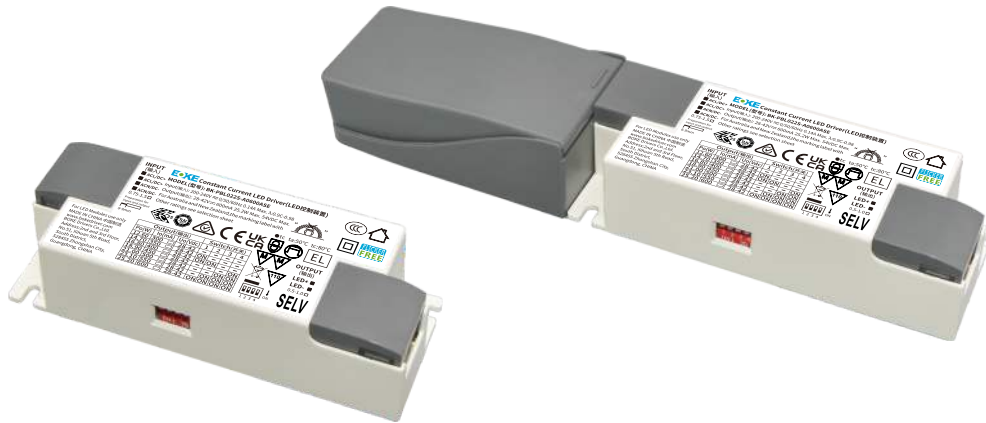


Constant current independent driver

PBL(S) Series suffix SE



Features

- Multi-level current output can be realized by DIP-switch
- Flicker-free output, which meets the requirement of ErP standard
- Two-stage and isolation, more stable and safer
- Dual input terminal design, Support loop-in and loop-out wiring without junction box
- Optional Junction Box: Support up to 2.5mm² Cable and Loop-through Function
- Withstand 380VAC high voltage short-time shock
- Screw-free design, easy wiring
- High PF, high efficiency, low THD
- Pushable strain relief design, easy to crimp and install
- Compact housing design
- SELV and Class II design, suitable for use outside of the luminaires
- 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,overload,over temperature protection)

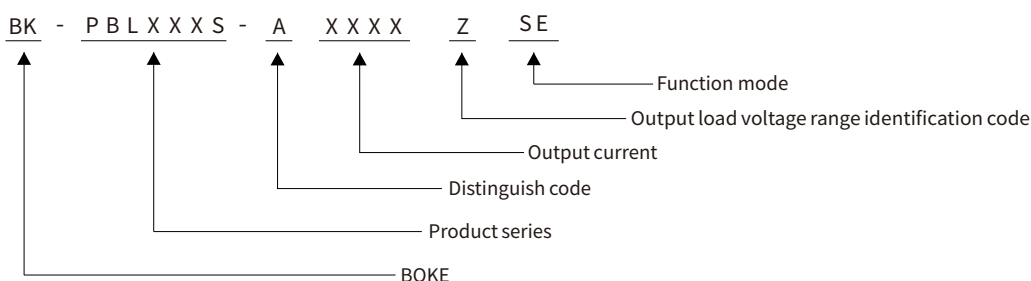
Suitable for lights

- Suitable for lights with independent drivers such as downlights, spotlights, panel lights, etc
- It is necessary to evaluate the chamber temperature of the light when it is used in the built-in

Typical applications

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

Model coding rules of PBL(S) series



Model list

Model	Input voltage	Output power	Output voltage	Output current	Dimension
BK-PBL022S-A0300ASE	200-240VAC/DC	12.6W MAX.	28-42VDC	0.1-0.3A	L123*W46*H30mm
BK-PBL022S-A0600ASE	200-240VAC/DC	25.2W MAX.	28-42VDC	0.3-0.6A	L123*W46*H30mm
BK-PBL022S-A0400BSE	200-240VAC/DC	21.6W MAX.	36-54VDC	0.15-0.4A	L123*W46*H30mm
BK-PBL040S-A1100ASE	200-240VAC/DC	41.8W MAX.	28-42VDC	0.5-1.1A	L123*W46*H30mm
BK-PBL040S-A0900BSE	200-240VAC/DC	41.6W MAX.	36-54VDC	0.4-0.9A	L123*W46*H30mm
BK-PBL060S-A1650ASE	200-240VAC/DC	63W MAX.	28-42VDC	0.9-1.65A	L142*W50*H30mm

Technical data

Product model	BK-PBL022S-A0300ASE
Output parameters	
Regulation method	Constant Current
Rated output current range	0.1-0.3A, see the DIP-switch for details
Rated output voltage range	28-42VDC, see the DIP-switch for details
Rated output power	12.6W Max, see the DIP-switch for details
Output current adjustment	DIP S.W (7 levels)
Output current ripple I _{peak-peak} (typ.)	±3%(90kHz)
Output current accuracy	±5%
Linear regulation	±5%
Load regulation	±5%
No load output voltage	54VDC
Flicker-free(typ.)	Flickering percent(IEEE 1789)=0.235%(100Hz), Flicker index(IEEE 1789)=0.001(100Hz), Pst LM=0.001, SVM=0.007, (The above parameters are obtained from testing the panel lights)
Input parameters	
Rated input voltage range	200-240VAC 200-240VDC
Input voltage range	180-264VAC 180-264VDC
Input voltage shock	<380 V AC
Input current	<0.14A (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.)	10%, see the electrical values below for details
Efficiency(typ.)	91.5%, see the electrical values below for details
In-rush current(typ.)	9.7A peak, 288us duration(50 % I _{peak}), 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	Full load(P _{in}):13.8W, No load(P _{no}):N/A, On stand-by(P _{sb}): N/A, Network stand-by(P _{net}): N/A
Safety	
Withstand voltage	I/P-O/P(LED):3750V AC
Mains surge capability	L-N:1KV(Performance criterion:A), L-N:2KV(Performance criterion:B)(90°/270°, 5 times each with an interval of 60s)
Leakage current(typ.)	0.4mA
Isolation resistance	I/P-O/P:100MΩ/500Vdc/25°C/70%RH
Control interface	
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
Emergency support	
Central emergency system	Supported
Self-contained emergency	Supported
Environment & Life time	
Operating temperature	T _a =-20-50°C
Case temperature	T _c =80°C
Operating humidity	5-85% RH, non-condensing
Storage temp./humidity	-40-80°C, 5-85% RH, non-condensing
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
Certifications and standards	
Compliant certification	CE, ENEC, UKCA, RCM, CCC, EL
Safety	GB/T 19510.1, GB/T 19510.213, EN61347-1, EN61347-2-13, EN62384
EMC	GB/T 17743, GB17625.1, EN55015, 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

Technical data

Product model	BK-PBL022S-A0600ASE
Output parameters	
Regulation method	Constant Current
Rated output current range	0.3-0.6A, see the DIP-switch for details
Rated output voltage range	28-42VDC, see the DIP-switch for details
Rated output power	25.2W Max, see the DIP-switch for details
Output current adjustment	DIP S.W (7 levels)
Output current ripple I _{peak-peak} (typ.)	±2%(110kHz)
Output current accuracy	±5%
Linear regulation	±5%
Load regulation	±5%
No load output voltage	54VDC
Flicker-free(typ.)	Flickering percent(IEEE 1789)=0.240%(100Hz), Flicker index(IEEE 1789)=0.001(100Hz), Pst LM = 0.000, SVM = 0.008, (The above parameters are obtained from testing the panel lights)
Input parameters	
Rated input voltage range	200-240VAC 200-240VDC
Input voltage range	180-264VAC 180-264VDC
Input voltage shock	<380 V AC
Input current	<0.14A (Rated input voltage)
Input frequency	0/50/60Hz
Input PF/Input DF(typ.)	PF: 0.98, DF: 0.99, see the electrical values below for details
Input THD(typ.)	7%, see the electrical values below for details
Efficiency(typ.)	92%, see the electrical values below for details
In-rush current(typ.)	10.5A peak, 240us duration(50 % I _{peak}), 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	Full load(Pin):27.4W, No load(Pno):N/A, On stand-by(Psb) : N/A, Network stand-by(Pnet) : N/A
Safety	
Withstand voltage	I/P-O/P(LED):3750V AC
Mains surge capability	L-N:2KV(Performance criterion:A)(90°/270°, 5 times each with an interval of 60s)
Leakage current(typ.)	0.43mA
Isolation resistance	I/P-O/P:100MΩ/500Vdc/25°C/70%RH
Control interface	
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
Emergency support	
Central emergency system	Supported
Self-contained emergency	Supported
Environment & Life time	
Operating temperature	Ta=-20-50°C
Case temperature	Tc=80°C
Operating humidity	5-85% RH, non-condensing
Storage temp./humidity	-40-80°C, 5-85% RH, non-condensing
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
Certifications and standards	
Compliant certification	CE, ENEC, UKCA, RCM, CCC, EL
Safety	GB/T 19510.1, GB/T 19510.213, EN61347-1, EN61347-2-13, EN62384
EMC	GB/T 17743, GB17625.1, EN55015, 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

