

Product Datasheet



The global certified BLD-900-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 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.

☒ Horticultural ☒ Stadium ☒ Flood ☒ Harbor ☒ UV ☒ Fishing



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■ Features

- Supply Voltage: 100-305Vac or 127-420Vdc, 380Vac for 2 hours
- Great Surge Immunity 10kV
- 96% Efficiency Max.
- Customized Endcap
- Low Inrush Current
- Programmable Hot Swap
- Active Daisy Chain and Master Mode
- 100,000Hour Life @ Tc=75°C
- 7 Year Warranty @ Tc<=75°C
- Airset™ NFC Programmability
- +/-2% Output Current Accuracy
- Isolated 0-10V/PWM/Time/DALI2.0/DMX/RDM Dimmable
- Dim Off with 0.5W Standby Power
- 12V 300mA Auxiliary Power to Power Controllers and Fans (Optional)
- UL Class P, 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	Certification
BLD-900-C18A-XYZ	100-305Vac	900 W	30-55Vdc	16.5A	18A	UL/FCC/CE
BLD-900-C860-XYZ	100-305Vac	900 W	63-150Vdc	6A	8.6A	
BLD-900-C600-XYZ	100-305Vac	900 W	90-214Vdc	4.2A	6A	
BLD-900-C420-XYZ	100-305Vac	900 W	129-321Vdc	2.8A	4.2A	

Note: The load has to be no more than 800W when input voltage is less than 180Vac.

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

Z = **U**, UL cable with ground wire (green) **S**, VDE cable/Class I **D**, VDE cable/Class II

Note: See the **Output Operation Range Section** for programmable model details

■ Technical Data

Input Voltage	100-305Vac or 127-420Vdc, 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	7.5Amax@120Vac & Full-Load, 3.7Amax@277Vac & Full-Load
Inrush Current	See Inrush Current Section in the datasheet
Leakage Current	1mA max @277Vac 60Hz, UL8750, 0.75mA max @220Vac 50Hz, IEC61347-1
Input Under Voltage	Shut down and auto-restart
Surge Protection	Line to line 6kV, line to ground 10kV, IEC 61000-4-5
Current Accuracy	±5%Io for non programmable models, ±2%Io for programmable models
Ripple Current	Ip-p:5%Io max
Setup Time	1.2s max
Overshoot	10% Io max & LED Load
Output Over Voltage	110% 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	$-40^\circ\text{C} \sim +85^\circ\text{C}$; 5%RH~100%RH
MTBF	$\geq 320,000$ hours, 75°C case temperature (MIL-HDBK-217F)
Lifetime	$\geq 100,000$ hours, 75°C case temperature, refer to life vs. T_c curve
Case Temperature	90°C max, marked in the T_c point of label
Dimensions	9.33x4.92x1.93 by inch (body), 10.3x4.92x1.93 by inch (endcaps included) 237 x 125 x 49 by mm (body), 262 x 125 x 49 by mm (endcaps included)
Net Weight	2600g
Packing	See Package Information Section in the datasheet

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

■ Safety/EMC Compliance

Safety Standard	Description
UL8750	Light emitting diode(LED) equipment for use in lighting products
UL1012	Power units other than class 2
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
EMI 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
EMS Standards	Description
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

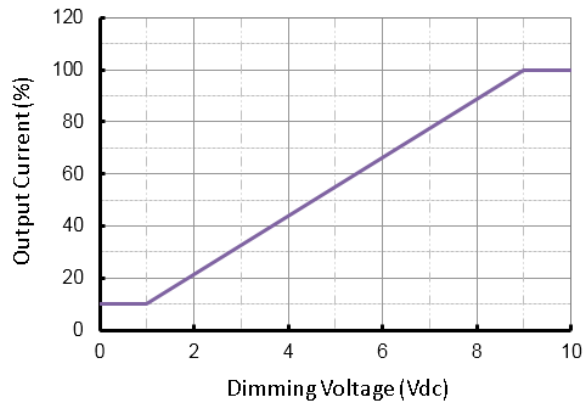
■ Dimming

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
External PWM Controller Current Sinking 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

