

Product Datasheet



The global certified BLD-075-C is a dual stage high efficiency smart LED driver. 10kV surge protection level, 100khour long life and 7-year warranty provide high confidence to luminaire users. It supports not only traditional 4-in-1 control, but also DALI2.0 and other smart protocols. NFC and cable programming are both available for users. All around protections including digital OTP (internal and external by NTC) with auto-recovery secure 24hour non-stop operation for luminaires.

☒ Street ☒ Flood ☒ Tunnel ☒ Shoe box ☒ Architectural



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75W, Isolated Dimming, NFC Programmable LED Driver

Features

- Supply Voltage: 90-305Vac or 127-420Vdc, 380Vac for 2 hours
- Great Surge Immunity 10kV
- -60DegC Cold Ambient Startup (Optional)
- 100,000Hour Life @ Tc=75°C & 7 Year Warranty @ Tc<=75°C
- +/-2% Output Current Accuracy (Programmable Model)
- Airset™ NFC Programmability
- Isolated 0-10V/PWM/Time/DALI2.0/DMX/RDM Dimmable
- Dim Off with 0.5W Standby Power (Model Depending)
- 12V 300mA Auxiliary Power to Power Controllers and Fans
- Class II Model Available
- UL Class P, Class 2
- ENEC/CB/CCC SELV Output
- Global Certified Model Available
- Safety according to EN 61347-1, 61347-2-3, 61347-2-13, 62384

Model List

Model Number	Input Voltage Range	Output Power	Output Voltage	Full Power Settable Current Min	Full Power Settable Current Max
BLD-075-C050-XYZ	90 ~ 305 Vac	75 W	90-214Vdc	350mA	500mA
BLD-075-C070-XYZ	90 ~ 305 Vac	75 W	64-150Vdc	500mA	700mA
BLD-075-C105-XYZ	90 ~ 305 Vac	75 W	43-107Vdc	700mA	1050mA
BLD-075-C140-XYZ	90 ~ 305 Vac	75 W	32-71Vdc	1050mA	1400mA
BLD-075-C210-XYZ	90 ~ 305 Vac	75 W	21-54Vdc	1400mA	2100mA
BLD-075-C280-XYZ	90 ~ 305 Vac	75 W	16-36Vdc	2100mA	2800mA

XY=	Dimming Method	Programmable	12Vaux	Dim-off
NN	-	-	-	-
DN	0-10V/PWM/Time	Cable	-	No Dim-off as default status, programmed to have Dim-off
EN	0-10V/PWM/Time	Cable	300mA	√
TR	Time/Set Current	NFC Wireless	-	-
DR	0-10V/PWM/Time	NFC Wireless	-	No Dim-off as default status, programmed to have Dim-off
ER	0-10V/PWM/Time	NFC Wireless	300mA	√
AR	DALI2.0	NFC Wireless	-	√
MR	DMX512 + RDM	NFC Wireless	-	√

Z=	U	V	S	S-GLB000	W	D
Input Cable	3 pin UL cable with ground	3 pin UL cable with ground	3 pin VDE cable with ground	3 pin Global cable with ground	3 pin VDE cable with ground	2 pin VDE cable without ground
Output Cable	2 pin UL cable without Ground	3 pin UL cable with ground	2 pin VDE cable without ground	2 pin Global cable with ground	3 pin VDE cable with ground	2 pin VDE cable without ground
Certified Input Voltage Range	UL Listed Class P FCC 120-277Vac	UL Listed Class P FCC 120-277Vac	ENEC CB RCM Class I 220-277Vac	UL Recognized 120-277Vac ENEC CB RCM Class I 220-277Vac	Class I 120-277Vac	ENEC CB Class II 220-277Vac

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■ Technical Data

Input Voltage	90~305Vac or 127V-420Vdc, 380Vac for 2 hours
Input Frequency	47~63Hz
Power Factor	>0.9@60-100%load, refer to PF vs. Load curve
THD	<15%@60-100%load, refer to THD vs. Load curve
Input Current	0.8Amax@120Vac & Full-Load, 0.4Amax@220Vac & Full-Load
Inrush Current	See Inrush Current Section in the datasheet
Leakage Current	0.75mIU max @277Vac 60Hz, UL8750 0.7mA max @240Vac 50/60Hz, IEC60598-1
Input Under Voltage	Shut down and auto-restart
Surge Protection	Line to line 6kV, line to ground 10kV, IEC 61000-4-5
Current Accuracy	±2%Io for programmable model, ±5%Io for non-programmable model
Ripple Current	Ip-p:5%Io max
Setup Time	1.2s max
Overshoot	10% Io max & LED Load
Output Over Voltage	120% Vomax, typ.
Short Circuit	Auto recovery. The output recovers when short is removed
Over Temperature	Lower the output current when $T_c \geq 105 \pm 10^\circ\text{C}$; Auto recovery when $T_c \leq 70 \pm 10^\circ\text{C}$
Auxiliary Power (Vaux)	12V+/-5%, 300mA max
Operating Temperature	Case Temperature $T_c = -40^\circ\text{C} \sim +90^\circ\text{C}$; 10%RH~100%RH
Storage Temperature	-40°C~+85°C; 5%RH~100%RH
MTBF	≥320,000 hours, 75°C case temperature (MIL-HDBK-217F)
Lifetime	≥100,000 hours, 75°C case temperature, refer to life vs. Tc curve
Case Temperature	90°C max, marked in the Tc point of label
Dimensions	5.16x2.66x1.32 by inch (body), 6.22x2.66x1.32 by inch (endcaps included) 131.0x68.0x33.5 by mm (body), 158.0x68.0x33.5 by mm (endcaps included)
Net Weight	650g
Packing	See Package Information Section in the datasheet

Notes: Unless specified, all the test results are measured in 25°C room temperature.