Technical data

Product model	BK-PBL022S-A0400BSE
Output parameters	
Regulation method	Constant Current
Rated output current range	0.15-0.4A, see the DIP-switch for details
Rated output voltage range	36-54VDC, see the DIP-switch for details
Rated output power	21.6W Max, see the DIP-switch for details
Output current adjustment	DIP S.W(6 levels)
Output current ripple I _{peak-peak} (typ.)	±3%(100kHz)
Output current accuracy	±5%
Linear regulation	±5%
Load regulation	±5%
No load output voltage	59VDC
Flicker-free(typ.)	Flickering percent(IEEE 1789)=0.407%(100Hz), Flicker index(IEEE 1789)=0.001(100Hz), Pst LM=0.010, SVM=0.015, (The above parameters are obtained from testing the panel lights)
Input parameters	
Rated input voltage range	200-240VAC 200-240VDC
Input voltage range	180-264VAC 180-264VDC
Input voltage shock	<380 V AC
Input current	<0.12A (Rated input voltage)
Input frequency	0/50/60Hz
Input PF/Input DF(typ.)	PF: 0.98, DF:0.99 , see the electrical values below for details
Input THD(typ.)	7.5% , see the electrical values below for details
Efficiency(typ.)	93% , see the electrical values below for details
In-rush current(typ.)	10.15A peak ,236us duration(50 % I _{peak}), 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	Full load(P _{in}):23.2W, No load(P _{no}):N/A, On stand-by(P _{sb}) : N/A, Network stand-by(P _{net}) : N/A
Safety	
Withstand voltage	I/P-O/P(LED):3750V AC
Mains surge capability	L-N:2KV(Performance criterion:A)(90°/270°, 5 times each with an interval of 60s)
Leakage current(typ.)	0.65mA
Isolation resistance	I/P-O/P:100MΩ/500Vdc/25°C/70%RH
Control interface	
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
Emergency support	
Central emergency system	Supported
Self-contained emergency	Supported
Environment & Life time	
Operating temperature	T _a =-20-50°C
Case temperature	T _c =80°C
Operating humidity	5-85% RH, non-condensing
Storage temp./humidity	-40-80°C, 5-85% RH, non-condensing
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
Certifications and standards	
Compliant certification	CE, ENEC, UKCA, RCM, CCC, EL
Safety	GB/T 19510.1, GB/T 19510.213, EN61347-1, EN61347-2-13, EN62384
EMC	GB/T 17743 , GB17625.1, EN55015, 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

Technical data

Product model	BK-PBL040S-A1100ASE
Output parameters	
Regulation method	Constant Current
Rated output current range	0.5-1.1A, see the DIP-switch for details
Rated output voltage range	28-42VDC, see the DIP-switch for details
Rated output power	41.8W Max, see the DIP-switch for details
Output current adjustment	DIP S.W (13 levels)
Output current ripple I _{peak-peak} (typ.)	±3%(120kHz)
Output current accuracy	±5%
Linear regulation	±5%
Load regulation	±5%
No load output voltage	54VDC
Flicker-free(typ.)	Flickering percent(IEEE 1789)=0.246%(100Hz), Flicker index(IEEE 1789)=0.001(100Hz), Pst LM = 0.009, SVM = 0.009, (The above parameters are obtained from testing the panel lights)
Input parameters	
Rated input voltage range	200-240VAC 200-240VDC
Input voltage range	180-264VAC 180-264VDC
Input voltage shock	<380 V AC
Input current	<0.22A (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.)	93%, see the electrical values below for details
In-rush current(typ.)	19.1A peak, 220us duration(50 % I _{peak}), 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	Full load(P _{in}):44.9W, No load(P _{no}):N/A, On stand-by(P _{sb}): N/A, Network stand-by(P _{net}): N/A
Safety	
Withstand voltage	I/P-O/P(LED):3750V AC
Mains surge capability	L-N:2KV(Performance criterion:A)(90°/270°, 5 times each with an interval of 60s)
Leakage current(typ.)	0.43mA
Isolation resistance	I/P-O/P:100MΩ/500Vdc/25°C/70%RH
Control interface	
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
Emergency support	
Central emergency system	Supported
Self-contained emergency	Supported
Environment & Life time	
Operating temperature	T _a =-20-45°C
Case temperature	T _c =80°C
Operating humidity	5-85% RH, non-condensing
Storage temp./humidity	-40-80°C, 5-85% RH, non-condensing
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
Certifications and standards	
Compliant certification	CE, ENEC, UKCA, RCM, CCC, EL
Safety	GB/T 19510.1, GB/T 19510.213, EN61347-1, EN61347-2-13, EN62384
EMC	GB/T 17743, GB17625.1, EN55015, 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

Technical data

Product model	BK-PBL040S-A0900BSE
Output parameters	
Regulation method	Constant Current
Rated output current range	0.4-0.9A,see the DIP-switch for details
Rated output voltage range	36-54VDC,see the DIP-switch for details
Rated output power	41.6W Max,see the DIP-switch for details
Output current adjustment	DIP S.W(11 levels)
Output current ripple Ipeak-peak(typ.)	±3%(100kHz)
Output current accuracy	±5%
Linear regulation	±5%
Load regulation	±5%
No load output voltage	60VDC
Flicker-free(typ.)	Flickering percent(IEEE 1789)=0.232%(100Hz), Flicker index(IEEE 1789)=0.001(100Hz), Pst LM = 0.010, SVM = 0.005, (The above parameters are obtained from testing the panel lights)
Input parameters	
Rated input voltage range	200-240VAC 200-240VDC
Input voltage range	180-264VAC 180-264VDC
Input votage shock	<380 V AC
Input current	<0.22A (Rated input voltage)
Input frequency	0/50/60Hz
Input PF/Input DF(typ.)	PF: 0.98,DF:0.98 , see the electrical values below for details
Input THD(typ.)	7% , see the electrical values below for details
Efficiency(typ.)	93% , see the electrical values below for details
In-rush current(typ.)	16.4A peak ,212us 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	Full load(Pin):44.7W, No load(Pno):N/A, On stand-by(Psb) : N/A, Network stand-by(Pnet) : N/A
Safety	
Withstand voltage	I/P-O/P(LED):3750V AC
Mains surge capability	L-N:2KV(Performance criterion:A)(90°/270°, 5 times each with an interval of 60s)
Leakage current(typ.)	0.43mA
Isolation resistance	I/P-O/P:100MΩ/500Vdc/25°C/70%RH
Control interface	
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
Emergency support	
Central emergency system	Supported
Self-contained emergency	Supported
Environment & Life time	
Operating temperature	Ta=-20-45°C
Case temperature	Tc=80°C
Operating humidity	5-85% RH, non-condensing
Storage temp./humidity	-40-80°C, 5-85% RH, non-condensing
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
Certifications and standards	
Compliant certification	CE, ENEC, UKCA, RCM, CCC, EL
Safety	GB/T 19510.1,GB/T 19510.213, EN61347-1, EN61347-2-13, EN62384
EMC	GB/T 17743 , GB17625.1, EN55015, 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

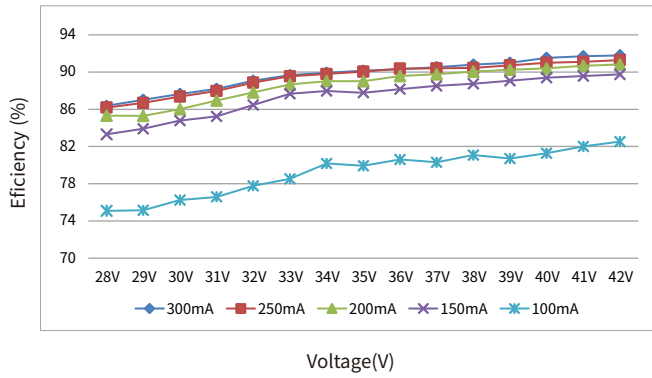
Technical data

Product model	BK-PBL060S-A1650ASE
Output parameters	
Regulation method	Constant Current
Rated output current range	0.9-1.65A, see the DIP-switch for details
Rated output voltage range	28-42VDC, see the DIP-switch for details
Rated output power	63W Max, see the DIP-switch for details
Output current adjustment	DIP S.W (16 levels)
Output current ripple I _{peak-peak} (typ.)	±3%(60kHz)
Output current accuracy	±5%
Linear regulation	±5%
Load regulation	±5%
No load output voltage	54VDC
Flicker-free(typ.)	Flickering percent(IEEE 1789)=0.244%(100Hz), Flicker index(IEEE 1789)=0.000(100Hz), Pst LM = 0.011, SVM = 0.008, (The above parameters are obtained from testing the panel lights)
Input parameters	
Rated input voltage range	200-240VAC 200-240VDC
Input voltage range	180-264VAC 180-264VDC
Input voltage shock	<380 V AC
Input current	<0.38A (Rated input voltage)
Input frequency	0/50/60Hz
Input PF/Input DF(typ.)	PF: 0.98, DF: 0.98, see the electrical values below for details
Input THD(typ.)	6.5%, see the electrical values below for details
Efficiency(typ.)	93.5%, see the electrical values below for details
In-rush current(typ.)	22.5A peak, 298us duration(50% I _{peak}), 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	Full load(P _{in}):67.4W, No load(P _{no}):N/A, On stand-by(P _{sb}):N/A, Network stand-by(P _{net}):N/A
Safety	
Withstand voltage	I/P-O/P(LED):3750V AC
Mains surge capability	L-N:1KV(Performance criterion:A), L-N:2KV(Performance criterion:B)(90°/270°, 5 times each with an interval of 60s)
Leakage current(typ.)	0.54mA
Isolation resistance	I/P-O/P:100MΩ/500Vdc/25°C/70%RH
Control interface	
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
Emergency support	
Central emergency system	Supported
Self-contained emergency	Supported
Environment & Life time	
Operating temperature	T _a =-20-45°C
Case temperature	T _c =85°C
Operating humidity	5-85% RH, non-condensing
Storage temp./humidity	-40-80°C, 5-85% RH, non-condensing
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
Certifications and standards	
Compliant certification	CE, ENEC, UKCA, RCM, CCC, EL
Safety	GB/T 19510.1, GB/T 19510.213, EN61347-1, EN61347-2-13, EN62384
EMC	GB/T 17743, GB17625.1, EN55015, 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