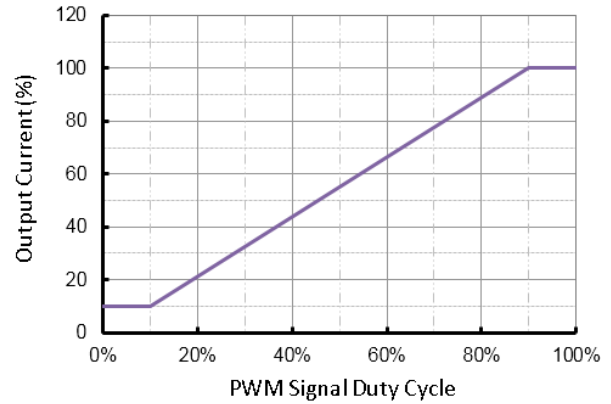
- Dimming Curve

a. Without dim-off

0-10V Dimming Curve

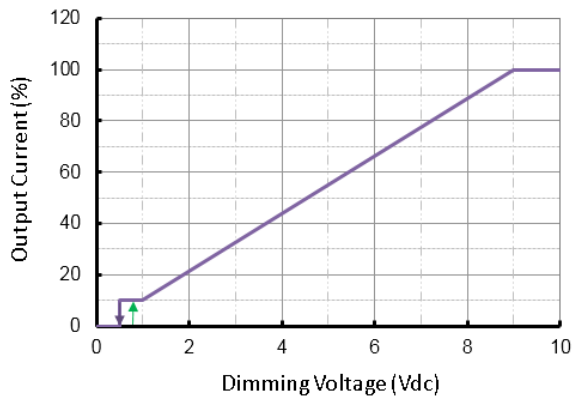


PWM Dimming Curve

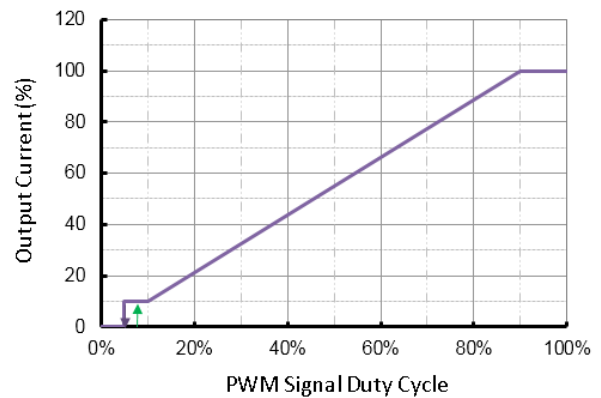


b. With dim-off

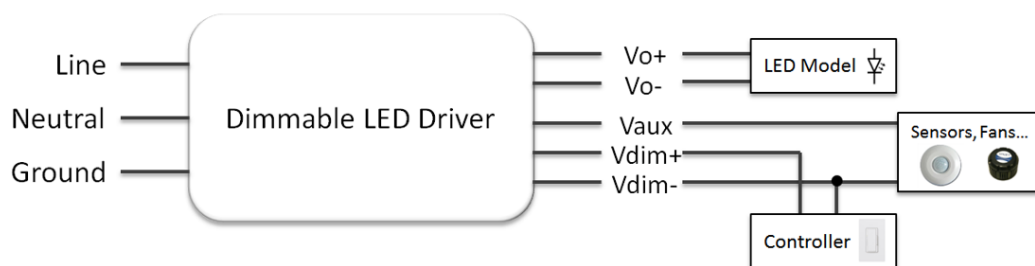
0-10V Dimming Curve



PWM Dimming Curve



- Dimming Wiring

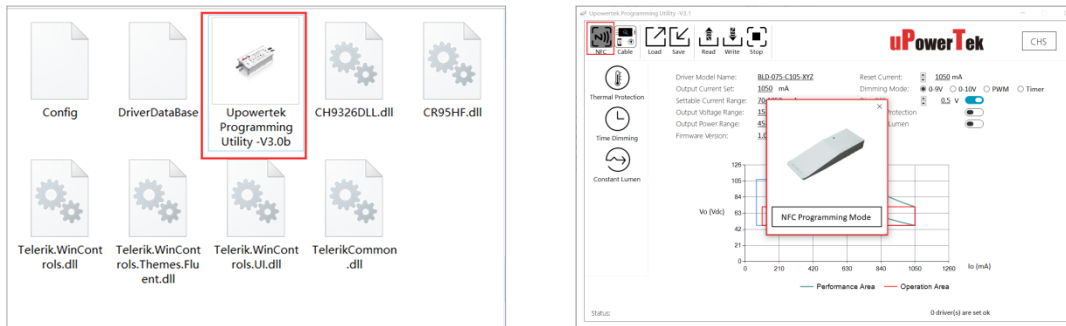


■ Programming

- NFC Programming by PC/Laptop

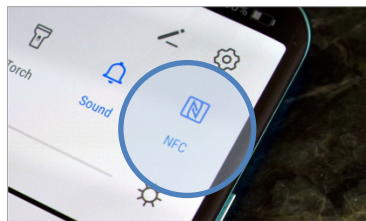


- Download PC Software at <https://www.upowertek.com/download-2/>
- Click Upowertek Programming Utility.exe
- The GUI start and notify you the programming mode (cable programming or NFC programming)