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Safety/EMC Compliance

Safety Standards	Description
UL8750	Light emitting diode(LED) equipment for use in lighting products
UL1012/1310	Power units other than class 2 / Class 2 power units
IEC 61347-1	Lamp control gear Part 1: general and safety requirements
IEC 61347-2-13	Lamp control gear Part 2-13: particular requirement for d.c. or a.c. supplied electronic control gear for LED modules
IEC 62384	DC or AC supplied electronic control gear for LED modules - Performance requirements
EMC Standards	Description
IEC 55015	Conducted emission test & radiated emission test
IEC 61000-3-2	Harmonic current emissions; Class C
IEC 61000-3-3	Voltage fluctuations & flicker
FCC Part 15	ANSI C63.4:2009 Class B
IEC 61000-4-2	Electrostatic discharge (ESD): 8 kV air discharge, 4 kV contact discharge
IEC 61000-4-3	Radio frequency electromagnetic field susceptibility test (RS)
IEC 61000-4-4	Electrical fast transient (EFT)
IEC 61000-4-5	Surge immunity test
IEC 61000-4-6	Conducted radio frequency disturbances test (CS)
IEC 61000-4-8	Power frequency magnetic field test
IEC 61000-4-11	Voltage dips
IEC 61547	Electromagnetic immunity requirements applies to lighting equipment

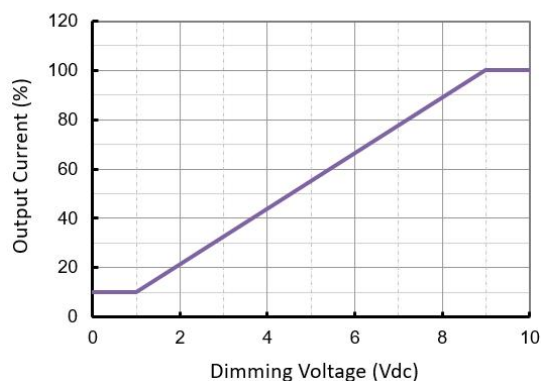
Dimming

Parameter	Min.	Typ.	Max.
Vdim Sourcing Current	100uA	150uA	200uA
Vdim Allowed Input Voltage	-20 V		20 V
0-10V Dimming Range	10% (Vdim=1V)	Linear	100% (Vdim=9~10V)
PWM Dimming Range	10% (Duty=10%)	Linear	100% (Duty=90-100%)
Dim off threshold	0.4V or 4%	0.5V or 5%	0.6V or 6%
Dim on threshold	0.6V or 6%	0.7V or 7%	0.8V or 8%
PWM High	3.8V		10V
PWM Low	0V		0.6V
PWM Frequency	300Hz		2kHz
PWM Controller Capability	300uA		
DALI Interface Standard	IEC62386, part 101,102,207		
DA1,DA2 High Level	9.5	16	22.5
DA1,DA2 Low Level	-6.5	0	6.5
DA1,DA2 Current	0		2mA
DMX+ & DMX- Voltage	-6V		6V
DMX to Ground Resistance	25Mohm		
Logic 0/1 (DMX+ to DMX-) Threshold		0.2V	
Communication Baud Rate		250kbps	

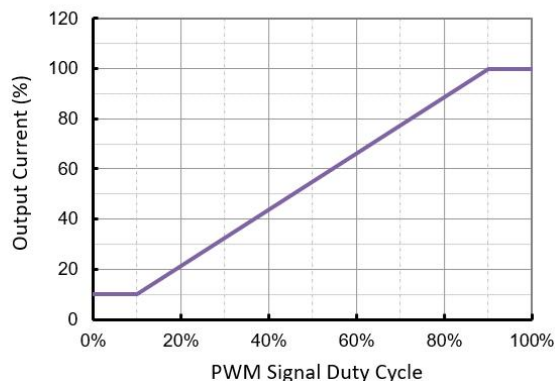
75W, Isolated Dimming, NFC Programmable LED Driver

