range                       | N/A                                                                                                                                                                                   |
| Dimming drive mode                  | N/A                                                                                                                                                                                   |
| <b>Emergency support</b>            |                                                                                                                                                                                       |
| Central emergency system            | Supported(100% output in DC input)                                                                                                                                                    |
| Self-contained emergency            | Supported                                                                                                                                                                             |
| <b>Environment &amp; Life time</b>  |                                                                                                                                                                                       |
| Operating temperature               | Ta=-20-50°C                                                                                                                                                                           |
| Case temperature                    | Tc=80°C                                                                                                                                                                               |
| Operating humidity                  | 5-85% RH, not condensed                                                                                                                                                               |
| Storage temp./humidity              | -40-80°C, 5-85% RH, not condensed                                                                                                                                                     |
| IP grade                            | IP20                                                                                                                                                                                  |
| MTBF                                | 500,000H,MIL-HDBK-217F(25°C)                                                                                                                                                          |
| Life-time                           | Nominal life-time up to 100,000 h, see the description below for details                                                                                                              |
| Vibration resistant                 | 10~500Hz,5G 12min./1cycle,period for 72min. each along X,Y,Z axes                                                                                                                     |
| Acoustic Noise                      | <25dB(30cm, Normal operation)                                                                                                                                                         |
| Environmental protection            | RoHS                                                                                                                                                                                  |
| <b>Certifications and standards</b> |                                                                                                                                                                                       |
| Certification                       | CE, ENEC, UKCA, RCM, EL                                                                                                                                                               |
| Safety                              | EN61347-1, EN61347-2-13, EN62384                                                                                                                                                      |
| EMC                                 | EN55015, EN61000-3-2 , EN61000-3-3, EN61000-4-2,3,4,5,6,8,11, EN61547                                                                                                                 |
| DALI-2                              | N/A                                                                                                                                                                                   |
| EL                                  | Compatible IEC 61347-2- 13 Annex J , compatible with EN 60598-2-22 and EN 50172                                                                                                       |
| RF                                  | N/A                                                                                                                                                                                   |

## Remarks

1.By default, all parameter are measured at 230VAC input, 50Hz, full load and 25°C of ambient temperature.

## Technical data

|                                     |                                                                                                                                                                                    |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product model                       | BK-BEN040-A0350AR                                                                                                                                                                  |
| <b>Output parameters</b>            |                                                                                                                                                                                    |
| Regulation method                   | Constant Current                                                                                                                                                                   |
| Rated output current range          | 0.2-0.35A,see the DIP-switch for details                                                                                                                                           |
| Rated output voltage range          | 54-114VDC,see the DIP-switch for details                                                                                                                                           |
| Rated output power                  | 39.9W Max,see the DIP-switch for details                                                                                                                                           |
| Output current adjustment           | External DIP S.W(4 levels)                                                                                                                                                         |
| Output current ripple LF            | ±3%                                                                                                                                                                                |
| Output current accuracy             | ±5%-±10%,see the DIP-switch for details                                                                                                                                            |
| Linear regulation                   | ±5%                                                                                                                                                                                |
| Load regulation                     | ±5%                                                                                                                                                                                |
| No load output voltage              | 150VDC                                                                                                                                                                             |
| Flicker-free(typ.)                  | Flickering percent(IEEE 1789)=0.330%(100Hz), Flicker index(IEEE 1789)=0.001(100Hz), Pst LM = 0.028, SVM = 0.002, (The above parameters are obtained from testing the panel lights) |
| <b>Input parameters</b>             |                                                                                                                                                                                    |
| Rated input voltage range           | 200-240VAC 200-240VDC                                                                                                                                                              |
| Input voltage range                 | 180-264VAC 180-264VDC                                                                                                                                                              |
| Input votage shock                  | <380 V AC                                                                                                                                                                          |
| Input current                       | <0.225A (Rated input voltage)                                                                                                                                                      |
| Input frequency                     | 0/50/60Hz                                                                                                                                                                          |
| Input PF/Input DF(typ.)             | PF:0.97,DF: 0.98 ,see the electrical values below for details                                                                                                                      |
| Input THD(typ.)                     | 8% ,see the electrical values below for details                                                                                                                                    |
| Efficiency(typ.)                    | 92% ,see the electrical values below for details                                                                                                                                   |
| In-rush current(typ.)               | 18.1A peak ,226us duration(50 % Ipeak), see the description below for details                                                                                                      |
| Start/Switchover/Turn off           | <0.5s(AC start),<0.5s(DC start),<0.3s(AC/DC switchover),<0.5s(Turn off )                                                                                                           |
| Switching cycles                    | > 100,000 switching cycles                                                                                                                                                         |
| Power consumption(typ.)             | Full load(Pin):43.4W, No load(Pno): N/A, On stand-by(Psb) : N/A, Network stand-by(Pnet) : N/A                                                                                      |
| <b>Safety</b>                       |                                                                                                                                                                                    |
| Withstand voltage                   | I/P-FG:1750VAC                                                                                                                                                                     |
| Mains surge capability              | L-N:2KV,L-FG/N-FG:2KV(90°/270°, 5 times each with an interval of 60s)(Performance criterion:B)                                                                                     |
| Isolation resistance                | I/P-FG:100MΩ/500Vdc/25°C/70% RH                                                                                                                                                    |
| <b>Control interface</b>            |                                                                                                                                                                                    |
| DALI dimming port                   | N/A                                                                                                                                                                                |
| pushDIM dimming port                | N/A                                                                                                                                                                                |
| 1-10V 3in1 dimming port             | N/A                                                                                                                                                                                |
| Auxiliary power supply              | N/A                                                                                                                                                                                |
| Dimming range                       | N/A                                                                                                                                                                                |
| Dimming drive mode                  | N/A                                                                                                                                                                                |
| <b>Emergency support</b>            |                                                                                                                                                                                    |
| Central emergency system            | Supported(100% output in DC input)                                                                                                                                                 |
| Self-contained emergency            | Supported                                                                                                                                                                          |
| <b>Environment &amp; Life time</b>  |                                                                                                                                                                                    |
| Operating temperature               | Ta=-20-50°C                                                                                                                                                                        |
| Case temperature                    | Tc=85°C                                                                                                                                                                            |
| Operating humidity                  | 5-85% RH, not condensed                                                                                                                                                            |
| Storage temp./humidity              | -40-80°C, 5-85% RH, not condensed                                                                                                                                                  |
| IP grade                            | IP20                                                                                                                                                                               |
| MTBF                                | 500,000H,MIL-HDBK-217F(25°C)                                                                                                                                                       |
| Life-time                           | Nominal life-time up to 100,000 h, see the description below for details                                                                                                           |
| Vibration resistant                 | 10~500Hz,5G 12min./1cycle,period for 72min. each along X,Y,Z axes                                                                                                                  |
| Acoustic Noise                      | <25dB(30cm, Normal operation)                                                                                                                                                      |
| Environmental protection            | RoHS                                                                                                                                                                               |
| <b>Certifications and standards</b> |                                                                                                                                                                                    |
| Certification                       | CE, ENEC, UKCA, RCM, EL                                                                                                                                                            |
| Safety                              | EN61347-1, EN61347-2-13, EN62384                                                                                                                                                   |
| EMC                                 | EN55015, EN61000-3-2, EN61000-3-3, EN61000-4-2,3,4,5,6,8,11, EN61547                                                                                                               |
| DALI-2                              | N/A                                                                                                                                                                                |
| EL                                  | Compatible IEC 61347-2- 13 Annex J , compatible with EN 60598-2-22 and EN 50172                                                                                                    |
| RF                                  | N/A                                                                                                                                                                                |

## Remarks

1.By default, all parameter are measured at 230VAC input, 50Hz, full load and 25°C of ambient temperature.

