

Constant current independent driver
PQL Series



Features

- Flicker-free output, which meets the requirement of ErP standard
- Screw-free design, easy wiring
- Pushable strain relief design, easy to crimp and install
- Compact housing design
- Dual-stage circuit design, work stable
- Withstand 380VAC high voltage short-time shock
- High PF, high efficiency, low THD
- SELV and Class II design, suitable for use outside of the light
- Passed ENEC-TUV, CE, RCM, CCC, UKCA and other certifications
- IP20 protection grade, indoor use
- Nominal life-time up to 100,000 h
- 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)

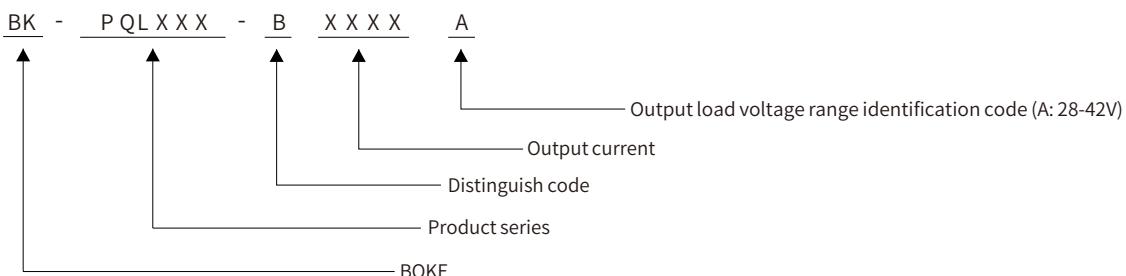
Suitable for lights

- Suitable for lights with independent drivers such as downlights, spotlights, panel lights, etc
- Not suitable for lights with built-in drivers

Typical applications

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

Model coding rules of BEL series



Selection table of PQL series(just output power of 10.5w-62.7w)

Model	Input voltage	Output power	Output voltage	Output current	Dimension
BK-PQL009-BxxxxA	200-240VAC	10.5W	28-42VDC	0.15-0.25A	L95*W36.5*H24mm
BK-PQL013-BxxxxA	200-240VAC	14.0W	28-42VDC	0.25-0.35A	L95*W36.5*H24mm
BK-PQL018-BxxxxA	200-240VAC	18.0W	28-42VDC	0.30-0.45A	L114.5*W41*H24.5mm
BK-PQL022-BxxxxA	200-240VAC	22.8W	28-42VDC	0.40-0.60A	L114.5*W41*H24.5mm
BK-PQL040-xxxx	200-240VAC	40.0W	28-42VDC	0.50-1.00A	L119*W42.5*H28mm
BK-PQL042-xxxx	200-240VAC	41.8W	28-42VDC	0.60-1.10A	L135*W45*H29mm
BK-PQL050-xxxx	200-240VAC	50.0W	28-42VDC	1.00-1.25A	L135*W45*H29mm
BK-PQL060-BxxxxA	200-240VAC	62.7W	28-42VDC	1.20-1.65A	L156*W50*H38mm

Technical data

Product model	BK-PQL009-B0250A
Output parameters	
Regulation method	Constant Current
Rated output current	0.15-0.25A
Rated output voltage	28-42V
Rated output power	10.5W Max
Output current adjustment	N/A
Output current ripple LF	±1%
Output current accuracy	±5%
Linear regulation	±5%
Load regulation	±5%
No load output voltage	50V
Flicker-free(typical)	Modulation depth =0.288% (100 Hz), Pst LM = 0.000, SVM = 0.005,(The above parameters are obtained from testing the panel lights)
Input parameters	
Rated input voltage	200-240VAC 200-240VDC
Rated input voltage	180-264VAC 180-264VDC
Input votage shock	<380V AC, 1 h
Input current	<0.1A (AC input)
Input frequency	0/50/60Hz
Input power factor	0.95C (230V AC & Full load)
Input THD	20% (230V AC & Full load)
Efficiency(typical)	82% (230V AC & Full load)
In-rush current	7.6A peak ,220us 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	>50,000 switching cycles
Power consumption	Full load(Pmax):10.5W, No load(Pno):<2W, On stand-by(Psb) :N/A, Network stand-by(Pnet) : N/A
Safety	
Withstand voltage	I/P-O/P:3750V AC
Mains surge capability	L-N:2KV
Leakage current	<0.7mA (230V AC & Full load)
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 2in1 dimming port	N/A
Auxiliary power supply	N/A
Dimming range	N/A
Dimming drive mode	N/A
Emergency support	
Central emergency system	Supported(100% output in DC input)
Self-contained emergency	Supported
Environment & Life time	
Operating temperature	Ta=-20-60°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, Full load)
Environmental protection	RoHS
Certifications and standards	
Certified	ENEC-TUV, RCM, EMC, CE, UKCA, CCC
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, full load and 25°C of ambient temperature.
- 2.The driver can not be installed inside the light. when the driver is used with the light, the EMC of the whole light needs to be tested.

Technical data

Product model	BK-PQL013-B0300A	BK-PQL013-B0350A	
Output parameters			
Regulation method	Constant Current	Constant Current	
Rated output current	0.26-0.3A	0.31-0.35A	
Rated output voltage	28-42V	28-40V	
Rated output power	12.6W Max	14W Max	
Output current adjustment	N/A	N/A	
Output current ripple LF	±1%	±1%	
Output current accuracy	±5%	±5%	
Linear regulation	±5%	±5%	
Load regulation	±5%	±5%	
No load output voltage	50V	50V	
Flicker-free(typical)	Modulation depth =0.269% (100 Hz), Pst LM = 0.000, SVM = 0.006,(The above parameters are obtained from testing the panel lights)		
Input parameters			
Rated input voltage	200-240VAC	200-240VDC	
Rated input voltage	180-264VAC	180-264VDC	
Input votage shock	<380VAC, 1 h		
Input current	<0.1A (AC input)		
Input frequency	0/50/60Hz		
Input power factor	0.95 (230V AC & Full load)		
Input THD	17% (230V AC & Full load)		
Efficiency(typical)	83% (230V AC & Full load)		
In-rush current	4.8A peak ,320us 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	>50,000 switching cycles		
Power consumption	Full load(Pmax):14W, No load(Pno):<0.5W, On stand-by(Psb) :N/A , Network stand-by(Pnet) : N/A		
Safety			
Withstand voltage	I/P-O/P:3750V AC		
Mains surge capability	L-N:2KV		
Leakage current	<0.7mA (230V AC & Full load)		
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 2in1 dimming port	N/A		
Auxiliary power supply	N/A		
Dimming range	N/A		
Dimming drive mode	N/A		
Emergency support			
Central emergency system	Supported(100% output in DC input)		
Self-contained emergency	Supported		
Environment & Life time			
Operating temperature	Ta=-20-50°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, Full load)		
Environmental protection	RoHS		
Certifications and standards			
Certified	ENEC-TUV, RCM, EMC, CE, UKCA, CCC		
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, full load and 25°C of ambient temperature.
- 2.The driver can not be installed inside the light. when the driver is used with the light, the EMC of the whole light needs to be tested.