- **Default Dimming Curves**
- a. **0-10V dimming without dim-off**

0-10V Dimming Curve

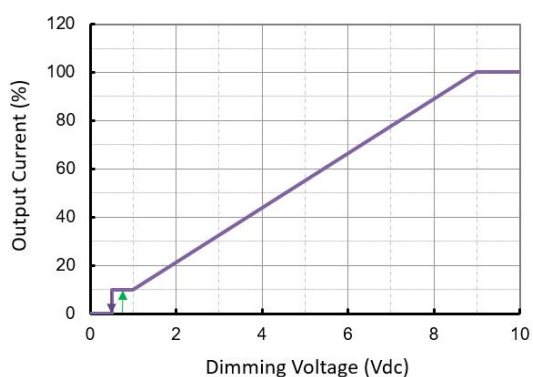


PWM Dimming Curve

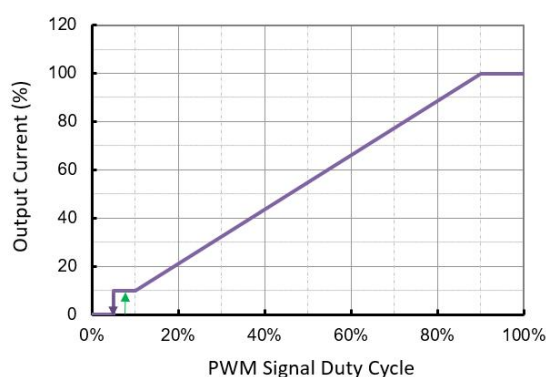


- b. **0-10V dimming with dim-off**

0-10V Dimming Curve
with Dim Off

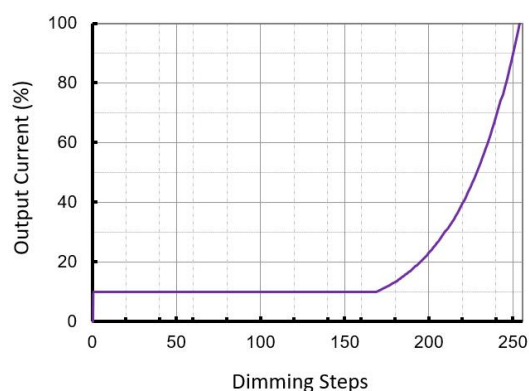


PWM Dimming Curve

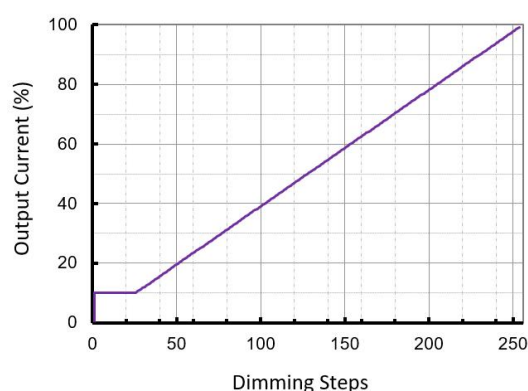


- c. **DALI and DMX dimming curves**

DALI Dimming Curve



DMX/RDM Dimming Curve



Note: Both DALI and DMX dimming curves can be customized to be linear or logarithmic as default.

■ Programming

- NFC Programming by PC/Laptop



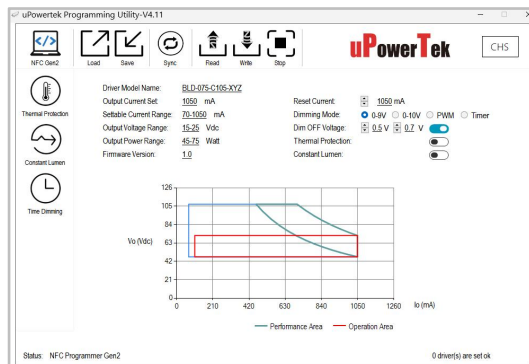
- Download PC software setup program at <https://www.upowertek.com/download-2/>
- Click uPowertek_Programming_Utility_Vx_Setup.exe to install the software.
- Open the software by windows Start Menu.



- The GUI start and choose the right NFC programmer.



- When the interface below appears, you can start programming.



- NFC Programming by Smartphone

- Download Android APP at <https://www.upowertek.com/download-2/> or search IOS app “uPowerTek” from Apple’s app store.
- The cellphone should have NFC function and make sure it is enabled. The link below shows how to turn on the NFC from either iPhone or Android phones.
<https://www.upowertek.com/how-to-use-nfc-on-cellphone/>
- Open the APP by icon below.



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- Cable Programming



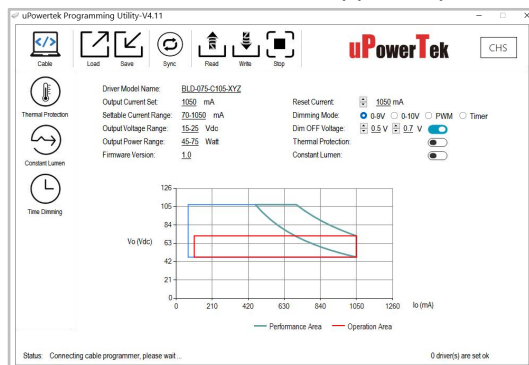
- Download PC software setup program at <https://www.upowertek.com/download-2/>
- Click uPowertek_Programming_Utility_Vx_Setup.exe to install the software.
- Open the software by windows Start Menu.



- The GUI start and choose the last Cable Programmer.



- When the interface below appears, you can start programming.

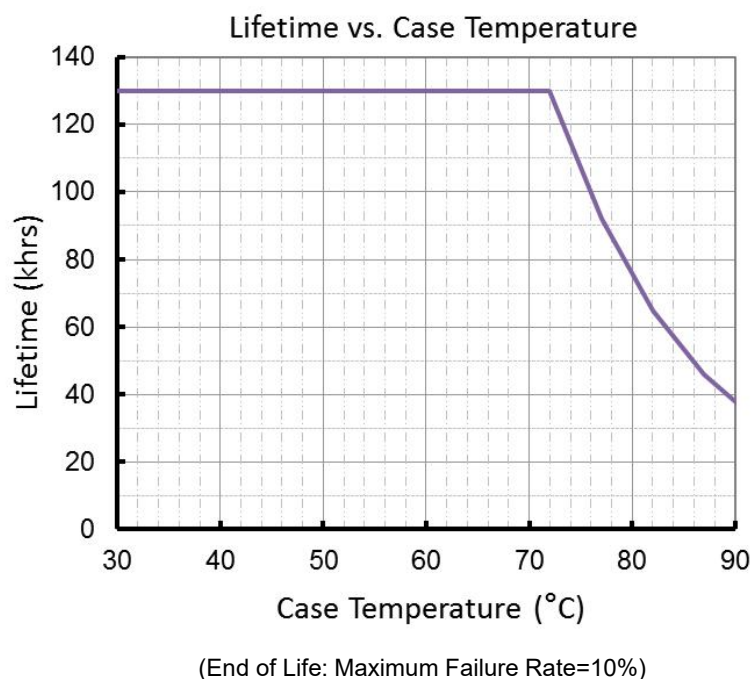


- Connect the Vdim+ and Vdim- wires to the right ones (the same color) of the programmer.