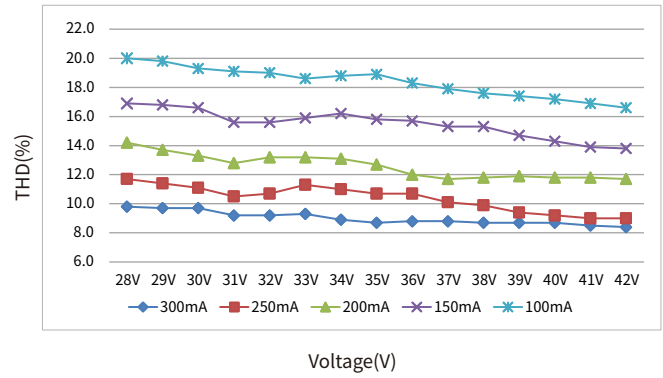
Electrical values

BK-PBL022S-A0300ASE

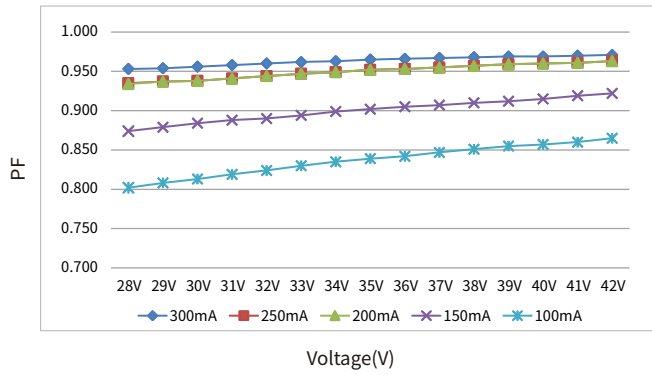
Efficiency vs voltage



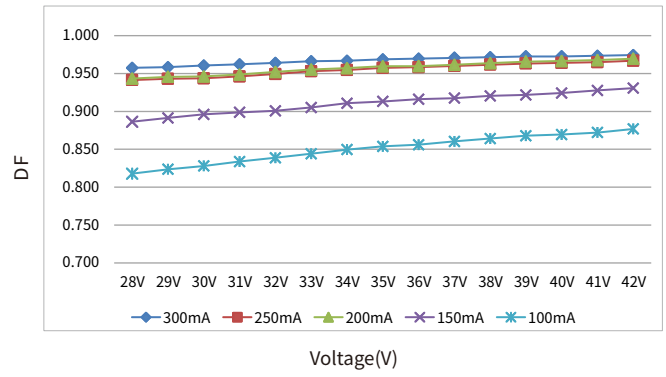
THD vs. voltage



Power factor vs. voltage

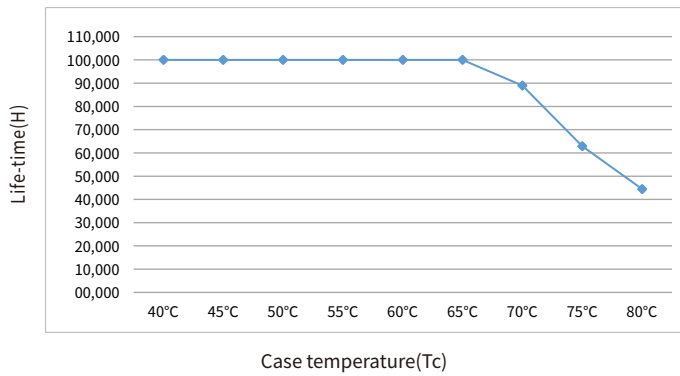


Displacement factor vs. voltage



Expected life-time

Life-time vs. case temperature



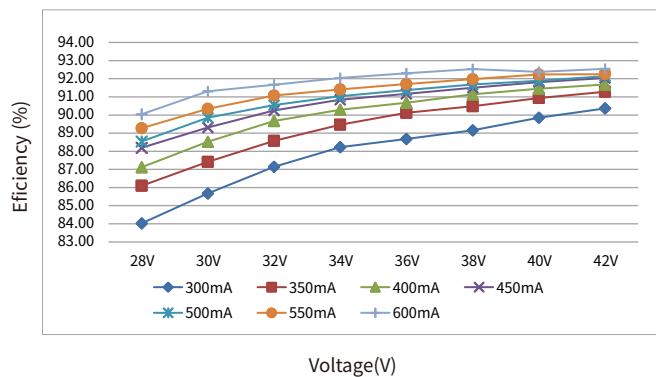
-The life-time of the LED driver is shown in the figure above (calculated based on the 90% survival rate).

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

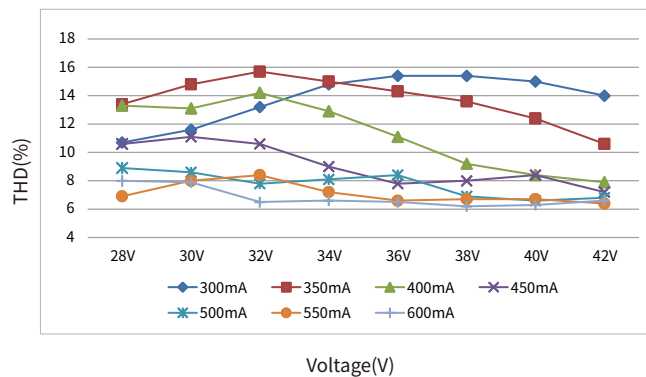
Electrical values

BK-PBL022S-A0600ASE

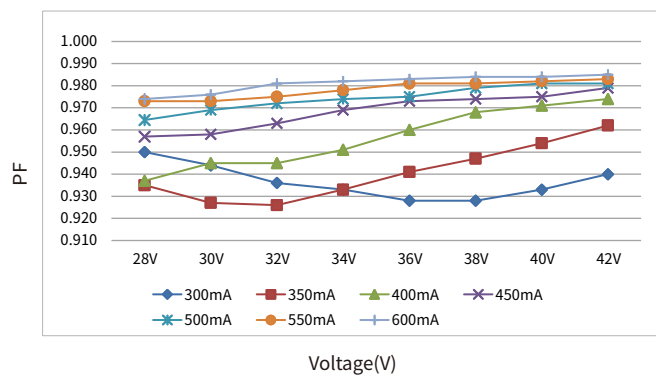
Efficiency vs voltage



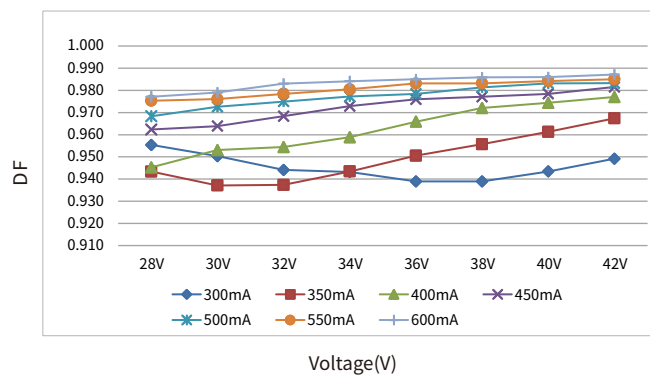
THD vs. voltage



Power factor vs. voltage

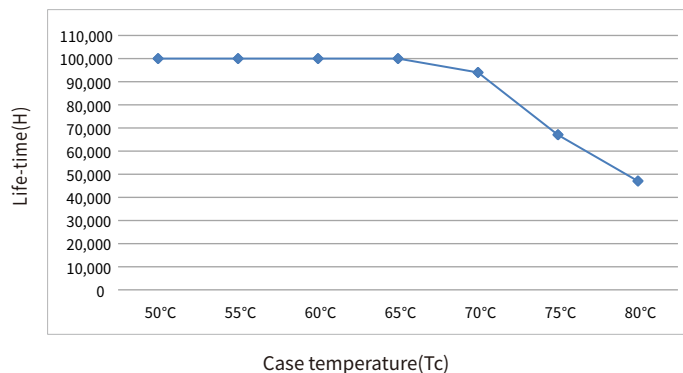


Displacement factor vs. voltage



Expected life-time

Life-time vs. case temperature



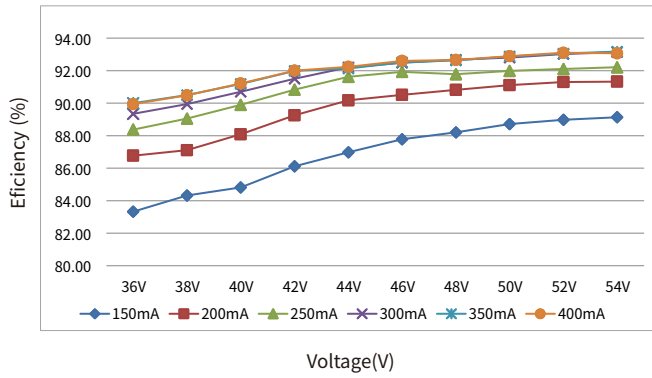
-The life-time of the LED driver is shown in the figure above (calculated based on the 90% survival rate).