## Technical data

|                                     |                                                                                                                                                                                       |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product model                       | BK-BEN060-A0350AR                                                                                                                                                                     |
| <b>Output parameters</b>            |                                                                                                                                                                                       |
| Regulation method                   | Constant Current                                                                                                                                                                      |
| Rated output current range          | 0.2-0.35A,see the DIP-switch for details                                                                                                                                              |
| Rated output voltage range          | 100-200VDC,see the DIP-switch for details                                                                                                                                             |
| Rated output power                  | 60.2W Max,see the DIP-switch for details                                                                                                                                              |
| Output current adjustment           | External DIP S.W(4 levels)                                                                                                                                                            |
| Output current ripple LF            | ±3%                                                                                                                                                                                   |
| Output current accuracy             | ±5%-±10%,see the DIP-switch for details                                                                                                                                               |
| Linear regulation                   | ±5%                                                                                                                                                                                   |
| Load regulation                     | ±5%                                                                                                                                                                                   |
| No load output voltage              | 250VDC                                                                                                                                                                                |
| Flicker-free(typ.)                  | Flickering percent(IEEE 1789)=0.367%(100Hz), Flicker index(IEEE 1789)=0.001(100Hz), Pst LM = 0.028, SVM = 0.004,<br>(The above parameters are obtained from testing the panel lights) |
| <b>Input parameters</b>             |                                                                                                                                                                                       |
| Rated input voltage range           | 200-240VAC 200-240VDC                                                                                                                                                                 |
| Input voltage range                 | 180-264VAC 180-264VDC                                                                                                                                                                 |
| Input votage shock                  | <380 V AC                                                                                                                                                                             |
| Input current                       | <0.34A (Rated input voltage)                                                                                                                                                          |
| Input frequency                     | 0/50/60Hz                                                                                                                                                                             |
| Input PF/Input DF(typ.)             | PF:0.97,DF: 0.97 ,see the electrical values below for details                                                                                                                         |
| Input THD(typ.)                     | 8% ,see the electrical values below for details                                                                                                                                       |
| Efficiency(typ.)                    | 93% ,see the electrical values below for details                                                                                                                                      |
| In-rush current(typ.)               | 23A peak ,242us duration(50 % Ipeak), see the description below for details                                                                                                           |
| Start/Switchover/Turn off           | <0.5s(AC start),<0.5s(DC start),<0.3s(AC/DC switchover),<0.5s(Turn off )                                                                                                              |
| Switching cycles                    | > 100,000 switching cycles                                                                                                                                                            |
| Power consumption(typ.)             | Full load(Pin):64.7W, No load(Pno): N/A, On stand-by(Psb) : N/A, Network stand-by(Pnet) : N/A                                                                                         |
| <b>Safety</b>                       |                                                                                                                                                                                       |
| Withstand voltage                   | I/P-FG:1750VAC                                                                                                                                                                        |
| Mains surge capability              | L-N:2KV,L-FG/N-FG:2KV(90°/270°, 5 times each with an interval of 60s)(Performance criterion:B)                                                                                        |
| Isolation resistance                | I/P-FG:100MΩ/500Vdc/25°C/70% RH                                                                                                                                                       |
| <b>Control interface</b>            |                                                                                                                                                                                       |
| DALI dimming port                   | N/A                                                                                                                                                                                   |
| pushDIM dimming port                | N/A                                                                                                                                                                                   |
| 1-10V 3in1 dimming port             | N/A                                                                                                                                                                                   |
| Auxiliary power supply              | N/A                                                                                                                                                                                   |
| Dimming range                       | N/A                                                                                                                                                                                   |
| Dimming drive mode                  | N/A                                                                                                                                                                                   |
| <b>Emergency support</b>            |                                                                                                                                                                                       |
| Central emergency system            | Supported(100% output in DC input)                                                                                                                                                    |
| Self-contained emergency            | Supported                                                                                                                                                                             |
| <b>Environment &amp; Life time</b>  |                                                                                                                                                                                       |
| Operating temperature               | Ta=-20-50°C                                                                                                                                                                           |
| Case temperature                    | Tc=85°C                                                                                                                                                                               |
| Operating humidity                  | 5-85% RH, not condensed                                                                                                                                                               |
| Storage temp./humidity              | -40-80°C, 5-85% RH, not condensed                                                                                                                                                     |
| IP grade                            | IP20                                                                                                                                                                                  |
| MTBF                                | 500,000H,MIL-HDBK-217F(25°C)                                                                                                                                                          |
| Life-time                           | Nominal life-time up to 100,000 h, see the description below for details                                                                                                              |
| Vibration resistant                 | 10~500Hz,5G 12min./1cycle,period for 72min. each along X,Y,Z axes                                                                                                                     |
| Acoustic Noise                      | <25dB(30cm, Normal operation)                                                                                                                                                         |
| Environmental protection            | RoHS                                                                                                                                                                                  |
| <b>Certifications and standards</b> |                                                                                                                                                                                       |
| Certification                       | CE, ENEC, UKCA, RCM, EL                                                                                                                                                               |
| Safety                              | EN61347-1, EN61347-2-13, EN62384                                                                                                                                                      |
| EMC                                 | EN55015, EN61000-3-2, EN61000-3-3, EN61000-4-2,3,4,5,6,8,11, EN61547                                                                                                                  |
| DALI-2                              | N/A                                                                                                                                                                                   |
| EL                                  | Compatible IEC 61347-2- 13 Annex J , compatible with EN 60598-2-22 and EN 50172                                                                                                       |
| RF                                  | N/A                                                                                                                                                                                   |

## Remarks

1.By default, all parameter are measured at 230VAC input, 50Hz, full load and 25°C of ambient temperature.