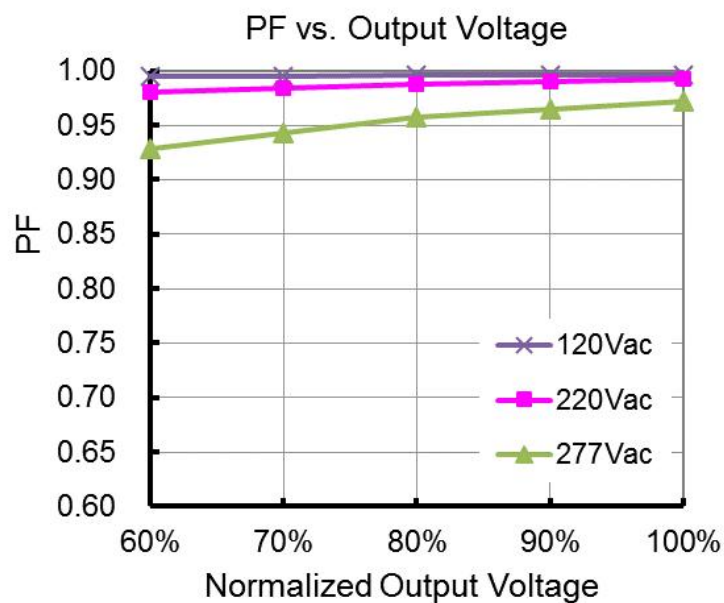
- Please contact with us for programming user manual and more information such as:

- Output Lumen Compensation
- Luminaire Thermal Protection by External NTC (with extra cable)
- Dimming Curve Customization (dim off threshold, minimum dimming level, maximum dimming voltage etc.)
- Adjustable Startup Time
- Time Dimming (adaptive mid-night, percentage, etc.)
- Customized Control Protocol

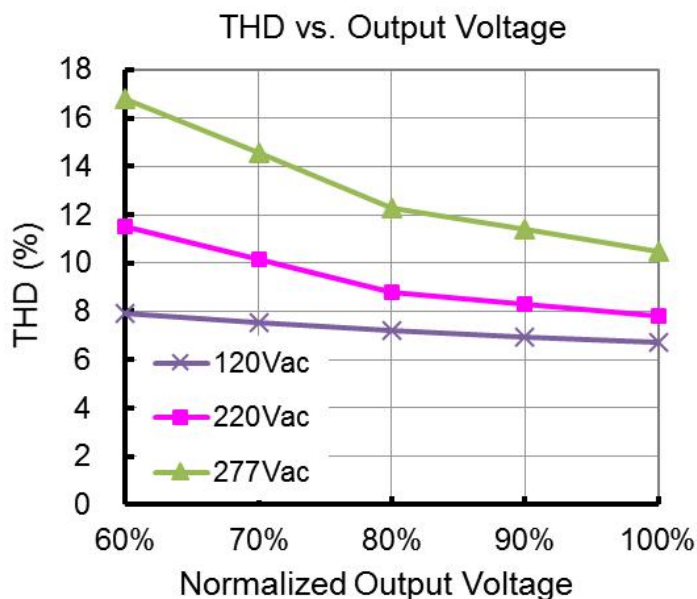
■ Lifetime vs. Case Temperature



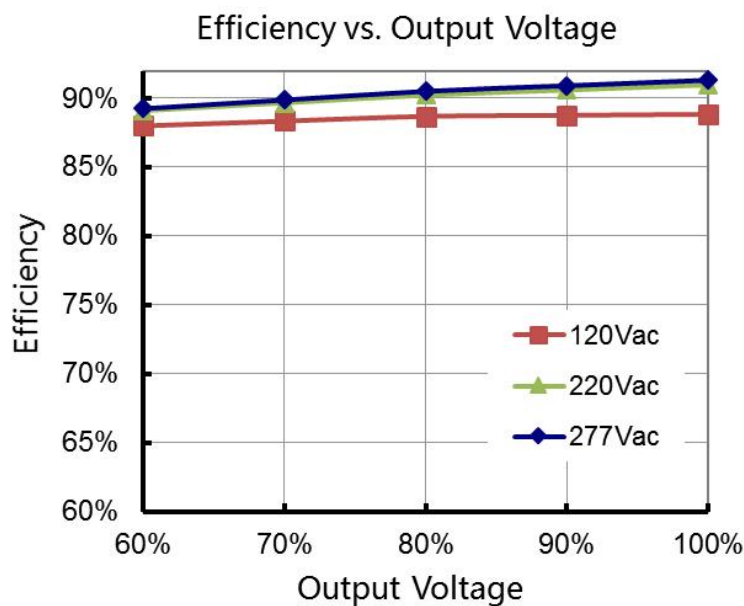
■ Power Factor vs. Load



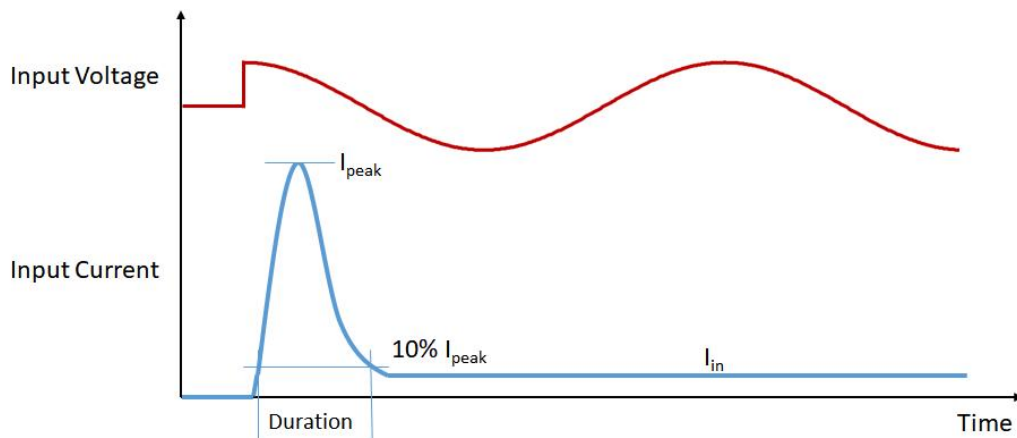
■ THD vs. Load



■ Efficiency vs. Load (1.05A Model)