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

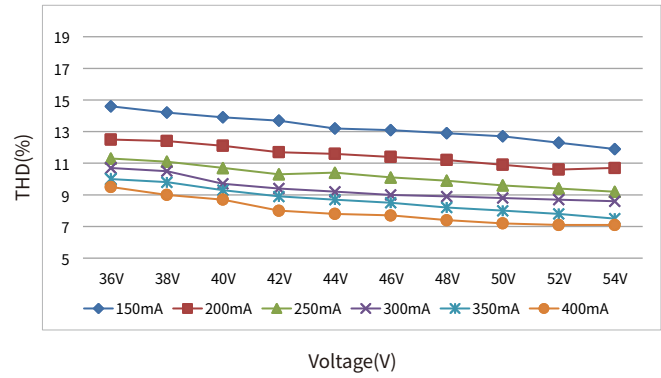
Electrical values

BK-PBL022S-A0400ABSE

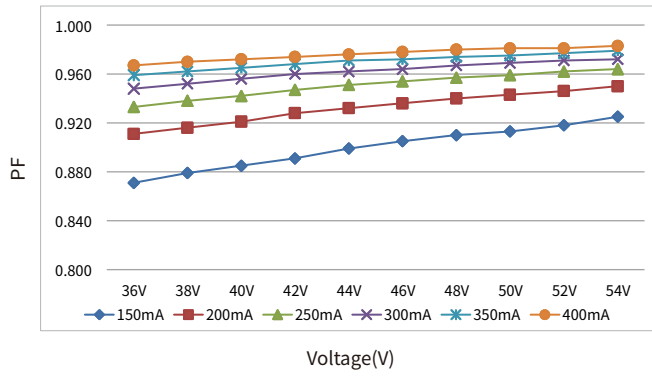
Efficiency vs voltage



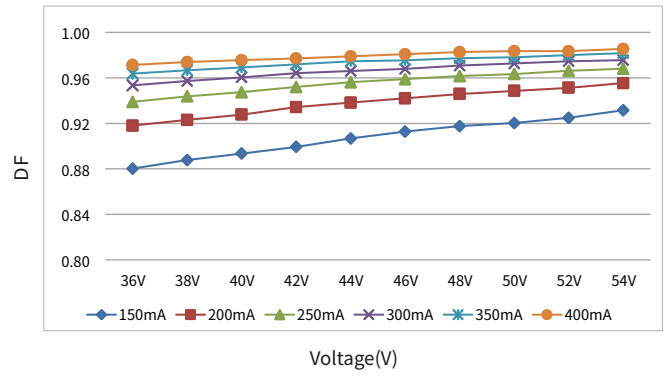
THD vs. voltage



Power factor vs. voltage

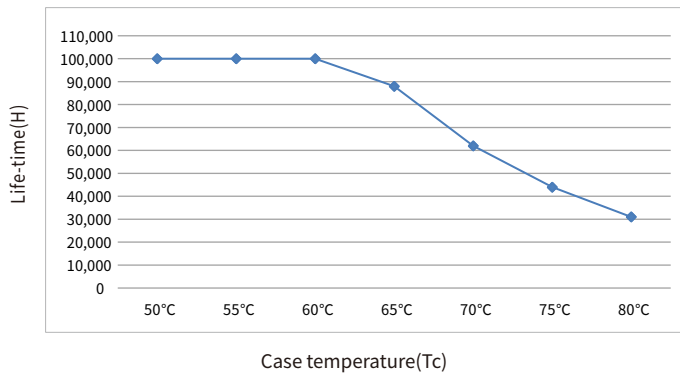


Displacement factor vs. voltage



Expected life-time

Life-time vs. case temperature



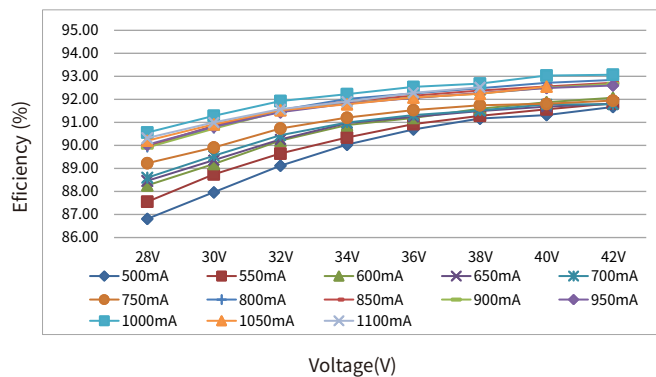
-The life-time of the LED driver is shown in the figure above (calculated based on the 90% survival rate).