## Technical data

|                                     |                                                                                                                                                                                    |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product model                       | BK-BEN080-A0550AR                                                                                                                                                                  |
| <b>Output parameters</b>            |                                                                                                                                                                                    |
| Regulation method                   | Constant Current                                                                                                                                                                   |
| Rated output current range          | 0.2-0.55A, see the DIP-switch for details                                                                                                                                          |
| Rated output voltage range          | 50-216VDC, see the DIP-switch for details                                                                                                                                          |
| Rated output power                  | 80W Max, see the DIP-switch for details                                                                                                                                            |
| Output current adjustment           | External DIP S.W(8 levels)                                                                                                                                                         |
| Output current ripple LF            | ±3%                                                                                                                                                                                |
| Output current accuracy             | ±5%                                                                                                                                                                                |
| Linear regulation                   | ±5%                                                                                                                                                                                |
| Load regulation                     | ±5%                                                                                                                                                                                |
| No load output voltage              | 250VDC                                                                                                                                                                             |
| Flicker-free(typ.)                  | Flickering percent(IEEE 1789)=0.488%(100Hz), Flicker index(IEEE 1789)=0.001(100Hz), Pst LM = 0.017, SVM = 0.003, (The above parameters are obtained from testing the panel lights) |
| <b>Input parameters</b>             |                                                                                                                                                                                    |
| Rated input voltage range           | 200-240VAC 200-240VDC                                                                                                                                                              |
| Input voltage range                 | 180-264VAC 180-264VDC                                                                                                                                                              |
| Input voltage shock                 | <380 V AC                                                                                                                                                                          |
| Input current                       | <0.433A (Rated input voltage)                                                                                                                                                      |
| Input frequency                     | 0/50/60Hz                                                                                                                                                                          |
| Input PF/Input DF(typ.)             | PF:0.96,DF: 0.97 ,see the electrical values below for details                                                                                                                      |
| Input THD(typ.)                     | 13% ,see the electrical values below for details                                                                                                                                   |
| Efficiency(typ.)                    | 94% ,see the electrical values below for details                                                                                                                                   |
| In-rush current(typ.)               | 19.81A peak ,268us duration(50 % Ipeak) , see the description below for details                                                                                                    |
| Start/Switchover/Turn off           | <0.5s(AC start),<0.5s(DC start),<0.3s(AC/DC switchover),<0.5s(Turn off )                                                                                                           |
| Switching cycles                    | > 100,000 switching cycles                                                                                                                                                         |
| Power consumption(typ.)             | Full load(Pin):85.1W, No load(Pno): N/A, On stand-by(Psb) : N/A, Network stand-by(Pnet) : N/A                                                                                      |
| <b>Safety</b>                       |                                                                                                                                                                                    |
| Withstand voltage                   | I/P-FG:1750VAC                                                                                                                                                                     |
| Mains surge capability              | L-N:2KV,L-FG/N-FG:2KV(90°/270°, 5 times each with an interval of 60s)(Performance criterion:B)                                                                                     |
| Isolation resistance                | I/P-FG:100MΩ/500Vdc/25°C/70% RH                                                                                                                                                    |
| <b>Control interface</b>            |                                                                                                                                                                                    |
| DALI dimming port                   | N/A                                                                                                                                                                                |
| pushDIM dimming port                | N/A                                                                                                                                                                                |
| 1-10V 3in1 dimming port             | N/A                                                                                                                                                                                |
| Auxiliary power supply              | N/A                                                                                                                                                                                |
| Dimming range                       | N/A                                                                                                                                                                                |
| Dimming drive mode                  | N/A                                                                                                                                                                                |
| <b>Emergency support</b>            |                                                                                                                                                                                    |
| Central emergency system            | Supported(100% output in DC input)                                                                                                                                                 |
| Self-contained emergency            | Supported                                                                                                                                                                          |
| <b>Environment &amp; Life time</b>  |                                                                                                                                                                                    |
| Operating temperature               | Ta=-20-60°C                                                                                                                                                                        |
| Case temperature                    | Tc=90°C                                                                                                                                                                            |
| Operating humidity                  | 5-85% RH, not condensed                                                                                                                                                            |
| Storage temp./humidity              | -40-80°C, 5-85% RH, not condensed                                                                                                                                                  |
| IP grade                            | IP20                                                                                                                                                                               |
| MTBF                                | 500,000H,MIL-HDBK-217F(25°C)                                                                                                                                                       |
| Life-time                           | Nominal life-time up to 100,000 h, see the description below for details                                                                                                           |
| Vibration resistant                 | 10~500Hz,5G 12min./1cycle,period for 72min. each along X,Y,Z axes                                                                                                                  |
| Acoustic Noise                      | <25dB(30cm, Normal operation)                                                                                                                                                      |
| Environmental protection            | RoHS                                                                                                                                                                               |
| <b>Certifications and standards</b> |                                                                                                                                                                                    |
| Certification                       | CE, ENEC, UKCA, RCM, EL                                                                                                                                                            |
| Safety                              | EN61347-1, EN61347-2-13, EN62384                                                                                                                                                   |
| EMC                                 | EN55015, EN61000-3-2, EN61000-3-3, EN61000-4-2,3,4,5,6,8,11, EN61547                                                                                                               |
| DALI-2                              | N/A                                                                                                                                                                                |
| EL                                  | Compatible IEC 61347-2- 13 Annex J , compatible with EN 60598-2-22 and EN 50172                                                                                                    |
| RF                                  | N/A                                                                                                                                                                                |

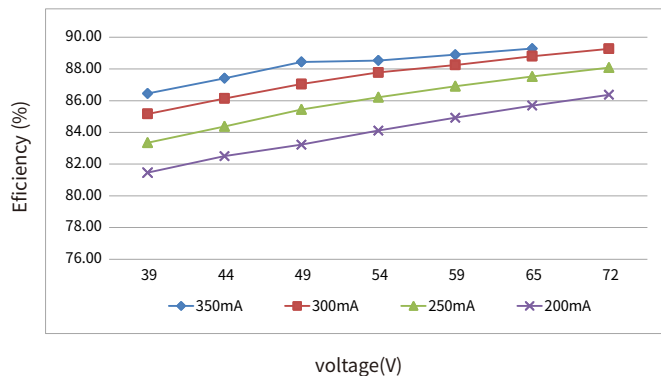
## Remarks

1.By default, all parameter are measured at 230VAC input, 50Hz, full load and 25°C of ambient temperature.