Inrush Current



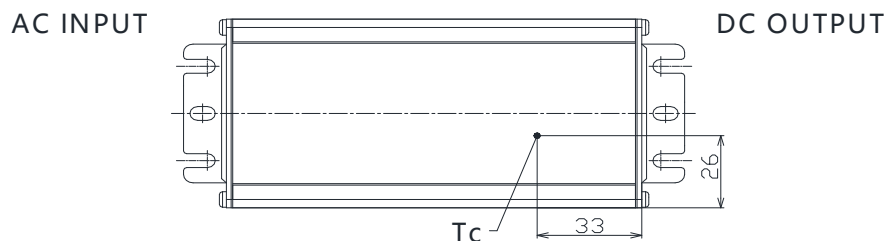
Input Voltage	I_{peak}	Duration
120Vac	37A	820us
220Vac	66A	820us
277Vac	90A	760us

Please contact with us for MCB calculation and waveforms.

Dielectric Strength

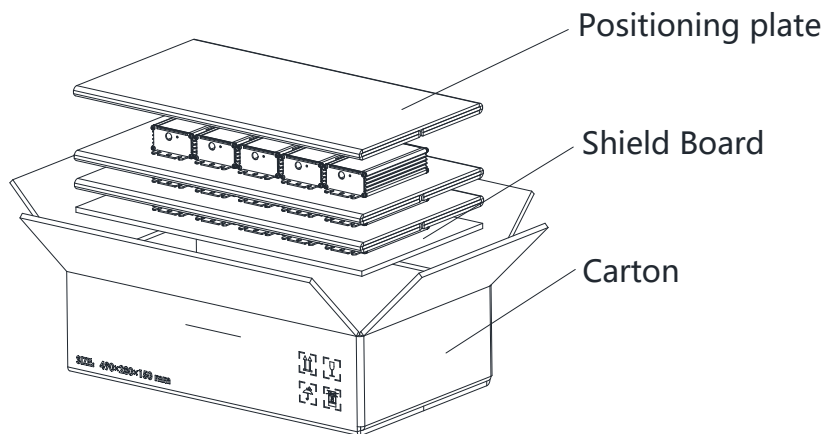
Unit: Vac	Input	Output	Dimming	Case
Input	-	3750	3750	1554
Output	3750	-	1554	1554
Dimming	3750	1554	-	1554
Case	1554	1554	1554	-

Tc Point



■ Packaging Information

Typical Carton Dimension(L×W×H)	490×280×150 mm
Positioning plate	3pcs/carton
Shield Board	1pcs/carton
LED Drivers/LED	15pcs/carton
Net Weight	9.0 kg/carton
Gross Weight	10.1 kg/carton



■ Mechanical Design

[illegible]

AC INPUT(UL SJTW 3×18AWG)

DIMMING WIRE(UL 2196 2×22AWG)

DC OUTPUT(UL SJTW 2×18AWG)

BLACK(ACL)
WHITE(ACN)
GREEN(GND)

PURPLE(Vdim+)
PINK(Vdim-)
RED(V+)
BLUE(V-)

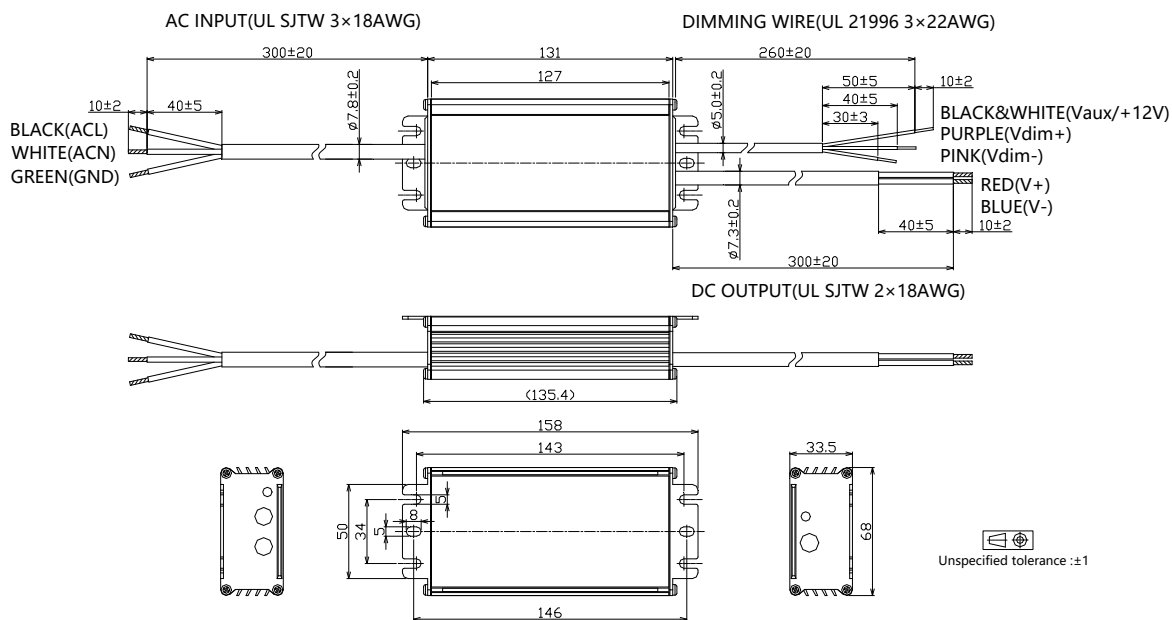
Dimensions (mm):

- Top view: 300±20, 131, 127, 260±20, 10±2, 40±5, 30±3, 10±2, 40±5, 10±2, 300±20, 7.8±0.2, 5.0±0.2, 7.3±0.2.
- Side view: 135.4.
- Bottom view: 158, 143, 50, 34, 5, 18, 5, 33.5, 68, 146.