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

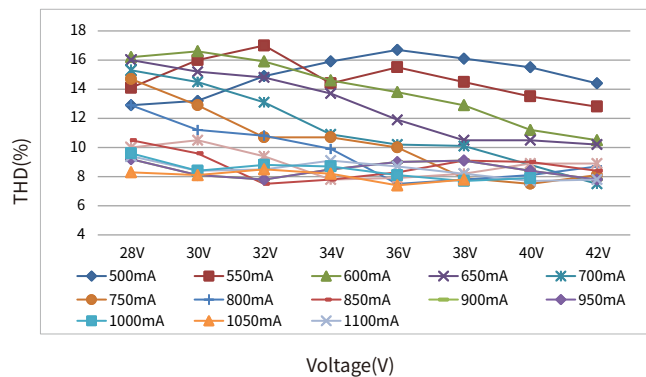
Electrical values

BK-PBL040S-A1100ASE

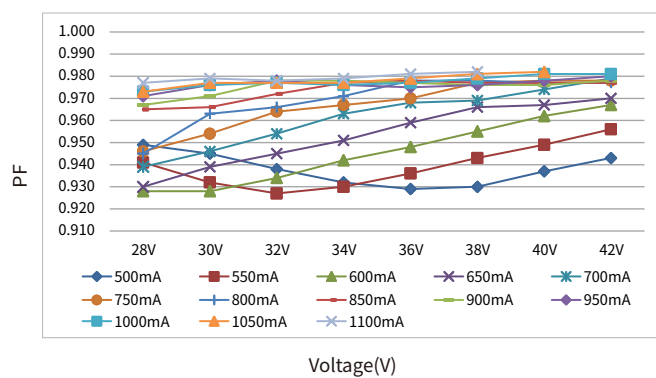
Efficiency vs voltage



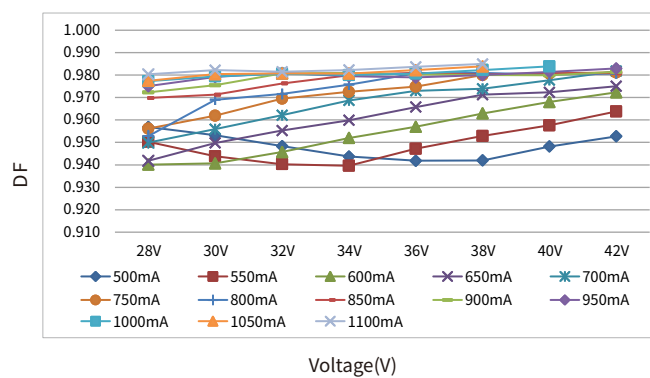
THD vs. voltage



Power factor vs. voltage

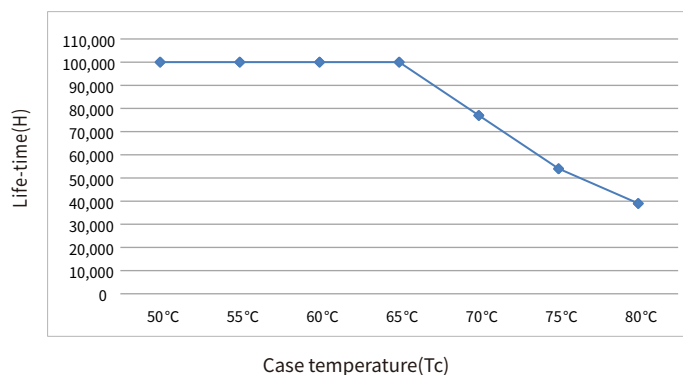


Displacement factor vs. voltage



Expected life-time

Life-time vs. case temperature



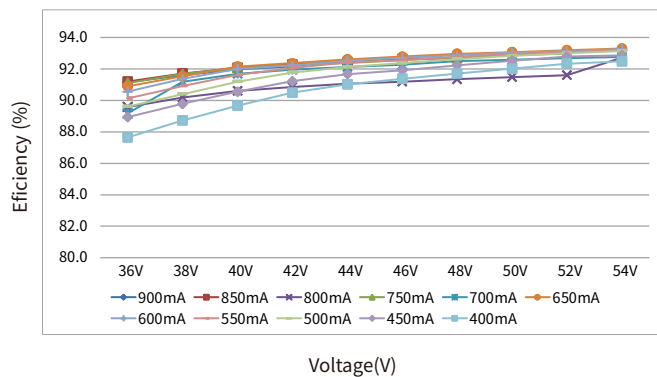
-The life-time of the LED driver is shown in the figure above (calculated based on the 90% survival rate).

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

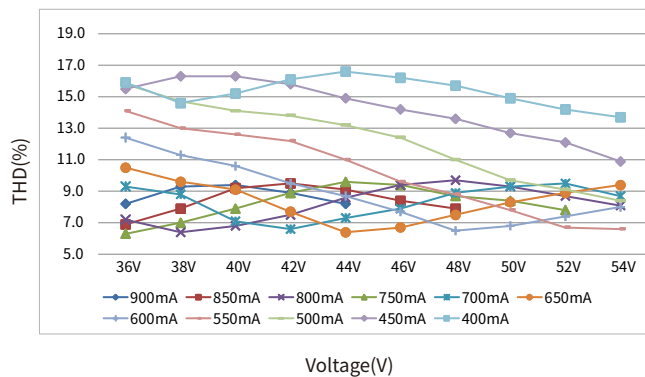
Electrical values

BK-PBL040S-A0900BSE

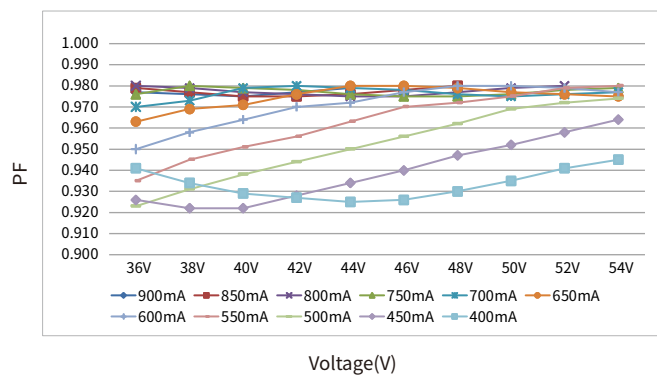
Efficiency vs voltage



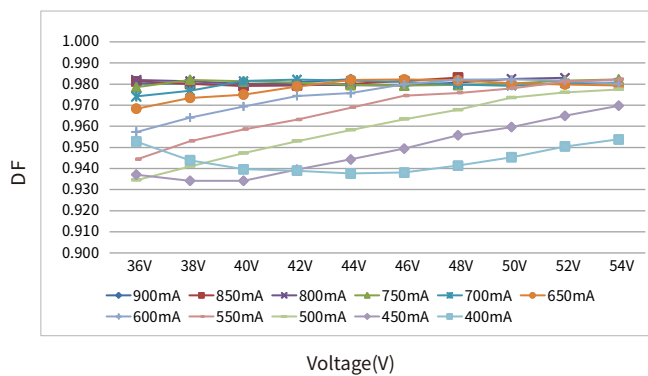
THD vs. voltage



Power factor vs. voltage

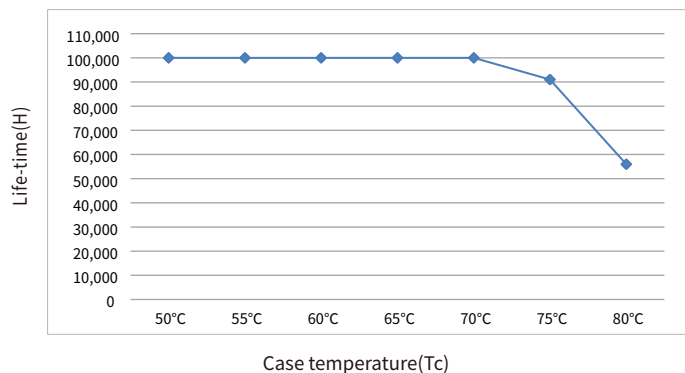


Displacement factor vs. voltage



Expected life-time

Life-time vs. case temperature



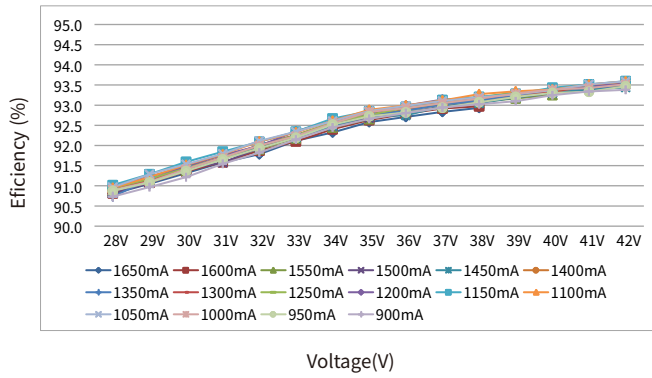
-The life-time of the LED driver is shown in the figure above (calculated based on the 90% survival rate).

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

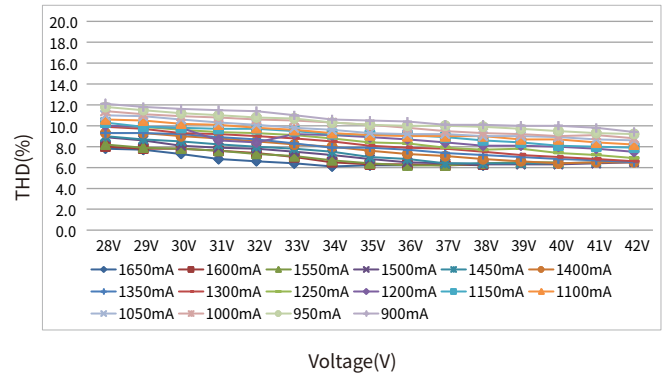
Electrical values

BK-PBL060S-A1650ASE

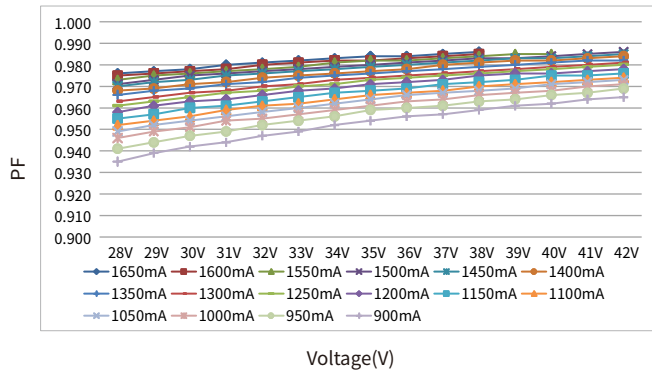
Efficiency vs. voltage



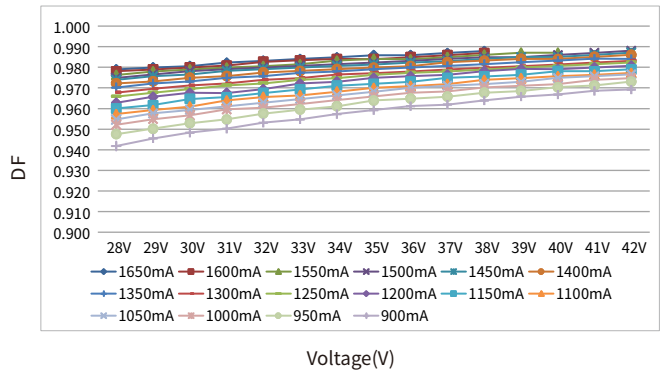
THD vs. voltage



Power factor vs. voltage

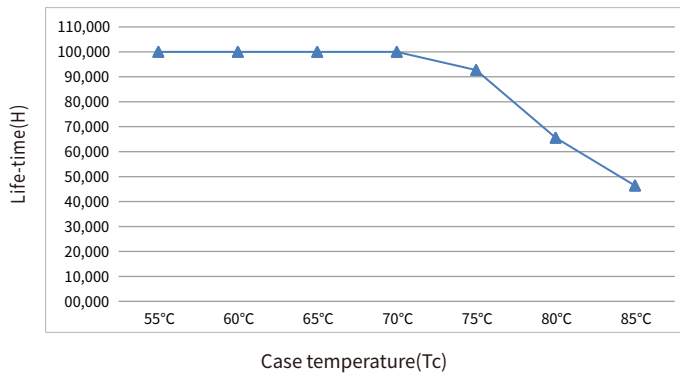


Displacement factor vs. voltage



Expected life-time

Life-time vs. case temperature

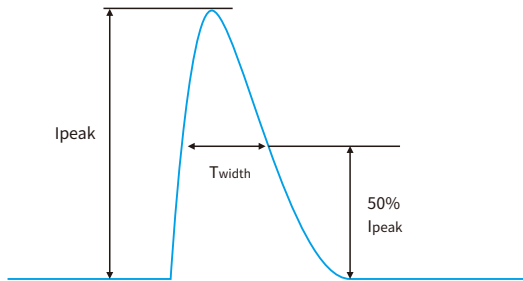


-The life-time of the LED driver is shown in the figure above (calculated based on the 90% survival rate).