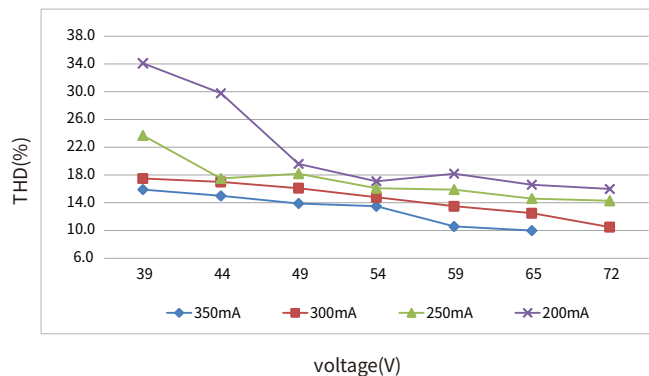
## Electrical values

BK-BEN022-A0350AR

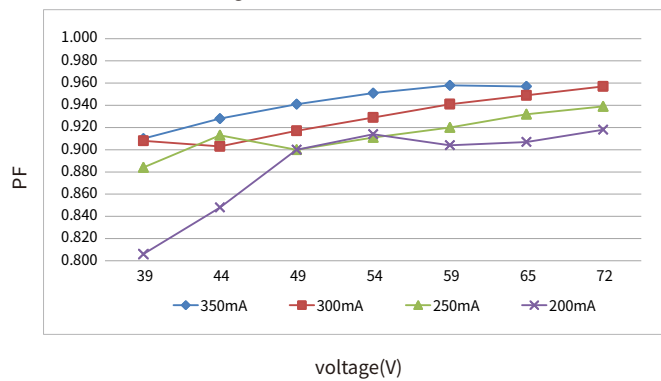
Efficiency vs voltage



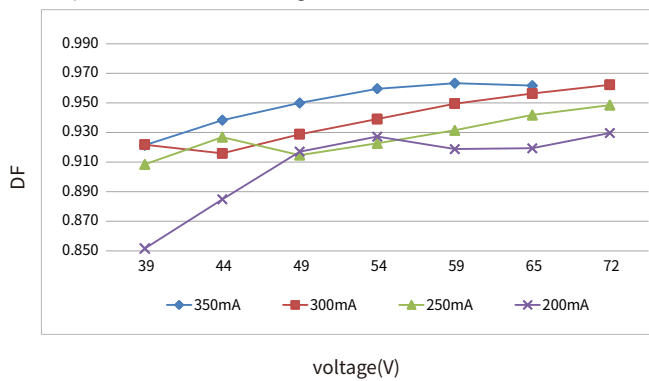
THD vs. voltage



Power factor vs. voltage

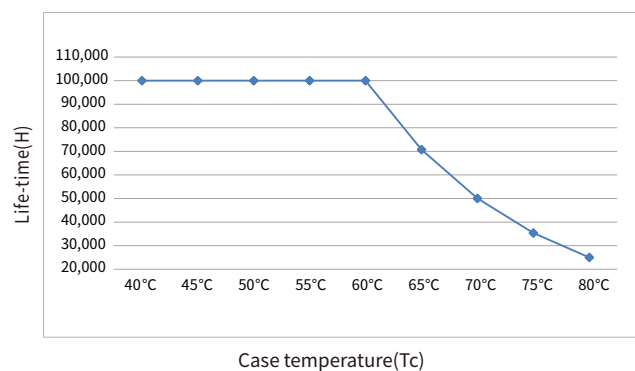


Displacement factor vs. voltage



## Expected life-time

Life-time vs. case temperature



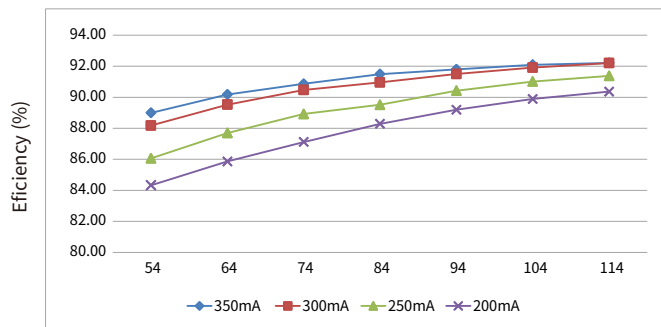
-The life-time of the LED driver is shown in the figure above (calculated based on the 90% survival rate).

- The relation of  $t_c$  to  $t_a$  temperature depends also on the luminaire design.

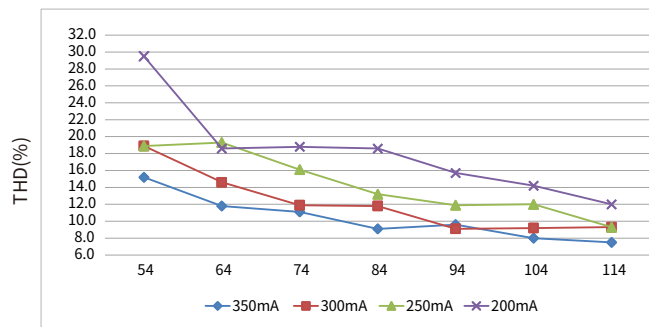
## Electrical values

BK-BEN040-A0350AR

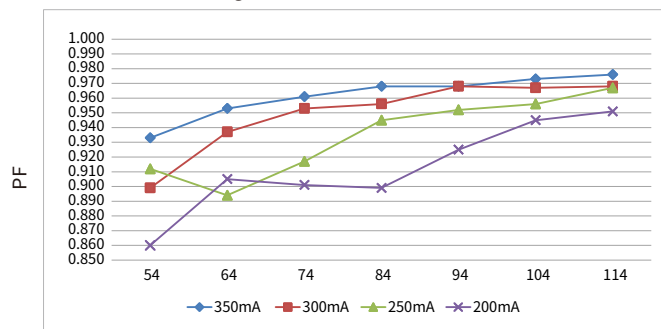
Efficiency vs voltage



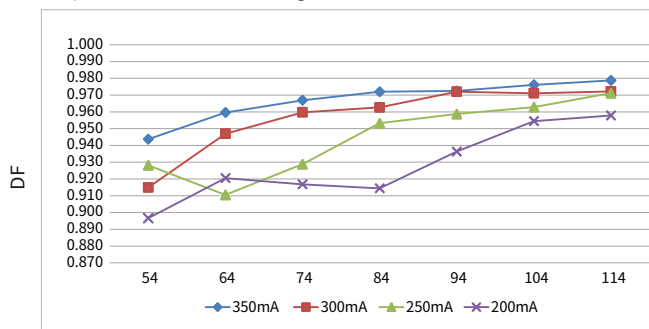
THD vs. voltage



Power factor vs. voltage

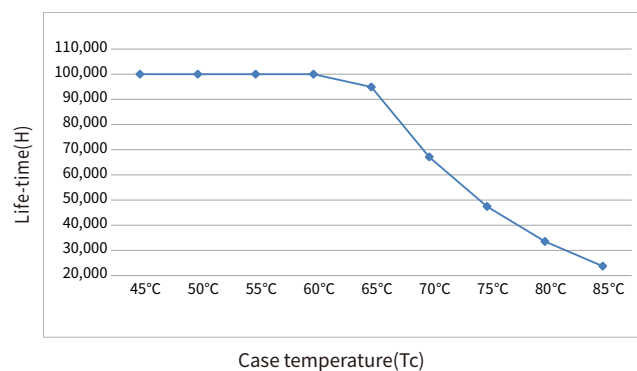


Displacement factor vs. voltage



## Expected life-time

Life-time vs. case temperature



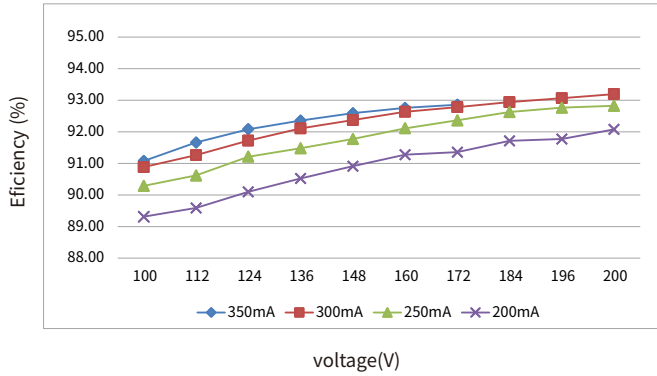
-The life-time of the LED driver is shown in the figure above (calculated based on the 90% survival rate).

- The relation of tc to ta temperature depends also on the luminaire design.