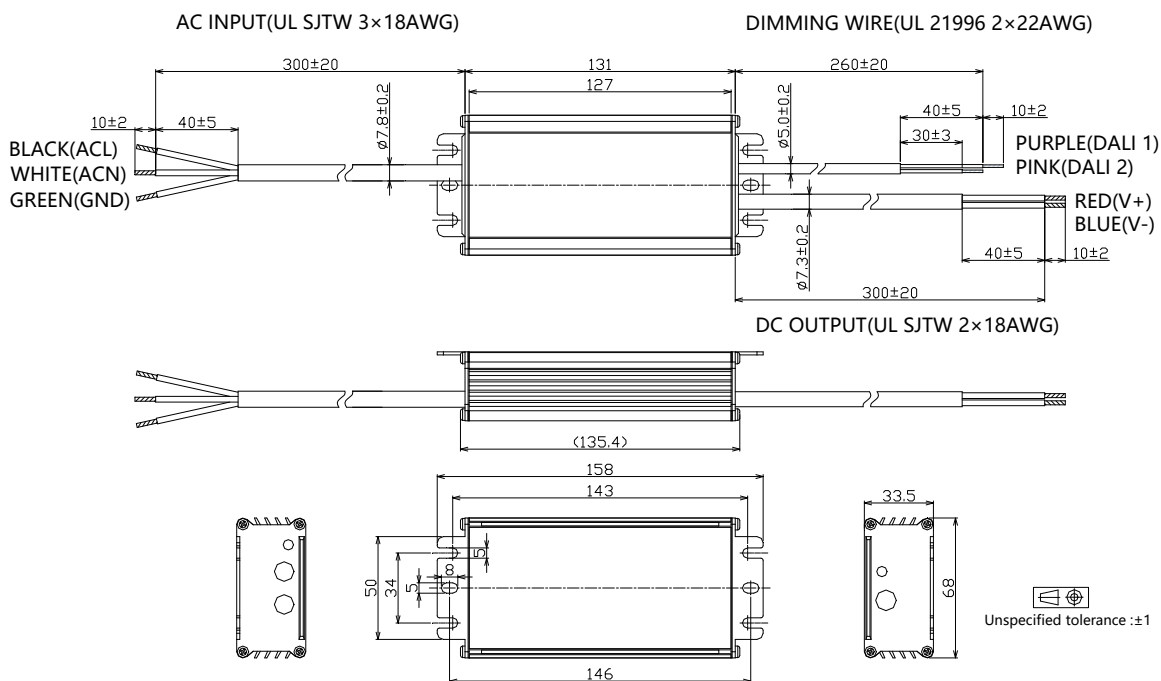
Unspecified tolerance: ±1

75W, Isolated Dimming, NFC Programmable LED Driver

- BLD-075-Cxxx-EN/ERU (UL Cable)

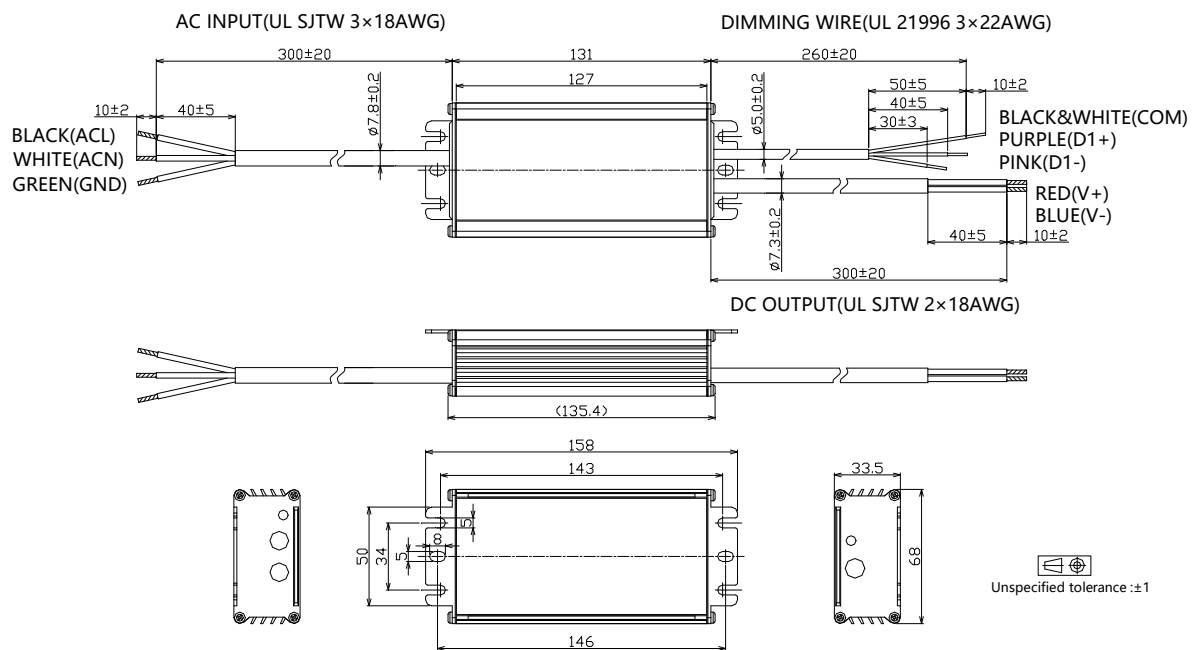


- BLD-075-Cxxx-ARU (UL Cable)