Technical data

Product model	BK-PQL018-B0400A	BK-PQL018-B0450A	
Output parameters			
Regulation method	Constant Current	Constant Current	
Rated output current	0.31-0.4A	0.41-0.45A	
Rated output voltage	28-42V	28-40V	
Rated output power	16.8W Max	18W Max	
Output current adjustment	N/A	N/A	
Output current ripple LF	±1%	±1%	
Output current accuracy	±5%	±5%	
Linear regulation	±5%	±5%	
Load regulation	±5%	±5%	
No load output voltage	50V	50V	
Flicker-free(typical)	Modulation depth =0.147% (100 Hz), Pst LM = 0.000, SVM = 0.003,(The above parameters are obtained from testing the panel lights)		
Input parameters			
Rated input voltage	200-240VAC	200-240VDC	
Rated input voltage	180-264VAC	180-264VDC	
Input votage shock	<380V AC, 1 h		
Input current	<0.15A (AC input)		
Input frequency	47-63Hz		
Input power factor	0.95 (230V AC & Full load)		
Input THD	15% (230V AC & Full load)		
Efficiency(typical)	86% (230V AC & Full load)		
In-rush current	6A peak ,214us duration(50 % lpeak), 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	>50,000 switching cycles		
Power consumption	Full load(Pmax):18W, No load(Pno):<0.5W, On stand-by(Psb) :N/A, Network stand-by(Pnet) : N/A		
Safety			
Withstand voltage	I/P-O/P:3750V AC		
Mains surge capability	L-N:2KV		
Leakage current	<0.7mA (230V AC & Full load)		
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 2in1 dimming port	N/A		
Auxiliary power supply	N/A		
Dimming range	N/A		
Dimming drive mode	N/A		
Emergency support			
Central emergency system	Supported(100% output in DC input)		
Self-contained emergency	Supported		
Environment & Life time			
Operating temperature	Ta=-20-50°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, Full load)		
Environmental protection	RoHS		
Certifications and standards			
Certified	ENEC-TUV, RCM, EMC, CE, UKCA, CCC		
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, full load and 25°C of ambient temperature.
- 2.The driver can not be installed inside the light. when the driver is used with the light, the EMC of the whole light needs to be tested.

Technical data

Product model	BK-PQL022-B0500A	BK-PQL022-B0550A	BK-PQL022-B0600A	
Output parameters				
Regulation method	Constant Current	Constant Current	Constant Current	
Rated output current	0.45-0.5A	0.51-0.55A	0.56-0.6A	
Rated output voltage	28-42V	28-40V	28-38V	
Rated output power	21W Max	22W Max	22. 8W Max	
Output current adjustment	N/A	N/A	N/A	
Output current ripple LF	±1%	±1%	±1%	
Output current accuracy	±5%	±5%	±5%	
Linear regulation	±5%	±5%	±5%	
Load regulation	±5%	±5%	±5%	
No load output voltage	50V	50V	50V	
Flicker-free(typical)	Modulation depth =0.125% (100 Hz), Pst LM = 0.028, SVM = 0.002,(The above parameters are obtained from testing the panel lights)			
Input parameters				
Rated input voltage	200-240VAC	200-240VDC		
Rated input voltage	180-264VAC	180-264VDC		
Input votage shock	<380VAC, 1 h			
Input current	<0.2A (AC input)			
Input frequency	0/50/60Hz			
Input power factor	0.95 (230V AC & Full load)			
Input THD	15% (230V AC & Full load)			
Efficiency(typical)	85% (230V AC & Full load)			
In-rush current	10.6A peak ,256us 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	>50,000 switching cycles			
Power consumption	Full load(Pmax):22.8W, No load(Pno): <0.5W, On stand-by(Psb) : N/A, Network stand-by(Pnet) : N/A			
Safety				
Withstand voltage	I/P-O/P:3750V AC			
Mains surge capability	L-N:2KV			
Leakage current	<0.7mA (230V AC & Full load)			
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 2in1 dimming port	N/A			
Auxiliary power supply	N/A			
Dimming range	N/A			
Dimming drive mode	N/A			
Emergency support				
Central emergency system	Supported(100% output in DC input)			
Self-contained emergency	Supported			
Environment & Life time				
Operating temperature	Ta=-20-50°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, Full load)			
Environmental protection	RoHS			
Certifications and standards				
Certified	ENEC-TUV, RCM, EMC, CE, UKCA, CCC			
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, full load and 25°C of ambient temperature.
- 2.The driver can not be installed inside the light. when the driver is used with the light, the EMC of the whole light needs to be tested.

Technical data

Product model	BK-PQL040-0700	BK-PQL040-0950	BK-PQL040-1000	
Output parameters				
Regulation method	Constant Current	Constant Current	Constant Current	
Rated output current	0.5-0.7A	0.71-0.95A	0.96-1A	
Rated output voltage	28-42V	28-42V	28-40V	
Rated output power	29.4W Max	39.9W Max	40W Max	
Output current adjustment	N/A	N/A	N/A	
Output current ripple LF	±2%	±2%	±2%	
Output current accuracy	±5%	±5%	±5%	
Linear regulation	±5%	±5%	±5%	
Load regulation	±5%	±5%	±5%	
No load output voltage	52V	52V	52V	
Flicker-free(typical)	Modulation depth =0.228% (100 Hz), Pst LM = 0.015, SVM = 0.005,(The above parameters are obtained from testing the panel lights)			
Input parameters				
Rated input voltage	200-240VAC	200-240VDC		
Rated input voltage	180-264VAC	180-264VDC		
Input votage shock	<380VAC, 1 h			
Input current	<0.3A (AC input)			
Input frequency	0/50/60Hz			
Input power factor	0.95 (230V AC & Full load)			
Input THD	15% (230V AC & Full load)			
Efficiency(typical)	88% (230V AC & Full load)	89% (230V AC & Full load)		
In-rush current	14A peak ,280us 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	>50,000 switching cycles			
Power consumption	Full load(Pmax):40W, No load(Pno):<0.5W, On stand-by(Psb) : N/A, Network stand-by(Pnet) : N/A			
Safety				
Withstand voltage	I/P-O/P:3750V AC			
Mains surge capability	L-N:2KV			
Leakage current	<0.7mA (230V AC & Full load)			
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 2in1 dimming port	N/A			
Auxiliary power supply	N/A			
Dimming range	N/A			
Dimming drive mode	N/A			
Emergency support				
Central emergency system	Supported(100% output in DC input)			
Self-contained emergency	Supported			
Environment & Life time				
Operating temperature	Ta=-20-45°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, Full load)			
Environmental protection	RoHS			
Certifications and standards				
Certified	ENEC-TUV, RCM, EMC, CE, UKCA, CCC			
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, full load and 25°C of ambient temperature.
- 2.The driver can not be installed inside the light. when the driver is used with the light, the EMC of the whole light needs to be tested.