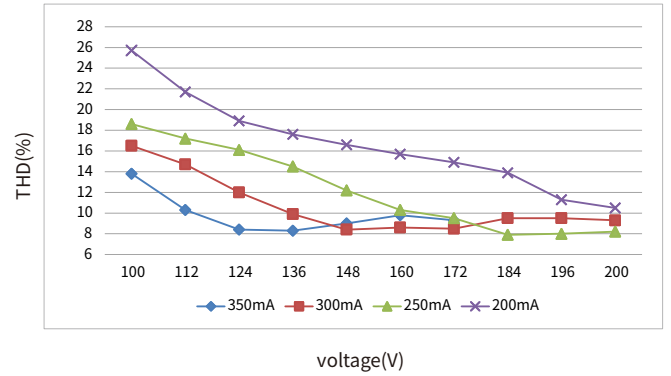
## Electrical values

BK-BEN060-A0350AR

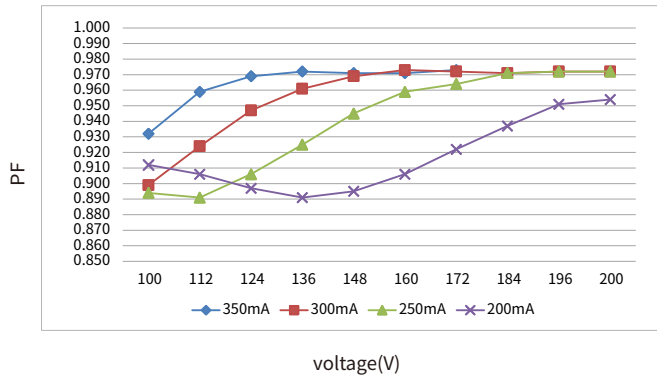
Efficiency vs. voltage



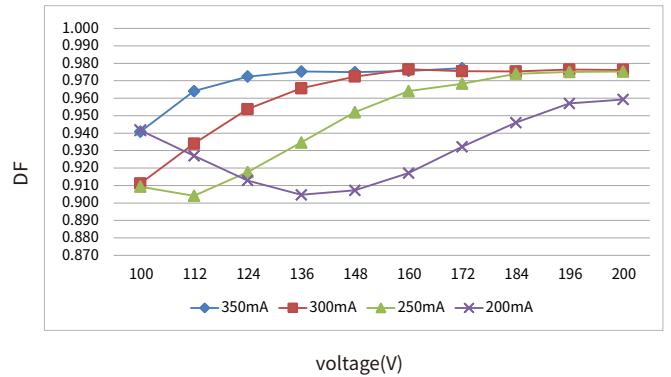
THD vs. voltage



Power factor vs. voltage

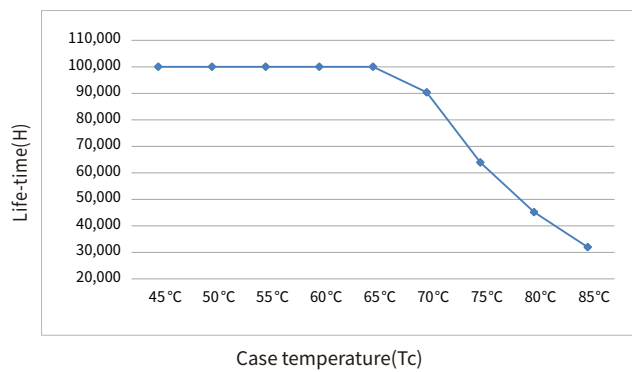


Displacement factor vs. voltage



## Expected life-time

Life-time vs. case temperature



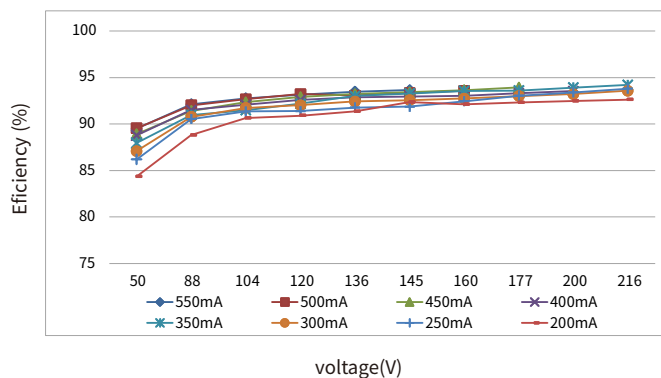
-The life-time of the LED driver is shown in the figure above (calculated based on the 90% survival rate).

- The relation of tc to ta temperature depends also on the luminaire design.

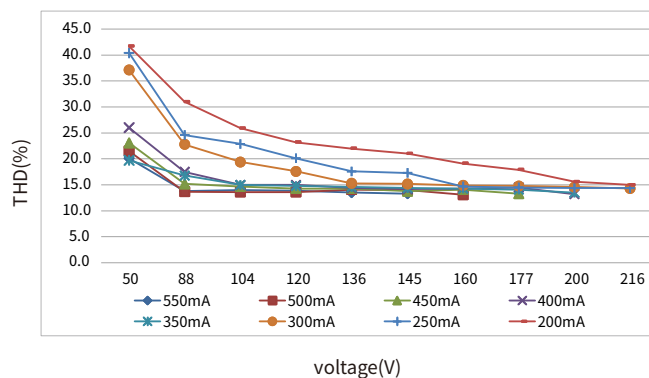
## Electrical values

BK-BEN080-A0550AR

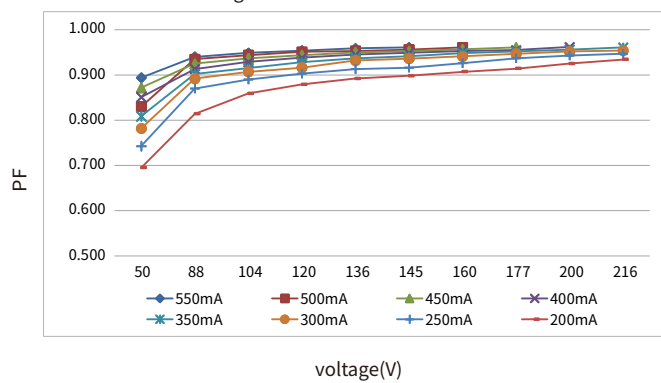
Efficiency vs voltage



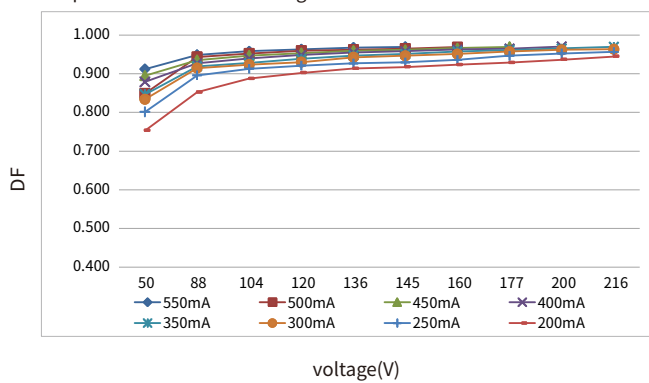
THD vs. voltage



Power factor vs. voltage

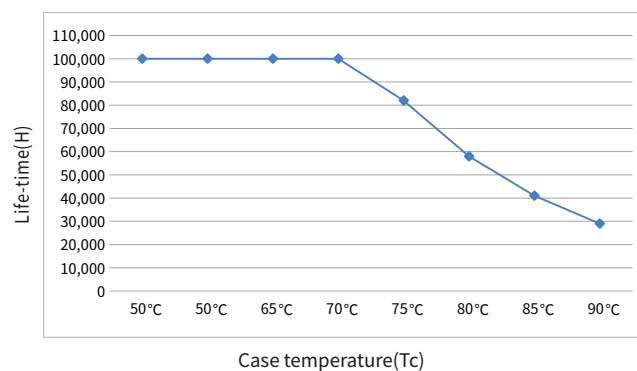


Displacement factor vs. voltage



## Expected life-time

Life-time vs. case temperature



-The life-time of the LED driver is shown in the figure above  
(calculated based on the 90% survival rate).