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

Surge

Model	Ipeak	Twidth	Condition	Relative number of MCB/pcs															
				B10	B13	B16	B20	B25	C10	C13	C16	C20	C25	D10	D13	D16	D20	D25	
BK-PBL022S-A0300ASE	9.7A	288us	AC 230V,Full load, Cold start,Ta≤30°C, MCB is not installed side by side	24	31	38	48	60	40	52	64	80	100	80	104	128	160	200	
BK-PBL022S-A0600ASE	10.5A	240us		28	36	45	56	70	46	60	74	93	116	66	86	105	132	165	
BK-PBL022S-A0400BSE	10.15A	236us		34	44	54	67	84	56	73	89	112	140	86	111	137	171	214	
BK-PBL040S-A1100ASE	19.1A	220us		17	22	27	34	42	28	37	45	57	71	39	51	63	78	98	
BK-PBL040S-A0900BSE	16.4A	212us		20	27	33	41	51	34	44	55	68	85	40	52	64	80	100	
BK-PBL060S-A1650ASE	22.5A	298us		10	13	16	20	25	16	21	26	33	41	26	34	42	53	66	



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.

Output overload protection

- The LED driver turns off the output if the output voltage range is exceeded.
- The output will be activated again after restart the LED driver.

Output over temperature

- When the operating temperature exceeds the over temperature protection point inside the power supply IC, the power supply enters protection state such as output derating, output hiccup or output shutdown. After the external temperature is normal, restart and resume operation.

Driver restart method

- Through the AC input: disconnect the AC of the driver and power it again.

Insulation between circuits

Isolation	Input	Output	Case
Input	-	Double	Double
Output	Double	-	Basic
Case	Double	Basic	-

Label

BK-PBL022S-A0300ASE

INPUT (输入)

■ **ACL/DC+** MODEL(型号): BK-PBL022S-A0300ASE

■ **ACL/DC-** Input(输入): 200-240V $\approx$ 0.50/60Hz 0.14A Max. λ : 0.85C-0.97

■ **ACN/DC-** Output(输出): 28-42V $\approx$ 300mA 12.6W Max. 54VDC Max.

■ **ACN/DC-** For Australia and New Zealand, the marking label with 0.75-1.5

Other ratings see selection sheet

Preparation for input and output: 8-9mm

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

BOKE Constant Current LED Driver (LED控制装置)

● t_c: 50°C t_c: 80°C

Output(输出)

Po(W)	Io(mA)	Uo(Vdc)	1	2	3	4
4.20	100	28-42	-	-	-	-
6.30	150	28-42	ON	-	-	-
8.40	200	28-42	ON	ON	-	-
10.50	250	28-42	ON	ON	ON	-
12.60	300	28-42	ON	ON	ON	ON

Switch(开关)

1	2	3	4
-	-	-	-
ON	-	-	-
ON	ON	-	-
ON	ON	ON	-
ON	ON	ON	ON

OUTPUT (输出)

LED+ ■

LED- ■

0.5-1.0"

SELV

DIP-switch & output current

BK-PBL022S-A0300ASE

Output			1	2	3	4
Prated(w)	Irated(mA)	Voltage(Vdc)				
4.20	100	28-42	--	--	--	--
6.30	150	28-42	ON	--	--	--
8.40	200	28-42	ON	ON	--	--
10.50	250	28-42	ON	ON	ON	--
12.60	300	★ 28-42	ON	ON	ON	ON

BK-PBL022S-A0600ASE

INPUT
(输入)

■ **ACL/DC+** MODEL (型号): BK-PBL022S-A0600ASE
Input (输入): 200-240V $\approx$ 0/50/60Hz 0.14A Max. λ :0.9C-0.98
■ **ACL/DC-** Output (输出): 28-42V $\approx$ 600mA 25.2W Max. 54VDC Max.
■ **ACN/DC-** For Australia and New Zealand, the marking label with 0.75-1.5V
Other ratings see selection sheet

Preparation for input and output
8-9mm

Constant Current LED Driver (LED控制装置)

Output (输出)

Po(W)	Io(mA)	Uo(Vdc)	1	2	3	4
12.60	300	28-42	-	-	-	-
14.70	350	28-42	ON	-	-	-
16.80	400	28-42	ON	ON	-	-
18.90	450	28-42	-	-	-	-
21.00	500	28-42	-	-	-	-
23.10	550	28-42	-	-	-	-
25.20	600	28-42	ON	ON	ON	ON

Switch (开关)

1	2	3	4
-	-	-	-
ON	-	-	-
ON	ON	-	-
-	-	-	-
-	-	-	-
-	-	-	-
ON	ON	ON	ON

Output (输出)

LED+ ■
LED- ■
0.5-1.0V

SELV

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528455 Zhongshan City,
Guangdong, CHINA

BK-PBL022S-A0400BSE

INPUT
(输入)

■ **ACL/DC+** MODEL (型号): BK-PBL022S-A0400BSE
Input (输入): 200-240V $\approx$ 0/50/60Hz 0.12A Max. λ :0.9C-0.98
■ **ACL/DC-** Output (输出): 36-54V $\approx$ 400mA 21.6W Max. 59VDC Max.
■ **ACN/DC-** For Australia and New Zealand, the marking label with 0.75-1.5V
Other ratings see selection sheet

Preparation for input and output
8-9mm

Constant Current LED Driver (LED控制装置)

Output (输出)

Po(W)	Io(mA)	Uo(Vdc)	1	2	3	4
8.10	150	36-54	-	-	-	-
10.80	200	36-54	ON	-	-	-
13.50	250	36-54	ON	ON	-	-
16.20	300	36-54	-	-	-	-
18.90	350	36-54	-	-	-	-
21.60	400	36-54	ON	ON	ON	ON

Switch (开关)

1	2	3	4
-	-	-	-
ON	-	-	-
ON	ON	-	-
-	-	-	-
-	-	-	-
-	-	-	-
ON	ON	ON	ON

Output (输出)

LED+ ■
LED- ■
0.5-1.0V

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BK-PBL040S-A1100ASE

INPUT
(输入)

■ **ACL/DC+** MODEL (型号): BK-PBL040S-A1100ASE
Input (输入): 200-240V $\approx$ 0/50/60Hz 0.22A Max. λ :0.9C-0.98
■ **ACL/DC-** Output (输出): 28-38V $\approx$ 1100mA 41.8W Max. 54VDC Max.
■ **ACN/DC-** For Australia and New Zealand, the marking label with 0.75-1.5V
Other ratings see selection sheet

Preparation for input and output
8-9mm

Constant Current LED Driver (LED控制装置)

Output (输出)

Po(W)	Io(mA)	Uo(Vdc)	1	2	3	4
21.00	500	28-42	-	-	-	-
23.10	550	28-42	ON	-	-	-
25.20	600	28-42	-	-	-	-
27.30	650	28-42	-	-	-	-
29.40	700	28-42	ON	-	-	-
31.50	750	28-42	-	-	-	-
33.60	800	28-42	-	-	-	-
35.70	850	28-42	ON	-	-	-
37.80	900	28-42	-	-	-	-
39.90	950	28-42	-	-	-	-
42.00	1000	28-42	ON	-	-	-
42.00	1050	28-40	-	-	-	-
41.80	1100	28-38	ON	ON	ON	ON

Switch (开关)

1	2	3	4
-	-	-	-
ON	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
ON	ON	ON	ON

Output (输出)

LED+ ■
LED- ■
0.5-1.0V

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BK-PBL040S-A0900BSE

INPUT
(输入)

■ **ACL/DC+** MODEL (型号): BK-PBL040S-A0900BSE
Input (输入): 200-240V $\approx$ 0/50/60Hz 0.22A Max. λ :0.9C-0.98
■ **ACL/DC-** Output (输出): 36-45V $\approx$ 900mA 40.5W Max. 60VDC Max.
■ **ACN/DC-** For Australia and New Zealand, the marking label with 0.75-1.5V
Other ratings see selection sheet