Technical data

Product model	BK-PQL042-1000	BK-PQL042-1050	BK-PQL042-1100	
Output parameters				
Regulation method	Constant Current	Constant Current	Constant Current	
Rated output current	0.6-1A	1-1.05A	1. 05-1.1A	
Rated output voltage	28-42V	28-40V	28-38V	
Rated output power	42W Max	42W Max	41.8W Max	
Output current adjustment	N/A	N/A	N/A	
Output current ripple LF	±1%	±1%	±1%	
Output current accuracy	±5%	±5%	±5%	
Linear regulation	±5%	±5%	±5%	
Load regulation	±5%	±5%	±5%	
No load output voltage	50V	50V	50V	
Flicker-free(typical)	Modulation depth =0.423% (100 Hz), Pst LM = 0.019, SVM = 0.009,(The above parameters are obtained from testing the panel lights)			
Input parameters				
Rated input voltage	200-240VAC	200-240VDC		
Rated input voltage	180-264VAC	180-264VDC		
Input votage shock	<380VAC, 1 h			
Input current	<0.35A (AC input)			
Input frequency	47-63Hz			
Input power factor	0.95 (230V AC & Full load)			
Input THD	10% (230V AC & Full load)			
Efficiency(typical)	89% (230V AC & Full load)			
In-rush current	14.5A peak ,290us 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	>50,000 switching cycles			
Power consumption	Full load(Pmax):42W, No load(Pno): N/A, On stand-by(Psb) :<0.5W, Network stand-by(Pnet) : N/A			
Safety				
Withstand voltage	I/P-O/P:3750V AC			
Mains surge capability	L-N:2KV			
Leakage current	<0.7mA (230V AC & Full load)			
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 2in1 dimming port	N/A			
Auxiliary power supply	N/A			
Dimming range	N/A			
Dimming drive mode	N/A			
Emergency support				
Central emergency system	Supported(100% output in DC input)			
Self-contained emergency	Supported			
Environment & Life time				
Operating temperature	Ta=-20-45°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, Full load)			
Environmental protection	RoHS			
Certifications and standards				
Certified	ENEC-TUV, RCM, EMC, CE, UKCA, CCC			
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, full load and 25°C of ambient temperature.
- 2.The driver can not be installed inside the light. when the driver is used with the light, the EMC of the whole light needs to be tested.

Technical data

Product model	BK-PQL050-1200	BK-PQL050-1250	
Output parameters			
Regulation method	Constant Current	Constant Current	
Rated output current	1-1.2A	1.21-1.25A	
Rated output voltage	28-42V	28-40V	
Rated output power	50.4W Max	50W Max	
Output current adjustment	N/A	N/A	
Output current ripple LF	±1%	±1%	
Output current accuracy	±5%	±5%	
Linear regulation	±5%	±5%	
Load regulation	±5%	±5%	
No load output voltage	50V	50V	
Flicker-free(typical)	Modulation depth =0.244% (100 Hz), Pst LM = 0.022, SVM = 0.007,(The above parameters are obtained from testing the panel lights)		
Input parameters			
Rated input voltage	200-240VAC	200-240VDC	
Rated input voltage	180-264VAC	180-264VDC	
Input votage shock	<380V AC, 1 h		
Input current	<0.4 (AC input)		
Input frequency	47-63Hz		
Input power factor	0.95 (230V AC & Full load)		
Input THD	10% (230V AC & Full load)		
Efficiency(typical)	89% (230V AC & Full load)		
In-rush current	15.6A peak ,310us 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	>50,000 switching cycles		
Power consumption	Full load(Pmax):50.4W, No load(Pno):<0.5W, On stand-by(Psb) : N/A, Network stand-by(Pnet) : N/A		
Safety			
Withstand voltage	I/P-O/P:3750V AC		
Mains surge capability	L-N:2KV		
Leakage current	<0.7mA (230V AC & Full load)		
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 2in1 dimming port	N/A		
Auxiliary power supply	N/A		
Dimming range	N/A		
Dimming drive mode	N/A		
Emergency support			
Central emergency system	Supported(100% output in DC input)		
Self-contained emergency	Supported		
Environment & Life time			
Operating temperature	Ta=-20-45°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, Full load)		
Environmental protection	RoHS		
Certifications and standards			
Certified	ENEC-TUV, RCM, EMC, CE, UKCA, CCC		
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, full load and 25°C of ambient temperature.
- 2.The driver can not be installed inside the light. when the driver is used with the light, the EMC of the whole light needs to be tested.

Technical data

Product model	BK-PQL060-B1400A	BK-PQL060-B1500A	BK-PQL060-B1650A	
Output parameters				
Regulation method	Constant Current	Constant Current	Constant Current	
Rated output current	1.2-1.4A	1.41-1.5A	1.51-1.65A	
Rated output voltage	28-42V	28-40V	28-38V	
Rated output power	58.8W Max	60W Max	62.7W Max	
Output current adjustment	N/A	N/A	N/A	
Output current ripple LF	±1%	±1%	±1%	
Output current accuracy	±5%	±5%	±5%	
Linear regulation	±5%	±5%	±5%	
Load regulation	±5%	±5%	±5%	
No load output voltage	50V	50V	50V	
Flicker-free(typical)	Modulation depth =0.132% (100 Hz), Pst LM = 0.016, SVM = 0.004,(The above parameters are obtained from testing the panel lights)			
Input parameters				
Rated input voltage	200-240VAC	200-240VDC		
Rated input voltage	180-264VAC	180-264VDC		
Input votage shock	<380V AC, 1 h			
Input current	<0.45A (AC input)			
Input frequency	0/50/60Hz			
Input power factor	0.95 (230V AC & Full load)			
Input THD	15% (230V AC & Full load)			
Efficiency(typical)	89% (230V AC & Full load)			
In-rush current	11.8A peak ,358us 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	>50,000 switching cycles			
Power consumption	Full load(Pmax):62.7W, No load(Pno):<0.5W, On stand-by(Psb) : N/A, Network stand-by(Pnet) : N/A			
Safety				
Withstand voltage	I/P-O/P:3750V AC			
Mains surge capability	L-N:2KV			
Leakage current	<0.7mA (230V AC & Full load)			
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 2in1 dimming port	N/A			
Auxiliary power supply	N/A			
Dimming range	N/A			
Dimming drive mode	N/A			
Emergency support				
Central emergency system	Supported(100% output in DC input)			
Self-contained emergency	Supported			
Environment & Life time				
Operating temperature	Ta=-20-45°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, Full load)			
Environmental protection	RoHS			
Certifications and standards				
Certified	ENEC-TUV, RCM, EMC, CE, UKCA, CCC			
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			

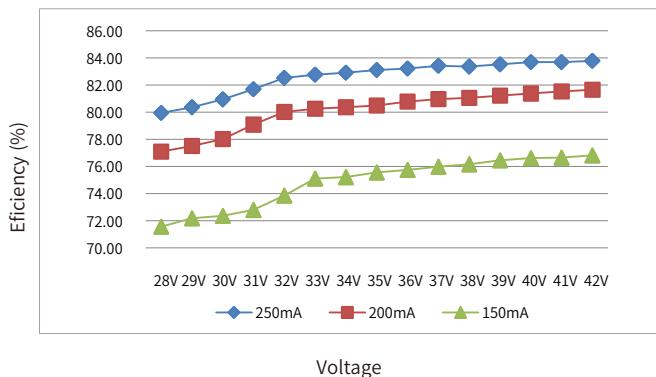
Remarks

- 1.By default, all parameter are measured at 230VAC input, full load and 25°C of ambient temperature.
- 2.The driver can not be installed inside the light. when the driver is used with the light, the EMC of the whole light needs to be tested.