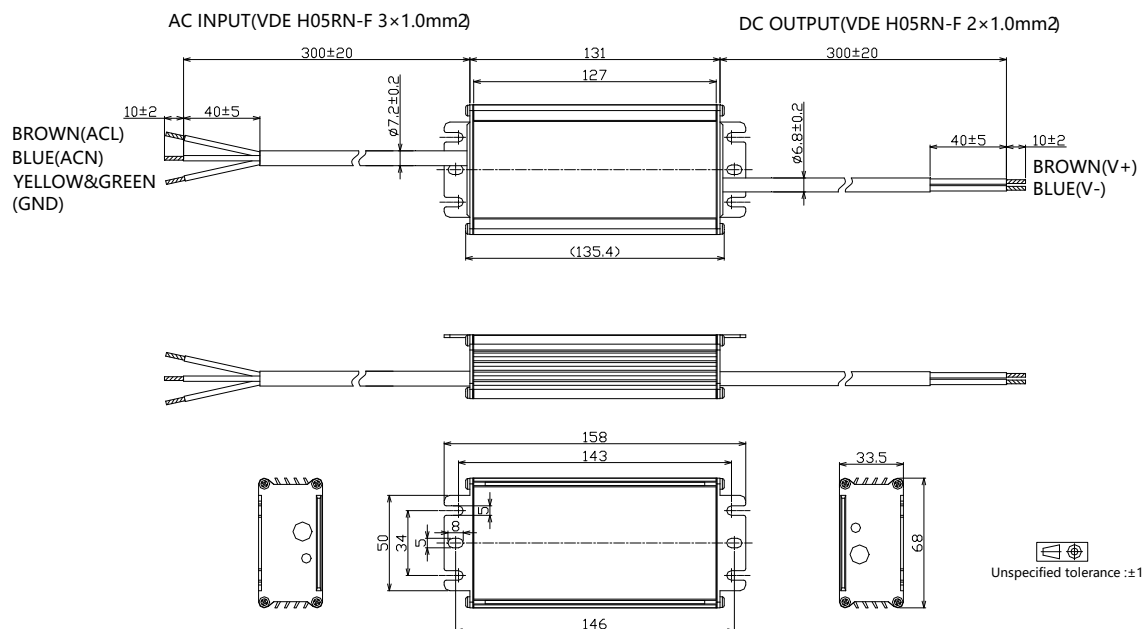


75W, Isolated Dimming, NFC Programmable LED Driver

- BLD-075-Cxxx-MRU (UL Cable)



- BLD-075-Cxxx-NN/TRS (VDE Cable)