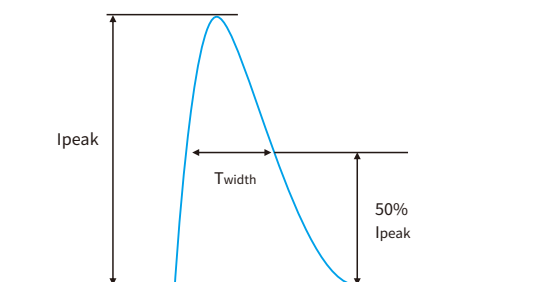
- The relation of tc to ta temperature depends also on the luminaire design.

## Surge

| Model             | I <sub>peak</sub> | T <sub>width</sub> | Condition                                                                                | Relative number of MCB |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Unit: pcs |
|-------------------|-------------------|--------------------|------------------------------------------------------------------------------------------|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|
|                   |                   |                    |                                                                                          | B10                    | B13 | B16 | B20 | B25 | C10 | C13 | C16 | C20 | C25 | D10 | D13 | D16 | D20 | D25 |           |
| BK-BEN022-A0350AR | 10.85A            | 238us              | AC 230V, Full load, Cold start, T <sub>a</sub> ≤ 30°C, MCB is not installed side by side | 24                     | 31  | 39  | 48  | 60  | 40  | 52  | 65  | 81  | 101 | 60  | 78  | 96  | 121 | 151 |           |
| BK-BEN040-A0350AR | 18.1A             | 226us              |                                                                                          | 15                     | 20  | 24  | 30  | 38  | 25  | 33  | 40  | 50  | 63  | 36  | 47  | 57  | 72  | 90  |           |
| BK-BEN060-A0350AR | 23A               | 242us              |                                                                                          | 11                     | 12  | 18  | 22  | 27  | 18  | 24  | 29  | 37  | 46  | 24  | 31  | 38  | 48  | 60  |           |
| BK-BEN080-A0550AR | 19.81A            | 268us              |                                                                                          | 13                     | 17  | 20  | 25  | 32  | 21  | 27  | 34  | 42  | 52  | 21  | 27  | 34  | 42  | 52  |           |

### Remarks

- The number of drives mounted under different MCBs in the table is the maximum value. Please do not exceed this number during installation.
- Calculation uses typical values from ABB series S200 as a reference.
- Different brands and models of miniature circuit breakers, the number of drives mounted will be slightly different.
- If the ambient temperature of the MCB installation exceeds 30°C or multiple MCBs are installed side by side, the number of drives mounted will be reduced and the calculation needs to be recalculated.
- Electrician's usually consider Type B for household lighting and Type C for commercial lighting application.



## Functions

### Output short-circuit behaviour

- Output short-circuit will not damage the driver.
- After removing the short circuit fault, the driver will automatically resume output.

### Output no-load operation

- Output no-load will not damage the driver.
- Please turn off the driver first if you need to connect the LED load.

## Insulation between circuits

| Isolation | Input | Output | Case  |
|-----------|-------|--------|-------|
| Input     | -     | -      | Basic |
| Output    | -     | -      | Basic |
| Case      | Basic | Basic  | -     |

## DIP-switch & output current

### BK-BEN022-A0350AR

| Pin(W)<br>typ. | Output    |                         |              | 1  | 2  | 3  | Current<br>accuracy |
|----------------|-----------|-------------------------|--------------|----|----|----|---------------------|
|                | Prated(W) | I <sub>rated</sub> (mA) | Voltage(Vdc) |    |    |    |                     |
| 16.9           | 14.40     | 200                     | 39-72        | -- | -- | ON | ±10%                |
| 20.7           | 18.00     | 250                     | 39-72        | -- | ON | -- | ±6%                 |
| 24.5           | 21.60     | 300                     | 39-72        | ON | -- | -- | ±6%                 |
| 25.9           | 22.75     | 350 ★                   | 39-65        | -- | -- | -- | ±5%                 |

### BK-BEN040-A0350AR

| Pin(W)<br>typ. | Output    |                         |              | 1  | 2  | 3  | Current<br>accuracy |
|----------------|-----------|-------------------------|--------------|----|----|----|---------------------|
|                | Prated(W) | I <sub>rated</sub> (mA) | Voltage(Vdc) |    |    |    |                     |
| 25.3           | 22.8      | 200                     | 54-114       | -- | -- | ON | ±10%                |
| 31.3           | 28.5      | 250                     | 54-114       | -- | ON | -- | ±6%                 |
| 37.4           | 34.2      | 300                     | 54-114       | ON | -- | -- | ±6%                 |
| 43.6           | 39.9      | 350 ★                   | 54-114       | -- | -- | -- | ±5%                 |

### BK-BEN060-A0350AR

| Pin(W)<br>typ. | Output    |                         |              | 1  | 2  | 3  | Current<br>accuracy |
|----------------|-----------|-------------------------|--------------|----|----|----|---------------------|
|                | Prated(W) | I <sub>rated</sub> (mA) | Voltage(Vdc) |    |    |    |                     |
| 44.0           | 40.0      | 200                     | 100-200      | -- | -- | ON | ±10%                |
| 54.6           | 50.0      | 250                     | 100-200      | -- | ON | -- | ±6%                 |
| 65.2           | 60.0      | 300                     | 100-200      | ON | -- | -- | ±6%                 |
| 65.4           | 60.2      | 350 ★                   | 100-172      | -- | -- | -- | ±5%                 |

### BK-BEN080-A0550AR

| Pin(W)<br>typ. | Output    |                         |              | 1  | 2  | 3  |
|----------------|-----------|-------------------------|--------------|----|----|----|
|                | Prated(W) | I <sub>rated</sub> (mA) | Voltage(Vdc) |    |    |    |
| 46.13          | 43.20     | 200                     | 50-216       | ON | ON | ON |
| 57.66          | 54.00     | 250                     | 50-216       | -- | ON | ON |
| 69.19          | 64.80     | 300                     | 50-216       | ON | -- | ON |
| 80.73          | 75.60     | 350                     | 50-216       | -- | -- | ON |
| 85.42          | 80.00     | 400                     | 50-200       | ON | ON | -- |
| 85.05          | 79.65     | 450                     | 50-177       | -- | ON | -- |
| 85.42          | 80.00     | 500                     | 50-160       | ON | -- | -- |
| 85.16          | 79.75     | 550 ★                   | 50-145       | -- | -- | -- |

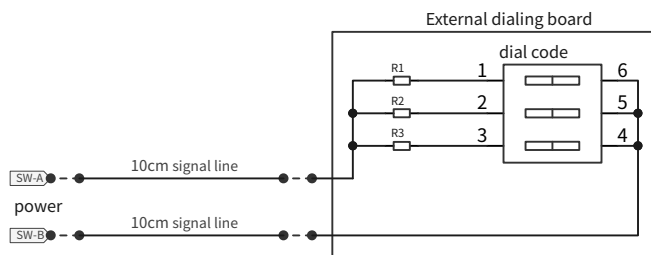
### Remarks:

- ★ It means that this item is the factory default current.
- It means that this channel is OFF.