- Click "NFC" button if it's not NFC programming mode.



- NFC Programming by Smartphone

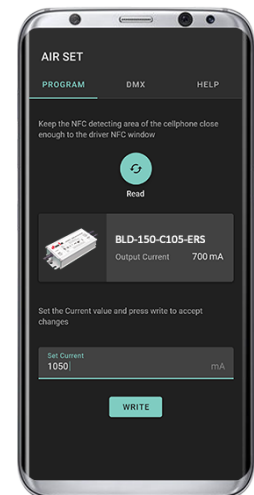
- Download Android APP at <https://www.upowertek.com/download-2/>
- Only available on Android cellphone (iPhone is not supported)
- The cellphone should have NFC function and make sure it is enabled.



- Turn on NFC switch of cellphone, then open the APP by icon below.



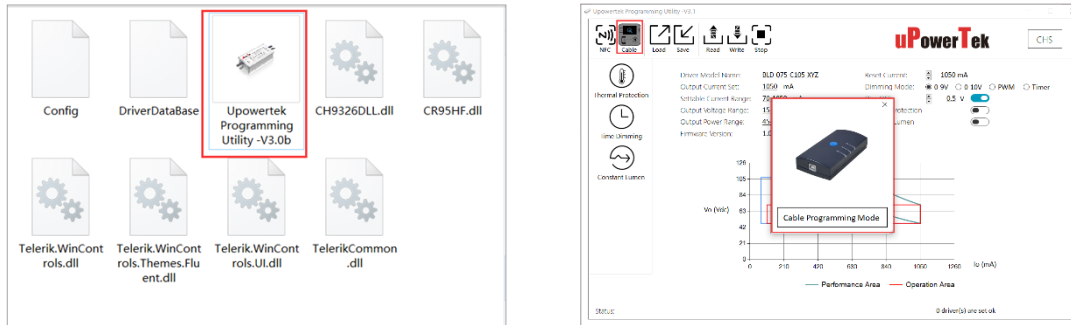
uPowerTek
Airset



- Cable Programming



- Download PC Software at <https://www.upowertek.com/download-2/>
- Click Upowertek Programming Utility.exe
- The GUI start and notify you the programming mode (cable programming or NFC programming)