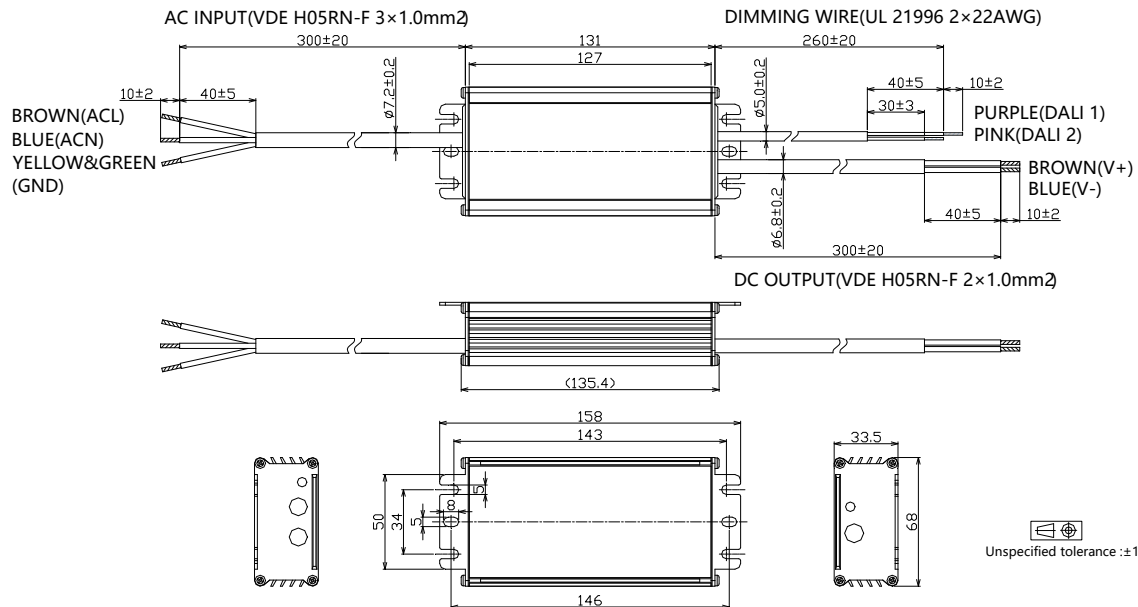


- **BLD-075-Cxxx-DN/DRS (VDE Cable)**

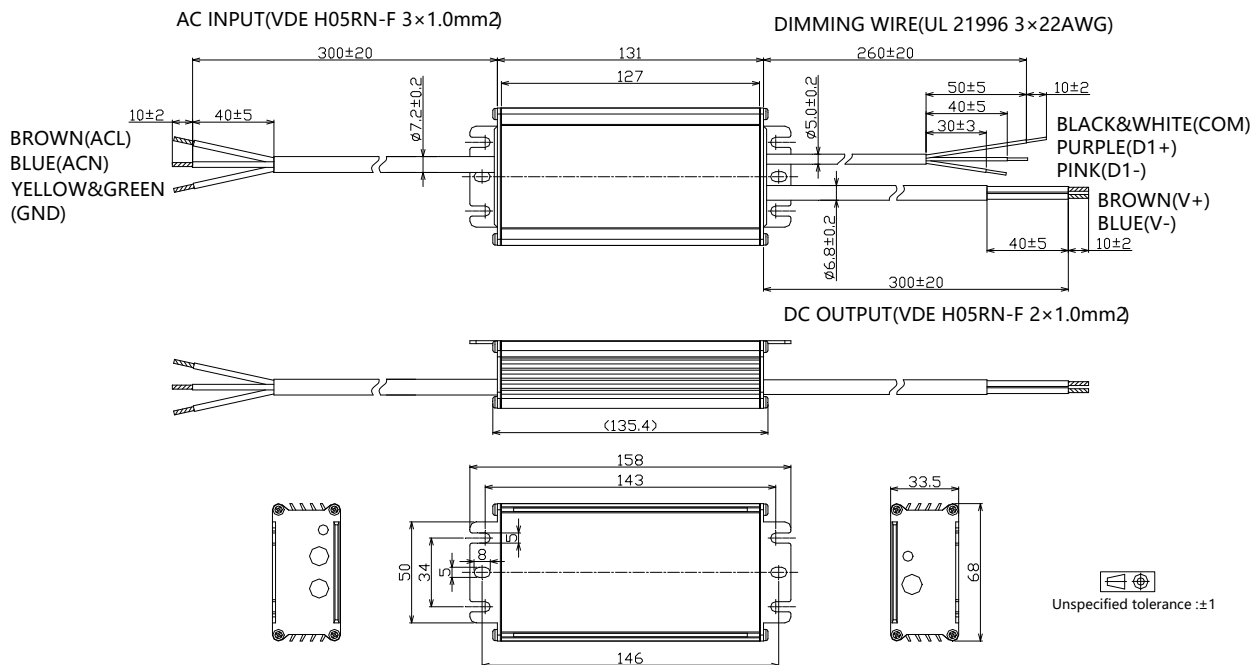


75W, Isolated Dimming, NFC Programmable LED Driver

- BLD-075-Cxxx-ARS (VDE Cable)



- BLD-075-Cxxx-MRS (VDE Cable)



75W, Isolated Dimming, NFC Programmable LED Driver

■ Output Operation Range

Model	Typical Set Output Current (mA)	Max Output Power (W)	Output Voltage Min (V)	Output Voltage Max(V)	Minimum Dimming Current (mA)
-C050	500	75	90	150	50
	450	75	100	167	45
	400	75	113	188	40
	350	75	129	214	35
	300	64	129	214	35
	250	54	129	214	35
	200	43	129	214	35
	150	32	129	214	35
	...	...	...	...	...
	35	8	129	214	35

Model	Typical Set Output Current (mA)	Max Output Power (W)	Output Voltage Min (V)	Output Voltage Max(V)	Minimum Dimming Current (mA)
-C070	700	75	64	107	70
	650	75	69	115	65
	600	75	75	125	60
	550	75	82	136	55
	500	75	90	150	50
	450	68	90	150	50
	400	60	90	150	50
	350	53	90	150	50
	...	...	...	...	...
	50	8	90	150	50

75W, Isolated Dimming, NFC Programmable LED Driver

Model	Typical Set Output Current (mA)	Max Output Power (W)	Output Voltage Min (V)	Output Voltage Max(V)	Minimum Dimming Current (mA)
-C105	1050	75	43	71	105
	1000	75	45	75	100
	950	75	47	79	95
	900	75	50	83	90
	850	75	53	88	85
	800	75	56	94	80
	750	75	60	100	75
	700	75	64	107	70
	650	70	64	107	70
	600	64	64	107	70
	550	59	64	107	70
	500	54	64	107	70
	...	...	...	...	...
	70	8	64	107	70

Model	Typical Set Output Current (mA)	Max Output Power (W)	Output Voltage Min (V)	Output Voltage Max(V)	Minimum Dimming Current (mA)
-C140	1400	75	32	54	140
	1300	75	35	58	130
	1200	75	38	63	120
	1100	75	41	68	110
	1050	75	43	71	105
	1000	71	43	71	105
	950	68	43	71	105
	900	64	43	71	105
	850	61	43	71	105
	800	57	43	71	105
	750	54	43	71	105
	700	50	43	71	105
	...	...	...	...	...
	105	8	43	71	105

75W, Isolated Dimming, NFC Programmable LED Driver

Model	Typical Set Output Current (mA)	Max Output Power (W)	Output Voltage Min (V)	Output Voltage Max(V)	Minimum Dimming Current (mA)
-C210	2100	75	21	36	210
	2000	75	23	38	200
	1900	75	24	39	190
	1800	75	25	42	180
	1700	75	26	44	170
	1600	75	28	47	160
	1500	75	30	50	150
	1400	75	32	54	140
	1300	70	32	54	140
	1200	64	32	54	140
	1100	59	32	54	140
	1000	54	32	54	140
	...	...	...	...	...
	140	8	32	54	140

Model	Typical Set Output Current (mA)	Max Output Power (W)	Output Voltage Min (V)	Output Voltage Max(V)	Minimum Dimming Current (mA)
-C280	2800	75	16	27	280
	2700	75	17	28	270
	2600	75	17	29	260
	2500	75	18	30	250
	2400	75	19	31	240
	2300	75	20	33	230
	2200	75	20	34	220
	2100	75	21	36	210
	2000	71	21	36	210
	1900	68	21	36	210
	1800	64	21	36	210
	1700	61	21	36	210
	...	...	...	...	...
	210	61	21	36	210

75W, Isolated Dimming, NFC Programmable LED Driver

■ Revision History

Revision	Date	Contents
D	2022-03-22	1. Index page added 2. Reduced dimming interface sourcing current 3. DALI 2.0 compatibility added 4. Programming instruction added 5. Inrush current data added 6. Tc point position indication added 7. Dielectric strength level added 8. Packaging information added 9. Mechanical design change with dimming cable color 10. Revision history added
E	2022-12-14	1. DMX dimmable models mechanical design updated
F	2023-7-14	1. Update cable selection table in Model List Section
G	2023-09-15	1. Update model selection table with -DN,-EN,DR models