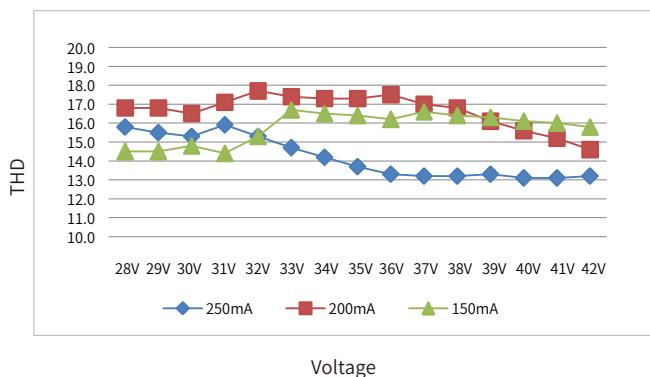
Electrical values

BK-PQL013-B0350A

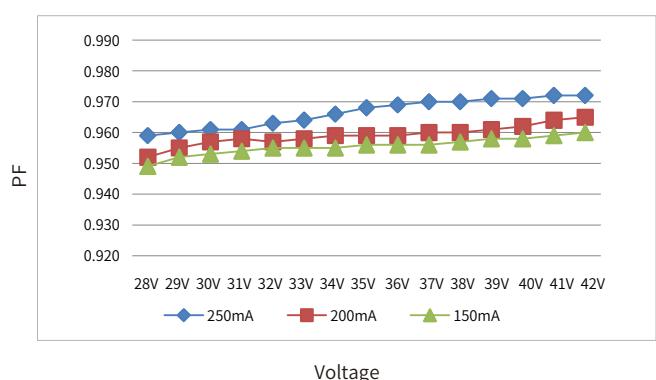
Efficiency vs voltage



THD vs. voltage

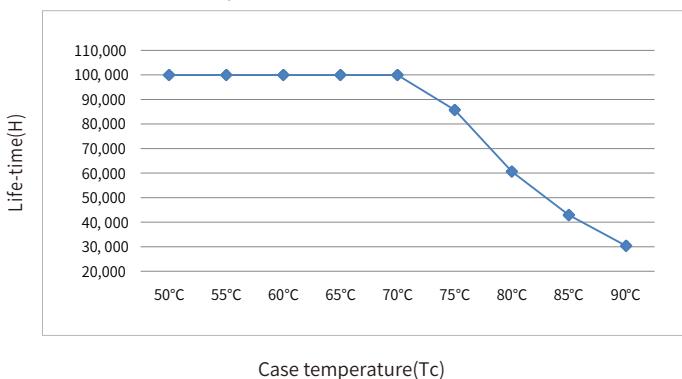


Power factor vs. voltage



Expected life-time

Life-time vs. case temperature

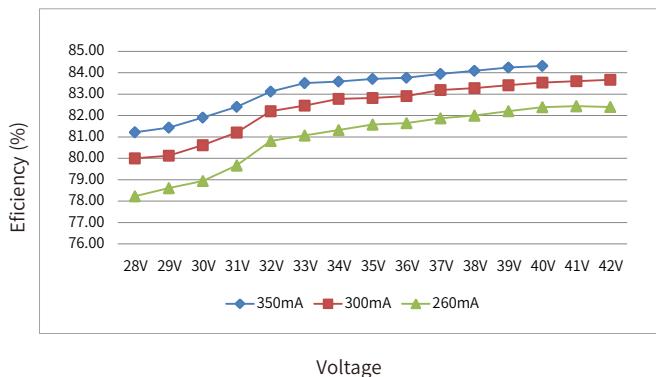


- The life-time of the LED driver is shown in the figure above (calculated based on the 90% survival rate).
- The relation of T_c to T_a temperature depends also on the luminaire design.

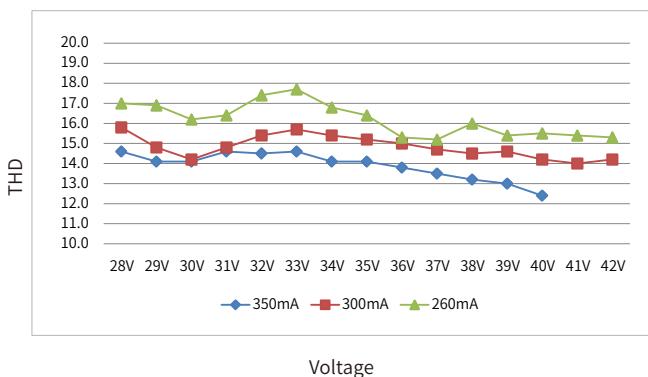
Electrical values

BK-PQL013-B0350A

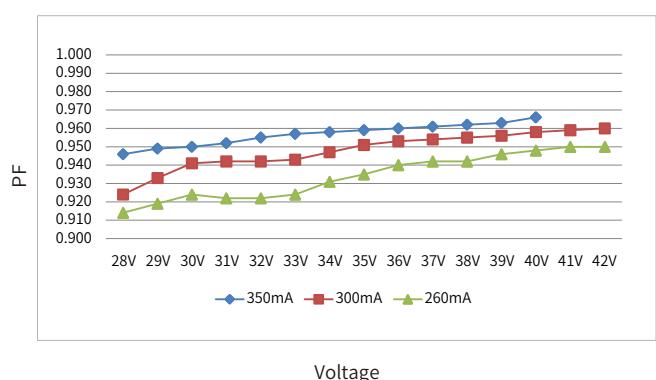
Efficiency vs voltage



THD vs. voltage

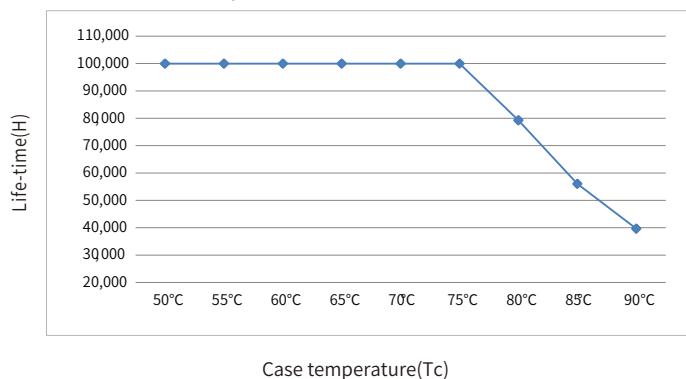


Power factor vs. voltage



Expected life-time

Life-time vs. case temperature

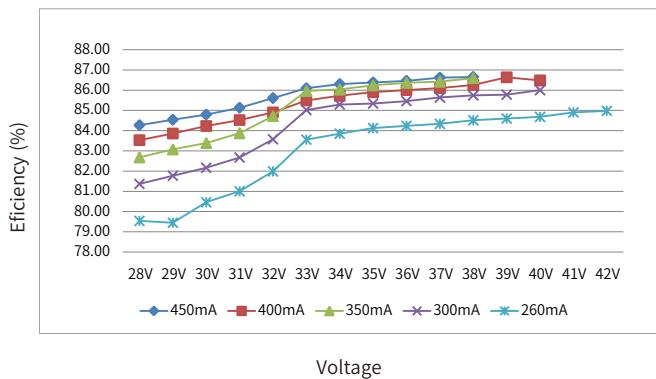


- The life-time of the LED driver is shown in the figure above (calculated based on the 90% survival rate).
- The relation of T_c to T_a temperature depends also on the luminaire design.