## External DIP-switch parameters

Note:

- The wiring length of the external drawing code shall not exceed 10cm and the EMC of the power supply must be confirmed with the whole lamp.
- Custom currents must be re-matched with resistance values and confirmed with the manufacturer
- It is recommended that the current between each gear should be  $\geq 50\text{mA}$ .



BEN022-A

|        | Switching selection sheet |          |          |
|--------|---------------------------|----------|----------|
| Irated | 1                         | 2        | 3        |
| 200mA  | —                         | —        | R3:11.6K |
| 250mA  | —                         | R2:14.4K | —        |
| 300mA  | R1:17.6K                  | —        | —        |
| 350mA  | —                         | —        | —        |

BEN040-A

|        | Switching selection sheet |        |          |
|--------|---------------------------|--------|----------|
| Irated | 1                         | 2      | 3        |
| 200mA  | —                         | —      | R3:11.5K |
| 250mA  | —                         | R2:14K | —        |
| 300mA  | R1:17.1K                  | —      | —        |
| 350mA  | —                         | —      | —        |

BEN060-A

|        | Switching selection sheet |          |          |
|--------|---------------------------|----------|----------|
| Irated | 1                         | 2        | 3        |
| 200mA  | —                         | —        | R3:11.6K |
| 250mA  | —                         | R2:14.5K | —        |
| 300mA  | R1:17.3K                  | —        | —        |
| 350mA  | —                         | —        | —        |

BEN080-A Fixed resistance of dial gear

|        |        |         |
|--------|--------|---------|
| R1     | R2     | R3      |
| R1:30K | R2:62K | R3:120K |

## Label

BEN022-A

### INPUT

☐ AC/L/DC+  
☐ AC/N/DC-  
☐ NC  
☒ Ⓢ

wire prep. 0.5-1.0mm<sup>2</sup>



8.9mm



**Non-isolated Constant Current LED Driver**  
**MODEL: BK-BEN022-A0350A**

INPUT: 200-240V ~ 50/60Hz 0.135A Max.  
 $\lambda$ : 0.75C-0.95

OUTPUT: 39-65V ~ 350mA 22.75W Max.

Other ratings see selection sheet

For LED modules use only  
[www.bokedriver.com](http://www.bokedriver.com)

MADE IN CHINA






































































































































































BEN040-A

### INPUT

- ACL/DC+
- ACN/DC-
- NC
- ⊕

wire prep. 0.5-1.0mm<sup>2</sup>



9mm



**Non-isolated Constant Current LED Driver**  
**MODEL: BK-BEN40-A0350AR**  
**INPUT: 200-240V ~ 0.50/60Hz 0.225A Max.**  
 $\lambda$ : 0.8C-0.95  
**OUTPUT: 54-114V ~ 350mA 39.9W Max.**  
 Other ratings see selection sheet

For LED Modules use only  
[www.bokedriver.com](http://www.bokedriver.com)  
**MADE IN CHINA**



**BOKE Drivers Co., Ltd.**  
 Address: 2nd and 3rd Floor, No.51,  
 Xihuian 5th Road, South District,  
 528455 Zhongshan City, Guangdong, CHINA

### OUTPUT

150VDC Max.

- SW- ○
- SW-B
- LED+ ○
- LED-

wire prep. 0.5-1.0mm<sup>2</sup>



9mm

Switching selection sheet

| Input |        | Output |         | Switch |
|-------|--------|--------|---------|--------|
| Input | Output | Output | Output  |        |
| 200V  | 200V   | 54V    | 54-114V | 1-2    |
| 220V  | 220V   | 54V    | 54-114V | 1-3    |
| 240V  | 240V   | 54V    | 54-114V | 1-4    |
| 200V  | 200V   | 54V    | 54-114V | 2-3    |
| 220V  | 220V   | 54V    | 54-114V | 2-4    |
| 240V  | 240V   | 54V    | 54-114V | 3-4    |

BEN060-A

### INPUT

- ☐ ACL/DC+
- ☐ ACN/DC-
- ☐ NC
- ☐ Ⓢ

wire prep.  
0.5-1.0mm"





Non-isolated Constant Current LED Driver  
 MODEL: BK-BEN060-A0350AR  
 INPUT: 200-240V  $\approx$  0/50/60Hz 0.34A Max.  $\lambda$ : 0~8C-0.95  
 OUTPUT: 100-172V  $\approx$  350mA 60.2W Max.  
 Other ratings see selection sheet

For LED Modules use only  
[www.bokedriver.com](http://www.bokedriver.com)  
 MADE IN CHINA















BOKE Drivers Co., Ltd.  
 Address: 2nd and 3rd Floor, No.51, Xihuan 5th Road,  
 South District, 528455 Zhongshan City, Guangdong, CHINA

### OUTPUT

250VDC Max.

- ☐ SW-A
- ☐ SW-B
- ☐ LED+
- ☐ LED-

wire prep.  
0.5-1.0mm"



Selection selection sheet

| Input | Output | Switch |         |   |   |
|-------|--------|--------|---------|---|---|
| From  | To     | Model  | 1       | 2 |   |
| 44    | 50.0   | 250    | 100-200 | A | B |
| 54    | 50.0   | 250    | 100-200 | A | B |
| 64    | 50.0   | 250    | 100-200 | A | B |
| 74    | 60.2   | 250    | 100-172 | A | B |