Preparation for input and output
8-9mm

Constant Current LED Driver (LED控制装置)

Output (输出)

Po(W)	Io(mA)	Uo(Vdc)	1	2	3	4
21.60	400	36-54	-	-	-	-
24.30	450	36-54	ON	-	-	-
27.00	500	36-54	-	-	-	-
29.70	550	36-54	-	-	-	-
32.40	600	36-54	-	-	-	-
35.10	650	36-54	ON	-	-	-
37.80	700	36-54	-	-	-	-
40.50	750	36-54	-	-	-	-
41.60	800	36-52	ON	-	-	-
40.80	850	36-48	-	-	-	-
40.50	900	36-45	ON	ON	ON	ON

Switch (开关)

1	2	3	4
-	-	-	-
ON	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
ON	ON	ON	ON

Output (输出)

LED+ ■
LED- ■
0.5-1.0V

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BK-PBL022S-A0600ASE

Output			1	2	3	4
Prated(w)	Irated(mA)	Voltage(Vdc)				
12.60	300	28-42	--	--	--	--
14.70	350	28-42	ON	--	--	--
16.80	400	28-42	ON	ON	--	--
18.90	450	28-42	--	--	--	ON
21.00	500	28-42	--	--	ON	ON
23.10	550	28-42	--	ON	ON	ON
25.20	600 ★	28-42	ON	ON	ON	ON

BK-PBL022S-A0400BSE

Output			1	2	3	4
Prated(w)	Irated(mA)	Voltage(Vdc)				
8.10	150	36-54	--	--	--	--
10.80	200	36-54	ON	--	--	--
13.50	250	36-54	ON	ON	--	--
16.20	300	36-54	--	--	ON	ON
18.90	350	36-54	--	ON	ON	ON
21.60	400 ★	36-54	ON	ON	ON	ON

BK-PBL040S-A1100ASE

Output			1	2	3	4
Prated(w)	Irated(mA)	Voltage(Vdc)				
21.00	500	28-42	--	--	--	--
23.10	550	28-42	ON	--	--	--
25.20	600	28-42	--	ON	--	--
27.30	650	28-42	--	--	ON	--
29.40	700	28-42	ON	--	ON	--
31.50	750	28-42	--	ON	ON	--
33.60	800	28-42	--	--	--	ON
35.70	850	28-42	ON	--	--	ON
37.80	900	28-42	--	ON	--	ON
39.90	950	28-42	--	--	ON	ON
42.00	1000	28-42	ON	--	ON	ON
42.00	1050	28-40	--	ON	ON	ON
41.80	1100 ★	28-38	ON	ON	ON	ON

BK-PBL040S-A0900BSE

Output			1	2	3	4
Prated(w)	Irated(mA)	Voltage(Vdc)				
21.60	400	36-54	--	--	--	--
24.30	450	36-54	ON	--	--	--
27.00	500	36-54	--	ON	--	--
29.70	550	36-54	--	--	ON	--
32.40	600	36-54	--	--	--	ON
35.10	650	36-54	ON	--	--	ON
37.80	700	36-54	--	ON	--	ON
40.50	750	36-54	--	--	ON	ON
41.60	800	36-52	ON	--	ON	ON
40.80	850	36-48	--	ON	ON	ON
40.50	900 ★	36-45	ON	ON	ON	ON

BK-PBL060S-A1650ASE

INPUT **BOKE** Constant Current LED Driver(LED控制装置)

MODEL: BK-PBL060S-A1650ASE

■ **ACL/DC+** Input: 200-240V $\approx$ 0/50/60Hz 0.38A Max. λ :0.9C-0.98

■ **ACL/DC-** Output: 28-38V $\approx$ 1650mA 62.7W Max. 54VDC Max.

■ **ACN/DC-** Other ratings see selection sheet

0.75-1.5 ϕ
Preparation for input and output
8-9mm

Output	Switch	1	2	3	4
37.80 900	28-42	ON	ON	ON	ON
39.90 950	28-42	ON	ON	ON	ON
42.00 1000	28-42	ON	ON	ON	ON
44.10 1050	28-42	ON	ON	ON	ON
46.20 1100	28-42	ON	ON	ON	ON
48.30 1150	28-42	ON	ON	ON	ON
50.40 1200	28-42	ON	ON	ON	ON
52.50 1250	28-42	ON	ON	ON	ON
54.60 1300	28-42	ON	ON	ON	ON
56.70 1350	28-42	ON	ON	ON	ON
58.80 1400	28-42	ON	ON	ON	ON
60.90 1450	28-42	ON	ON	ON	ON
63.00 1500	28-42	ON	ON	ON	ON
65.00 1550	28-42	ON	ON	ON	ON
67.00 1600	28-38	ON	ON	ON	ON
69.00 1650	28-38	ON	ON	ON	ON

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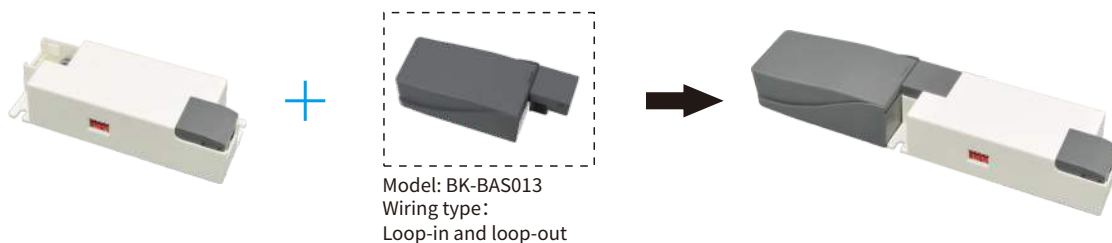
BK-PBL060S-A1650ASE

Output			1	2	3	4
Prated(w)	Irated(mA)	Voltage(Vdc)				
37.80	900	28-42	--	--	--	--
39.90	950	28-42	ON	--	--	--
42.00	1000	28-42	--	ON	--	--
44.10	1050	28-42	ON	ON	--	--
46.20	1100	28-42	--	--	ON	--
48.30	1150	28-42	ON	--	ON	--
50.40	1200	28-42	--	ON	ON	--
52.50	1250	28-42	ON	ON	ON	--
54.60	1300	28-42	--	--	--	ON
56.70	1350	28-42	ON	--	--	ON
58.80	1400	28-42	--	ON	--	ON
60.90	1450	28-42	ON	ON	--	ON
63.00	1500	28-42	--	--	ON	ON
65.00	1550	28-40	ON	--	ON	ON
67.00	1600	28-38	--	ON	ON	ON
69.00	1650 ★	28-38	ON	ON	ON	ON

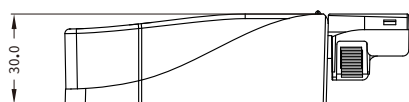
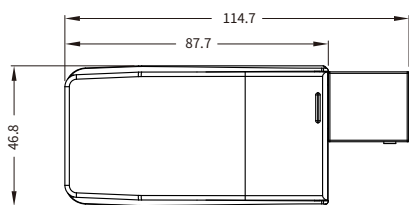
Remarks:

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

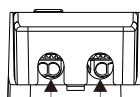
Optional accessories (See the parts specification for details)



size(mm)

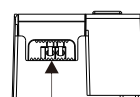


Cable diameter limit



φ2-φ10mm

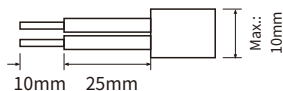
The allowable diameter of the input cable sheath is 2-10mm



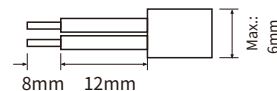
φ2-φ6mm

The allowable diameter of the output cable sheath is 2-6mm

Input wire:
0.75-2.5mm²



Output wire:
0.5-1.0mm²

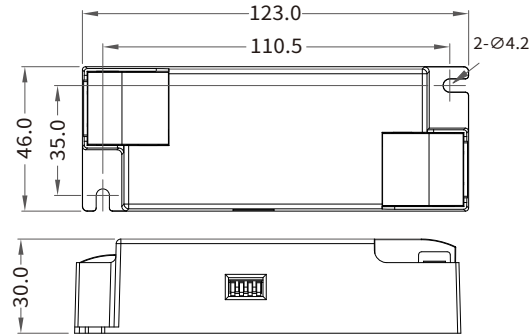


Mechanical Specification

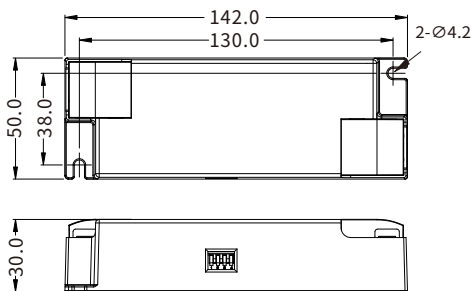
Size(Excluding accessories)

Unit:mm

PBL022S-A/PBL040S-A



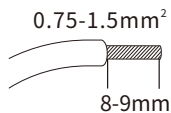
PBL060S-A



INPUT

Numbering	function	colour
1	ACL/DC+	grey
2	ACL/DC+	grey
3	ACN/DC-	grey
4	ACN/DC-	grey