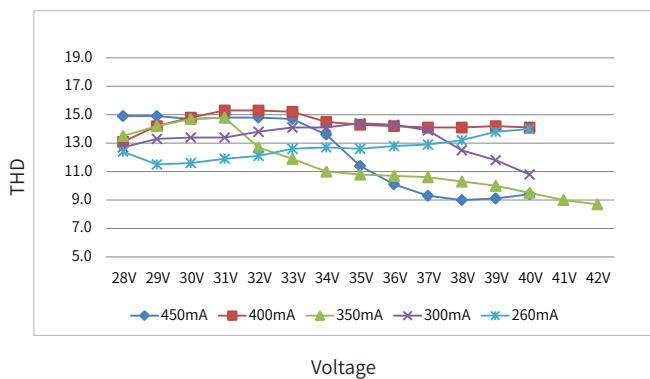
Electrical values

BK-PQL018-B0450A

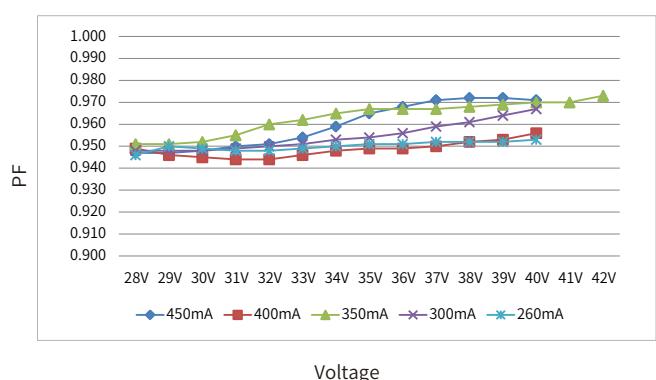
Efficiency vs voltage



THD vs. voltage

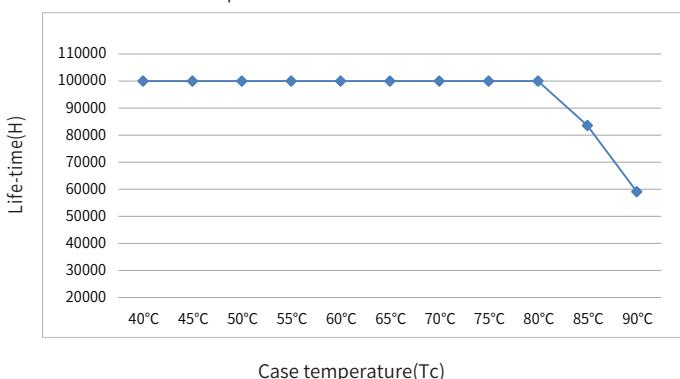


Power factor vs. voltage



Expected life-time

Life-time vs. case temperature

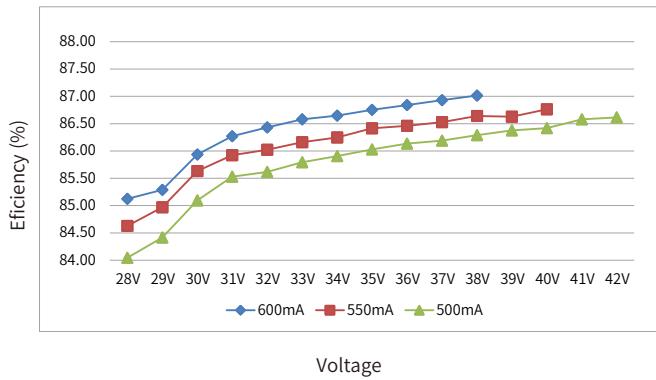


- The life-time of the LED driver is shown in the figure above (calculated based on the 90% survival rate).
- The relation of T_c to T_a temperature depends also on the luminaire design.

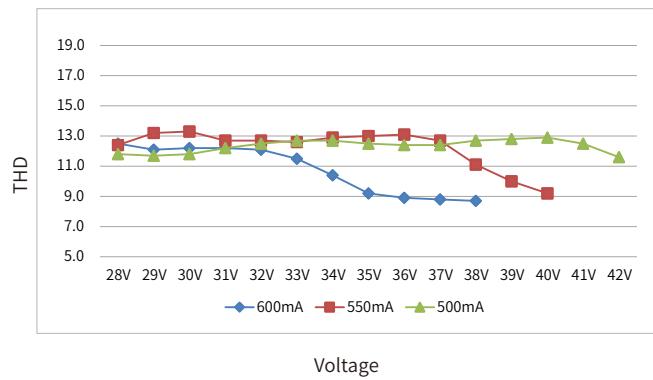
Electrical values

BK-PQL022-B0600A

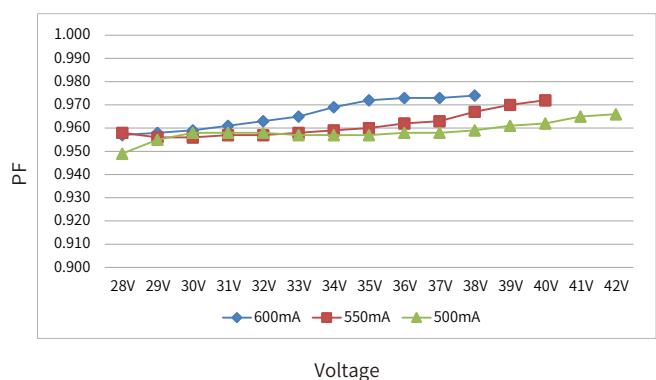
Efficiency vs voltage



THD vs. voltage

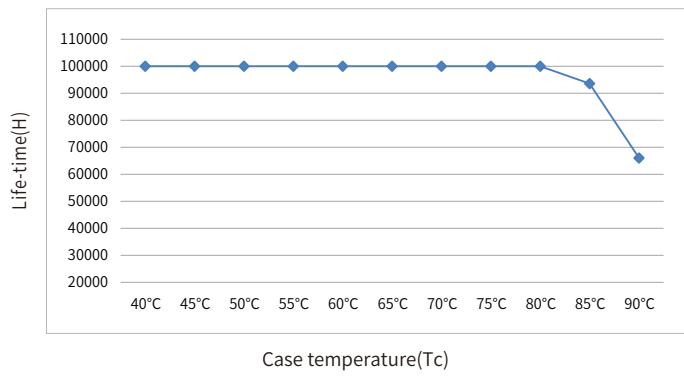


Power factor vs. voltage



Expected life-time

Life-time vs. case temperature

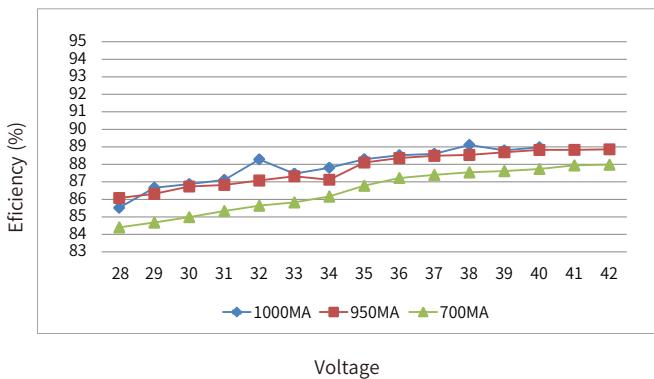


- The life-time of the LED driver is shown in the figure above (calculated based on the 90% survival rate).
- The relation of T_c to T_a temperature depends also on the luminaire design.