BEN080-A

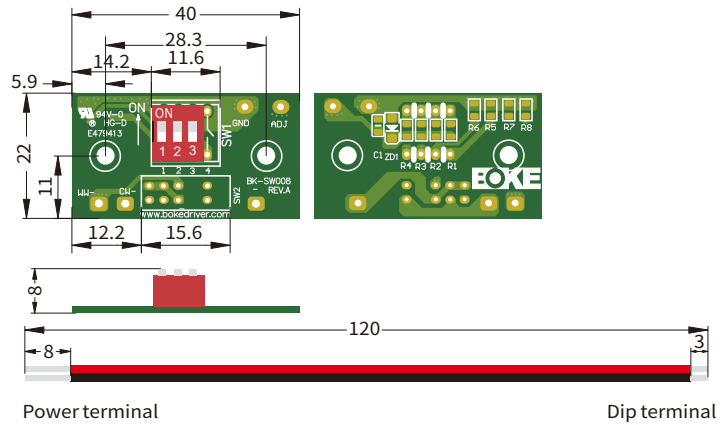
|                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>INPUT</b></p> <ul style="list-style-type: none"> <li>○ ACL/DC+</li> <li>○ ACN/DC-</li> <li>○ NC</li> <li>○ ⊕</li> </ul> <p>wire prep.<br/>0.5~1.0mm<sup>2</sup></p>  <p><b>MADE IN CHINA</b></p> | <p><b>BOKE</b></p> <p>Non-isolated Constant Current LED Driver<br/>MODEL: BK-BEN080-A0550AR</p> <p>INPUT: 200~240V ≈ 0.5/50/60Hz 0.433A Max. λ: 0.6C-0.9S</p> <p>OUTPUT: 50~145V ≈ 550mA 79.75W Max.</p> <p>Other ratings see selection sheet</p> <p>For LED Modules use only</p> <p><a href="http://www.bokedriver.com">www.bokedriver.com</a></p> | <br><br><br><br><br><br><br><br><br> | <p><b>OUTPUT</b><br/>250VDC Max.</p> <ul style="list-style-type: none"> <li>SW-A ○</li> <li>SW-B ○</li> <li>LED+ ○</li> <li>LED- ○</li> </ul> <p>wire prep.<br/>0.5~1.0mm<sup>2</sup></p>  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Optional accessories

### DIP switch



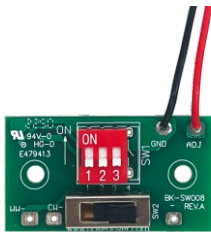
(Model: BK-SW010A)



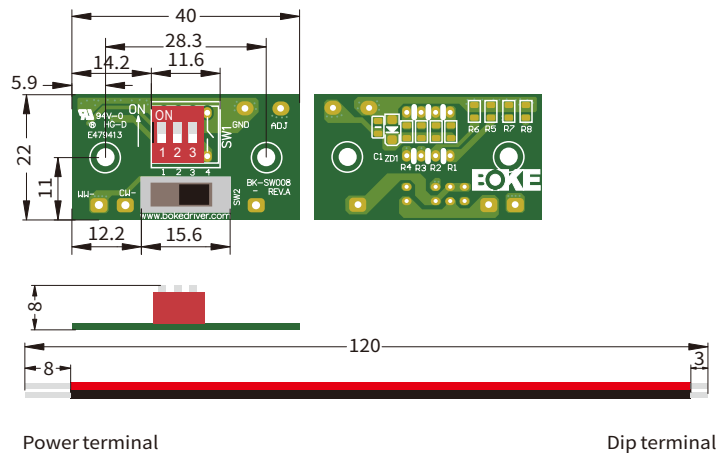
Power terminal

Dip terminal

### DIP switch+CCT switch



(Model: BK-SW010B)



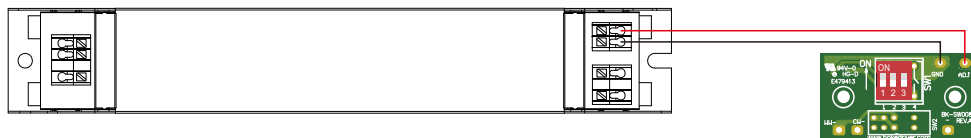
Power terminal

Dip terminal

Unit:mm

## Installation diagram of accessories

(Model: BK-SW010A)

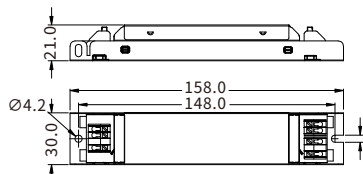


## Mechanical Specification

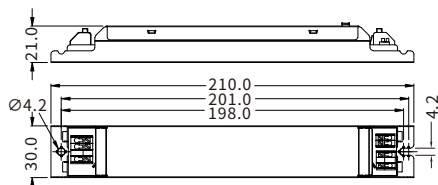
### Size

Unit:mm

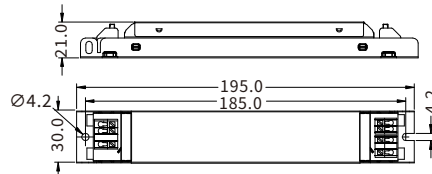
BEN022-A/BEN040-A



BEN080-A



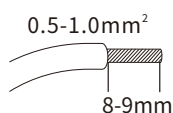
BEN060-A



### INPUT

| Numbering | function | colour |
|-----------|----------|--------|
| 1         | ACL/DC+  | orange |
| 2         | ACN/DC-  | orange |
| 3         | NC       | grey   |
| 4         | FG       | grey   |

Input wire



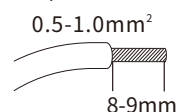
### OUTPUT

| Numbering | function | colour |
|-----------|----------|--------|
| 1         | SW-A     | green  |
| 2         | SW-B     | black  |

| Numbering | function | colour |
|-----------|----------|--------|
| 1         | LED+     | red    |
| 2         | LED-     | black  |

Output wire



## Installation note

### Hot plug-in

- Hot plug-in is not supported due to residual output voltage of > 0 V.

### Installation requirements

- The driver should be installed in a dry, acid-free, oil-free, fat-free environment.
- The installation ambient temperature of the driver shall not exceed the value of Ta at any time.
- The temperature of the mounting surface of the driver should be lower than the temperature of Ta.
- The driver should keep a certain distance from the heating stuff (such as the luminaire radiator).

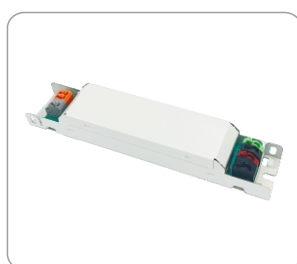
### Wiring guidelines

- All connections must be kept as short as possible to ensure good EMI behaviour.
- Mains leads should be kept apart from LED Driver and other leads (ideally 5 – 10 cm distance)
- Max. length of output wires is 2 m.
- Incorrect wiring can damage LED modules.

### Replace LED module

1. Mains off
2. Wait more than 15 seconds
3. Remove LED module
4. Connect LED module again

## Packaging



Product



Packaging



20pcs\*4boxes=80pcs/CTN  
20pcs\*3boxes=60pcs/CTN  
20pcs\*2boxes=40pcs/CTN

| Model    | Product size   | Weight | Packaging size  | Carton size      | Qty/carton | N.W    | G.W    |
|----------|----------------|--------|-----------------|------------------|------------|--------|--------|
| BEN022-A | L158*W30*H21mm | 87g    | L214*W175*H78mm | L335*W230*H195mm | 80pcs      | 6.96KG | 8.26KG |
| BEN040-A | L158*W30*H21mm | 96g    | L214*W175*H78mm | L335*W230*H195mm | 80pcs      | 7.68KG | 8.98KG |
| BEN060-A | L195*W30*H21mm | 125g   | L215*W210*H78mm | L235*W225*H175mm | 40pcs      | 5.00KG | 6.32KG |
| BEN080-A | L210*W30*H21mm | 147g   | L230*W213*H78mm | L255*W250*H240mm | 60pcs      | 8.82KG | 10.0KG |

### Additional information

1. The life and MTBF of the product are for reference only, and do not represent a warranty statement.
2. For more information, please send an email to [info@bokedriver.com](mailto:info@bokedriver.com).