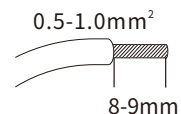
Input wire



OUTPUT

Numbering	function	colour
1	LED-	black
2	LED+	red

Output wire

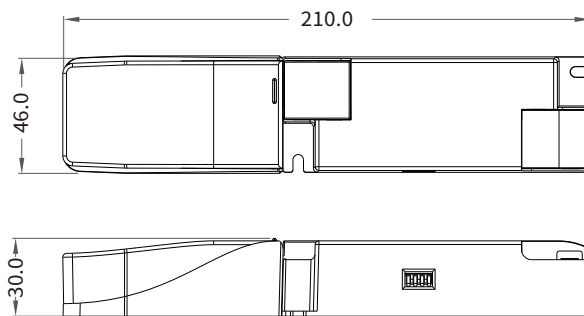


Mechanical Specification

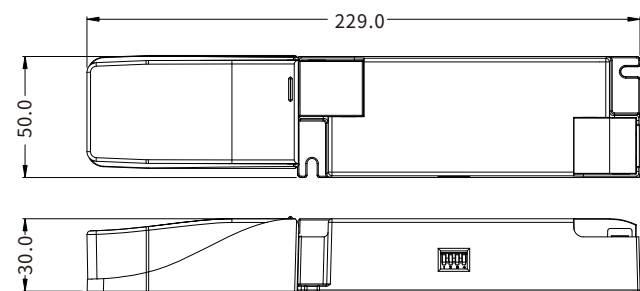
Size(Include accessories)

Unit:mm

PBL022S-A/PBL040S-A



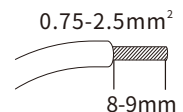
PBL060S-A



INPUT

Numbering	function	colour
1	ACN	white
	ACN	white
2	NC	white
	NC	white
3	ACL	white
	ACL	white

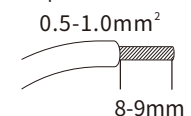
Input wire



OUTPUT

Numbering	function	colour
1	LED-	black
2	LED+	red

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 lamp radiator).
- If the driver is used externally (it needs to be used with the power end cover), the installation of the driver should also meet the following conditions:
 - 1.The driver should be a certain distance between the drives, as shown in Figure 1.
 - 2.The driver keeps a certain distance from surrounding objects, as shown in Figure 2.

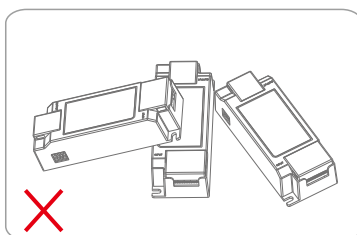
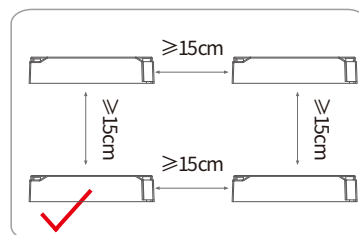


Figure 1



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 5 seconds
3. Remove LED module
4. Connect LED module again

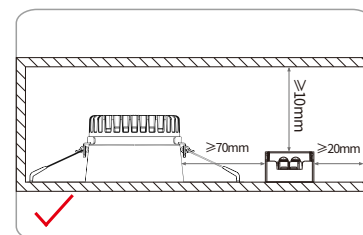
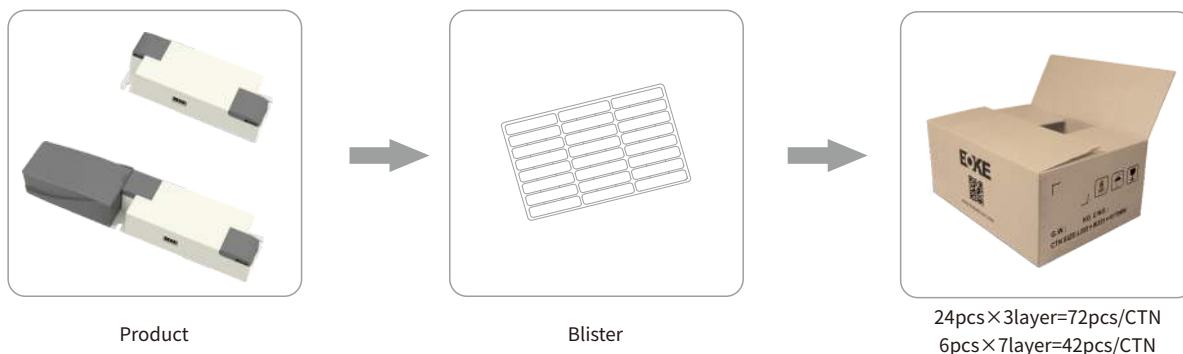


Figure 2

Packaging

Optional 1: factory default



Excluding accessories

Model	Product size	Weight	Blister size	Carton size	Qty/carton	N.W	G.W
PBL022S-A	L123*W46*H30mm	115g	L430*W340*H47mm	L450*W350*H180mm	72pcs	8.28kg	9.58kg
PBL040S-A	L123*W46*H30mm	118g	L430*W340*H47mm	L450*W350*H180mm	72pcs	8.50kg	9.80kg

Include accessories

Model	Product size	Weight	Blister size	Carton size	Qty/carton	N.W	G.W
PBL022S-A	L210*W46*H30mm	158g	L450*W310*H32mm	L465*W325*H265mm	42pcs	6.64kg	7.98kg
PBL040S-A	L210*W46*H30mm	161g	L450*W310*H32mm	L465*W325*H265mm	42pcs	6.76kg	8.17kg



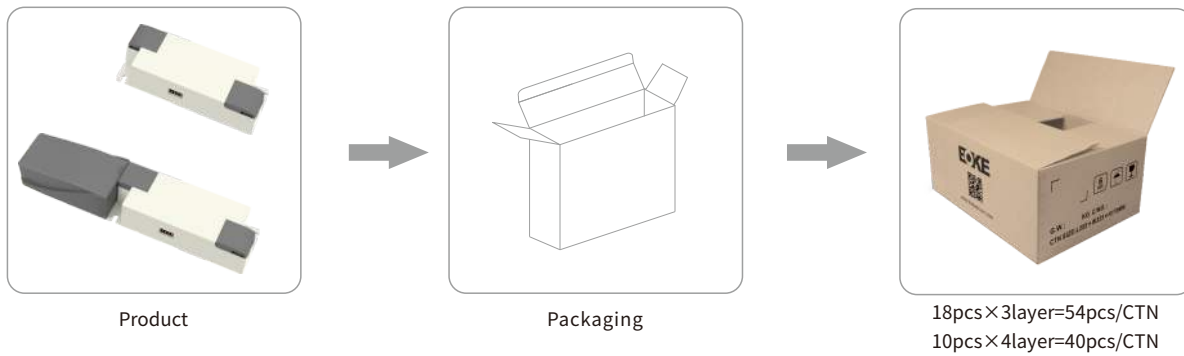
Excluding accessories

Model	Product size	Weight	Packaging size	Carton size	Qty/carton	N.W	G.W
PBL060S-A	L142*W50*H30mm	155g	L255*W179*H54mm	L375*W270*H180mm	48pcs	7.44KG	8.55KG

Include accessories

Model	Product size	Weight	Packaging size	Carton size	Qty/carton	N.W	G.W
PBL060S-A	L229*W50*H30mm	198g	L345*W234*H54mm	L365*W250*H180mm	33pcs	6.53KG	7.34KG

Optional 2



Excluding accessories

Model	Product size	Weight	Packaging size	Carton size	Qty/carton	N.W	G.W
PBL022S-A	L123*W46*H30mm	115g	L140*W35*H50mm	L345*W310*H170mm	54pcs	6.21kg	7.51kg
PBL040S-A	L123*W46*H30mm	118g	L140*W35*H50mm	L345*W310*H170mm	54pcs	6.37kg	7.62kg

Include accessories

Model	Product size	Weight	Packaging size	Carton size	Qty/carton	N.W	G.W
PBL022S-A	L210*W46*H30mm	158g	L235*W40*H70mm	L420*W250*H310mm	40pcs	6.32kg	7.83kg
PBL040S-A	L210*W46*H30mm	161g	L235*W40*H70mm	L420*W250*H310mm	40pcs	6.44kg	7.95kg

Additional information

- When the driver is used as an internal power supply for luminaires, re-evaluation of performance including temperature rise, conducted interference, radiated interference, surge immunity and electrostatic discharge (ESD) are required due to differences in luminaire structure and wiring. Ensure compliance with practical application requirements and stable & reliable operation of the driver.
- Unless otherwise specified, all specifications and parameters are measured under conditions of 230VAC input, 50Hz, full load and ambient temperature of 25°C.
- Product service life and MTBF values are for reference only and do not constitute a warranty statement.
- BOKE reserves the final right to interpret the above parameters. For further information, please send an email to info@bokedriver.com.
- The above information is subject to change without prior notice. Please ensure you use the latest version of the datasheet.