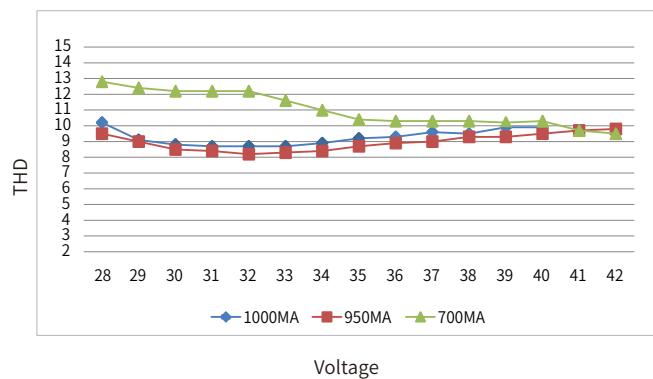
Electrical values

BK-PQL040-1000

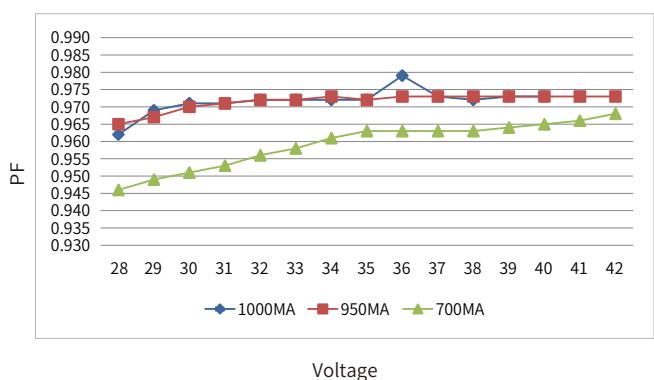
Efficiency vs voltage



THD vs. voltage

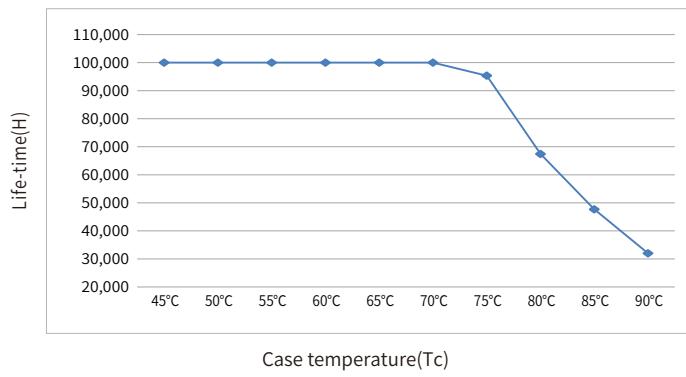


Power factor vs. voltage



Expected life-time

Life-time vs. case temperature

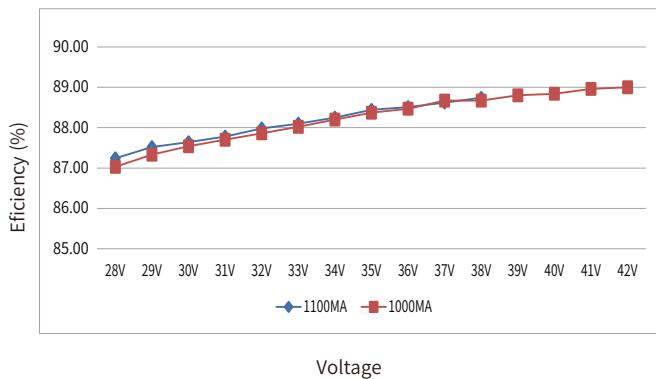


- The life-time of the LED driver is shown in the figure above (calculated based on the 90% survival rate).
- The relation of T_c to T_a temperature depends also on the luminaire design.

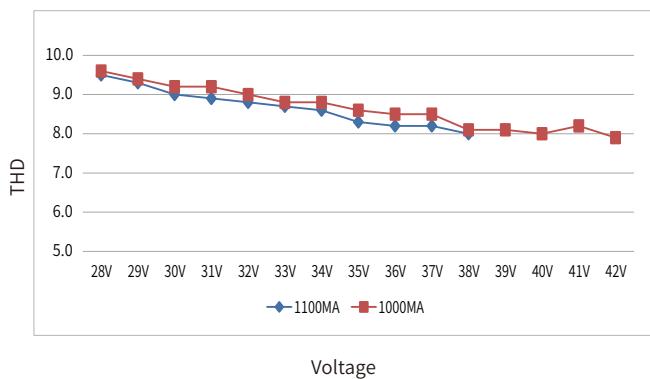
Electrical values

BK-PQL042-1100

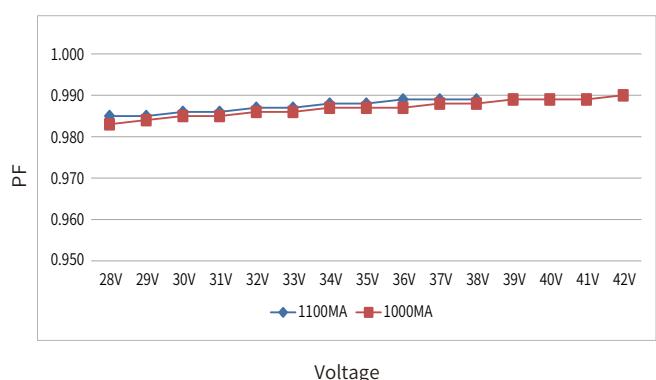
Efficiency vs voltage



THD vs. voltage

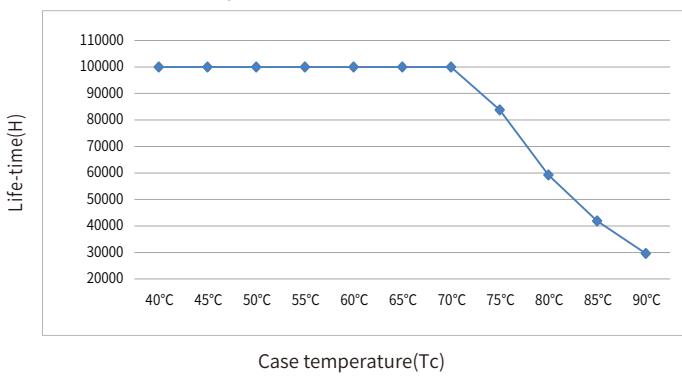


Power factor vs. voltage



Expected life-time

Life-time vs. case temperature

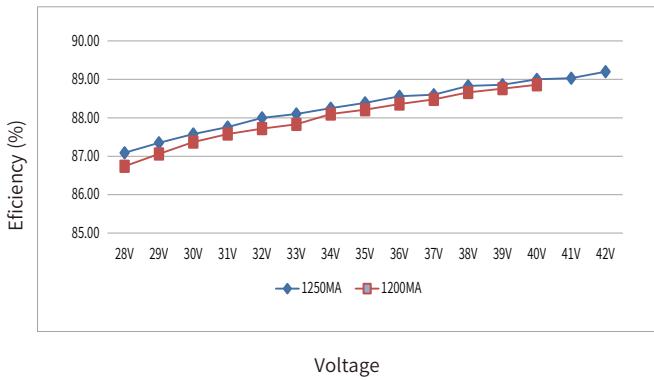


- The life-time of the LED driver is shown in the figure above (calculated based on the 90% survival rate).
- The relation of T_c to T_a temperature depends also on the luminaire design.

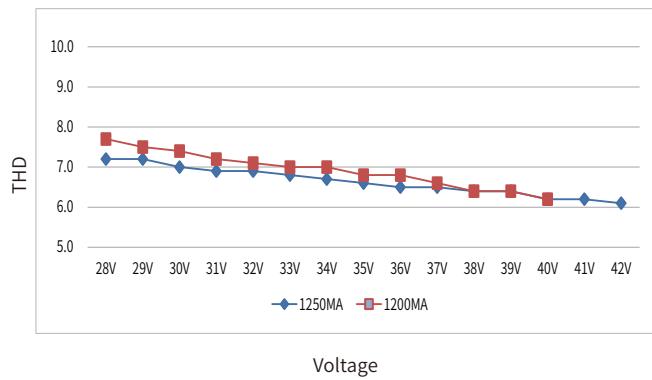
Electrical values

BK-PQL050-1250

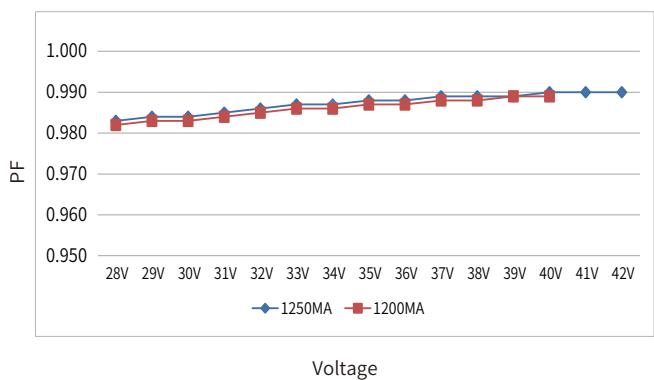
Efficiency vs voltage



THD vs. voltage

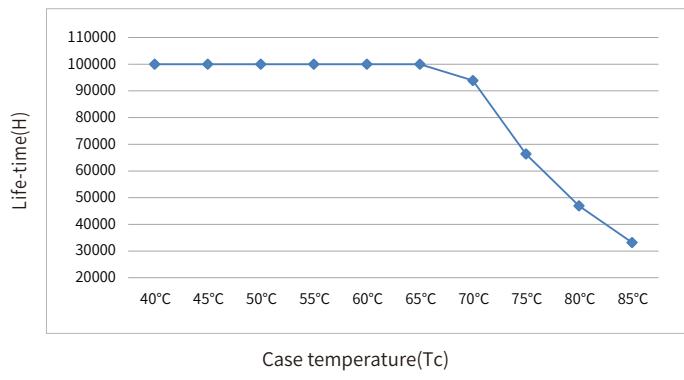


Power factor vs. voltage



Expected life-time

Life-time vs. case temperature



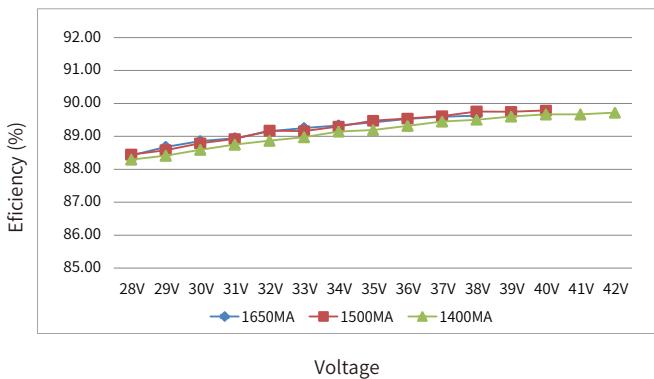
-The life-time of the LED driver is shown in the figure above (calculated based on the 90% survival rate).

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

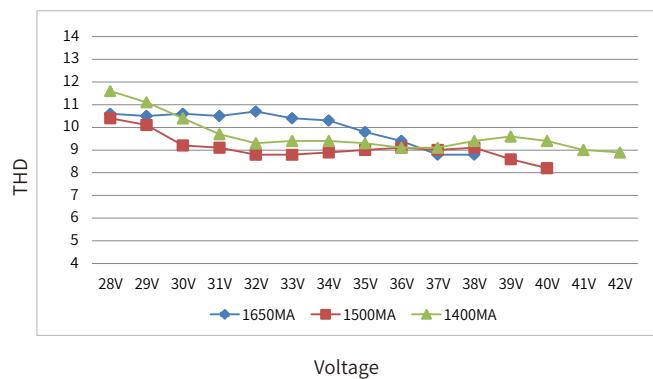
Electrical values

BK-PQL060-B1650A

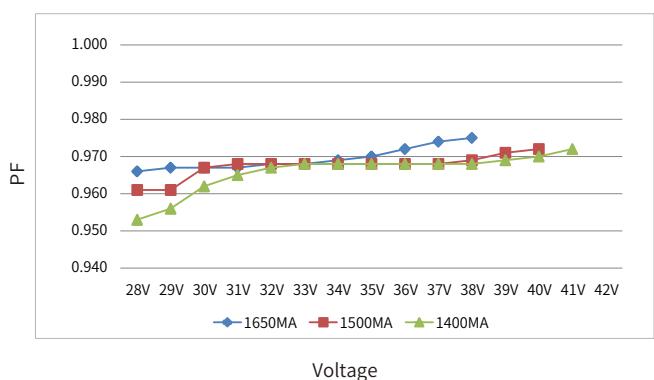
Efficiency vs voltage



THD vs. voltage

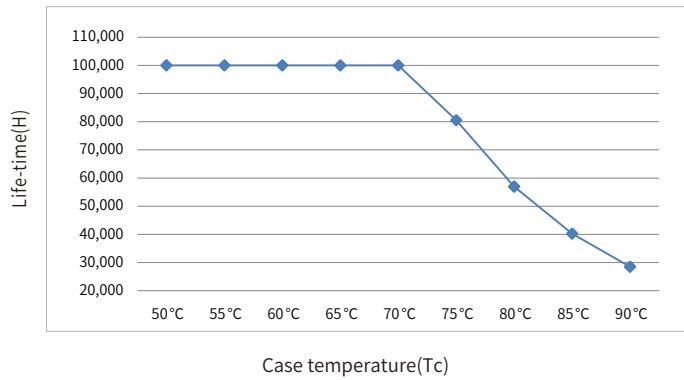


Power factor vs. voltage



Expected life-time

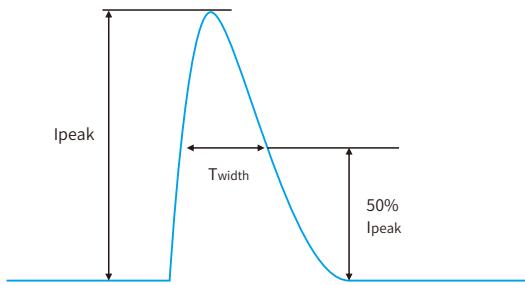
Life-time vs. case temperature



- 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-PQL009-B0250A	7.6A	220us	AC 230V, Full load, Cold start, Ta ≤ 30°C, MCB is not installed side by side	37	48	60	74	93	62	81	99	124	155	122	159	195	244	305
BK-PQL013-B0350A	4.8A	320us		37	48	60	74	93	62	81	99	124	155	93	120	148	185	231
BK-PQL018-B0450A	6A	214us		49	63	78	97	122	74	96	118	147	184	74	96	118	147	184
BK-PQL022-B0600A	10.6A	256us		22	29	36	45	56	37	49	60	75	93	58	76	93	116	146
BK-PQL040-1000	14A	280us		15	20	24	30	38	25	33	40	50	63	35	45	56	70	87
BK-PQL042-1100	14.5A	290us		14	18	22	28	34	23	30	37	46	57	33	43	53	66	83
BK-PQL050-1250	15.6A	310us		12	16	19	24	30	20	26	32	40	50	28	36	45	56	70
BK-PQL060-B1650A	11.8A	358us		14	18	22	27	34	23	30	37	46	57	23	30	37	47	59

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 point, the drive will automatically restore output.

Output no-load operation

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

Label

PQL009



PQL013



PQL009\PQL013 Side label



PQL018

PQL022



PQL018\PQL022 Side label



PQL040



PQL042



PQL050



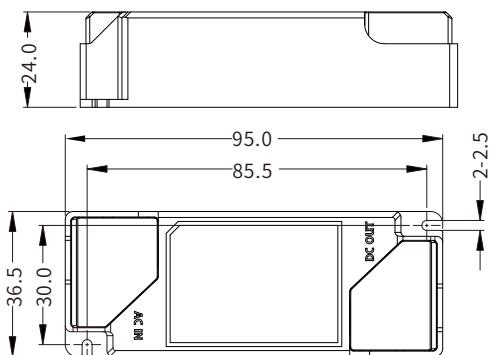
PQL060



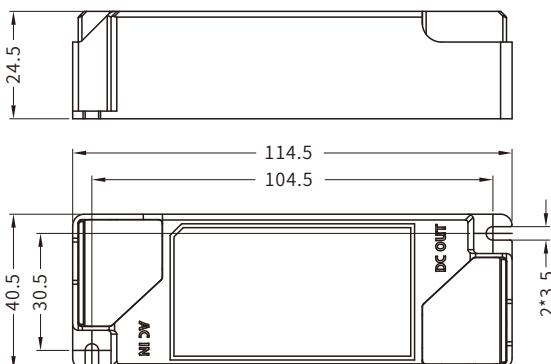
Installation

Unit:mm

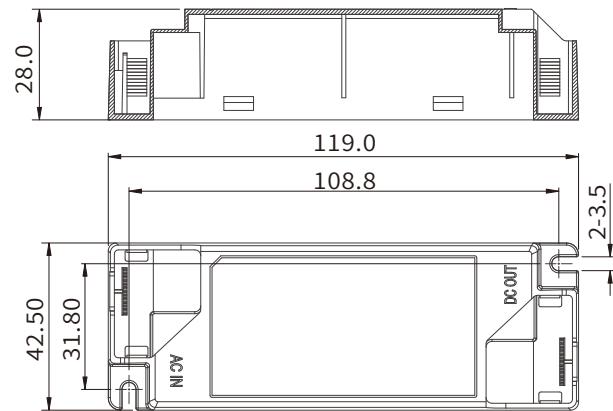
PQL009/PQL013



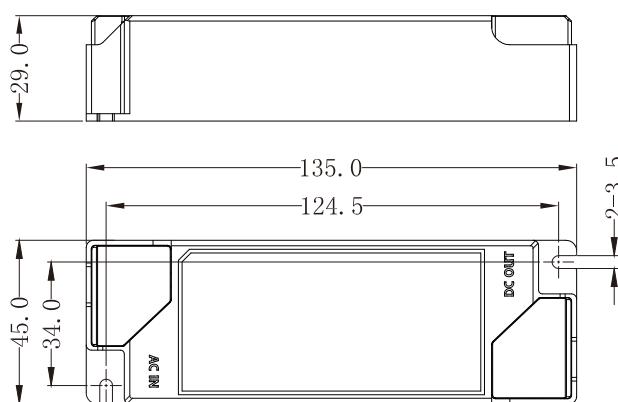
PQL018/PQL022



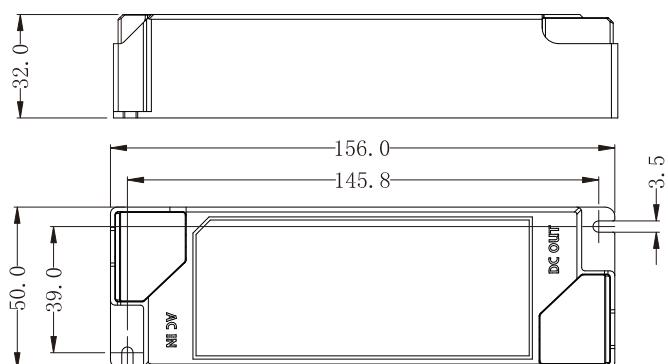
PQL040



PQL042/PQL050

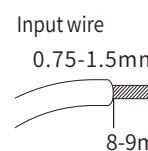


PQL060



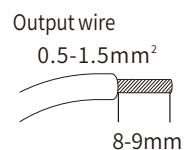
INPUT

Numbering	function	colour
1	ACL	orange
2	ACN	orange



OUTPUT

Numbering	function	colour
1	LED+	red
2	LED-	black



Installation note

Hot plug-in

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

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. lenght of output wires is 2 m.
- Incorrect wiring can damage LED modules.

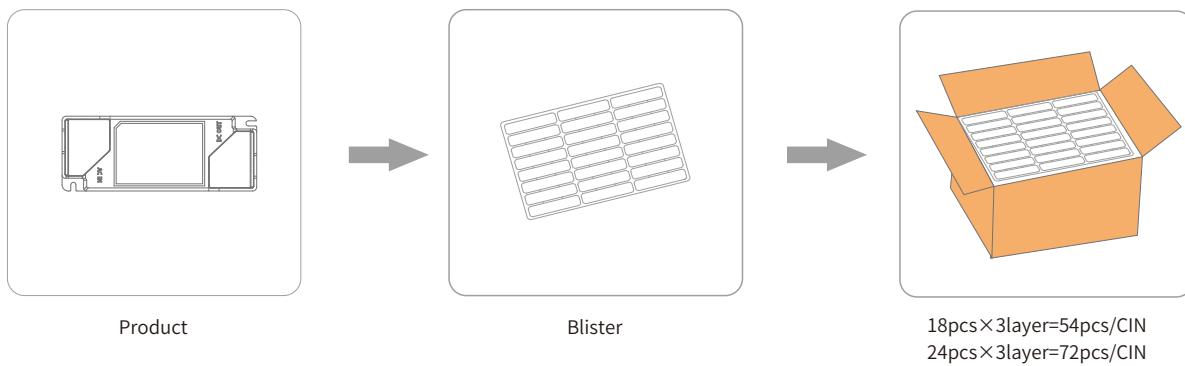
Mounting screw specifications and torque

- Max. torque at the clamping screw: 0.5 Nm / M4

Replace LED module

1. Mains off
2. Remove LED module
3. Wait for 5 seconds
4. Connect LED module again

Packaging



Model	Product size	Weight	Blister size	Carton size	Qty/carton	N.W	G.W
PQL009	L95*W36.5*H24mm	60g	L430*W340*H25mm	L450*W350*H180mm	144pcs	8.64kg	10.09kg
PQL013	L95*W36.5*H24mm	60g	L430*W340*H25mm	L450*W350*H180mm	144pcs	8.64kg	10.09kg
PQL018	L114.5*W41*H24.5mm	62g	L430*W340*H47mm	L450*W350*H180mm	72pcs	4.50kg	5.62kg
PQL022	L114.5*W41*H24.5mm	74g	L430*W340*H47mm	L450*W350*H180mm	72pcs	5.30kg	6.42kg
PQL040	L119*W42.5*H28mm	95g	L430*W340*H47mm	L450*W350*H180mm	72pcs	6.90kg	9.00kg
PQL042	L135*W45*H29mm	118g	L430*W340*H47mm	L450*W350*H180mm	72pcs	8.50kg	10.5kg
PQL050	L135*W45*H29mm	151g	L430*W340*H47mm	L450*W350*H180mm	72pcs	10.9kg	12.0kg
PQL060	L156*W50*H38mm	195g	L430*W340*H48mm	L450*W350*H180mm	54pcs	10.5kg	12.0kg

Additional information

1. This product can only be used outside the light body, Can not be used inside of the light, and it must be used within the specified working environment.
2. The life and MTBF of the product are for reference only, and do not represent a warranty statement. If the drive has been turned on, there is no warranty.
3. For more information, please send an email to info@bokedriver.com.