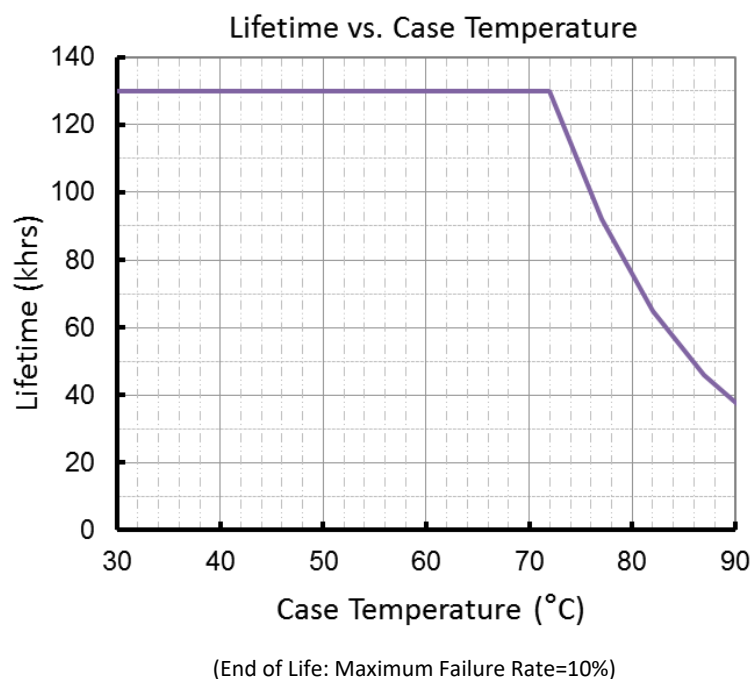


- Click "Cable" button if it's not cable programming mode.
- Connect the Vdim+ and Vdim- wires to the right ones (the same color) of the programmer.

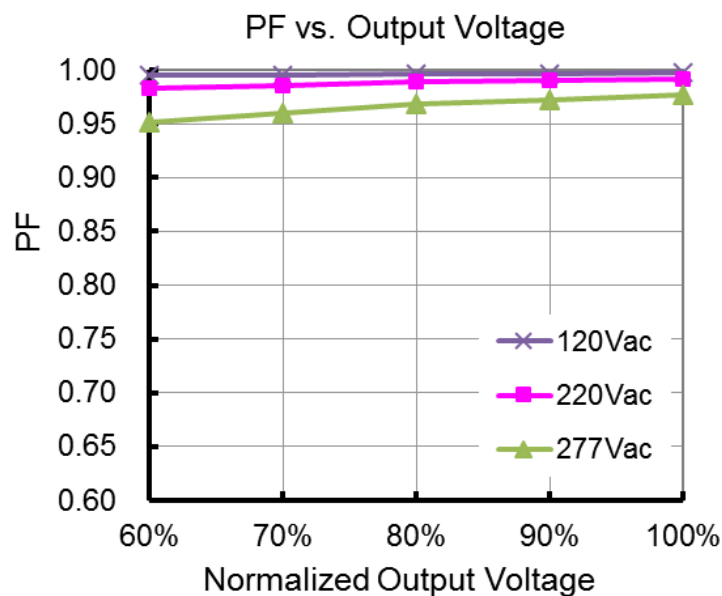
- Please contact with us for product user manual and more information such as:

- 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

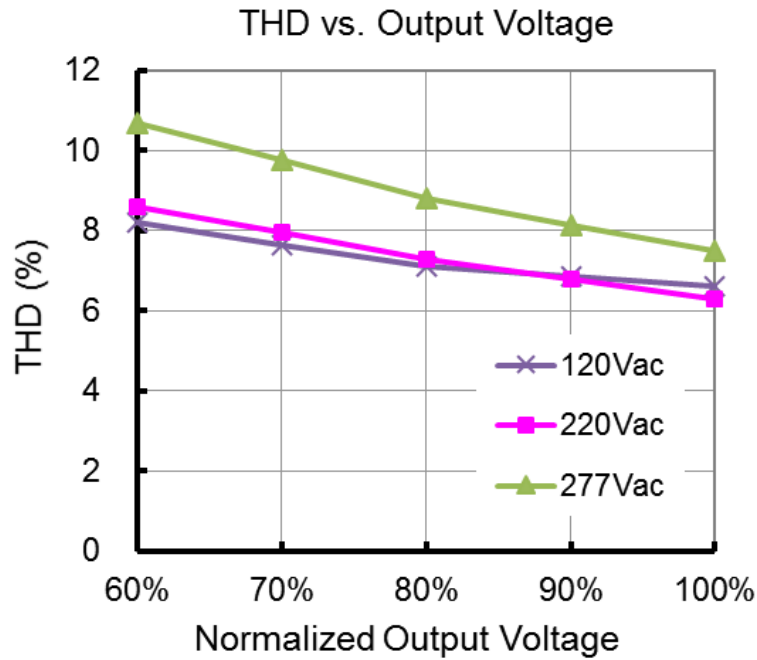
■ Lifetime vs. Case Temperature



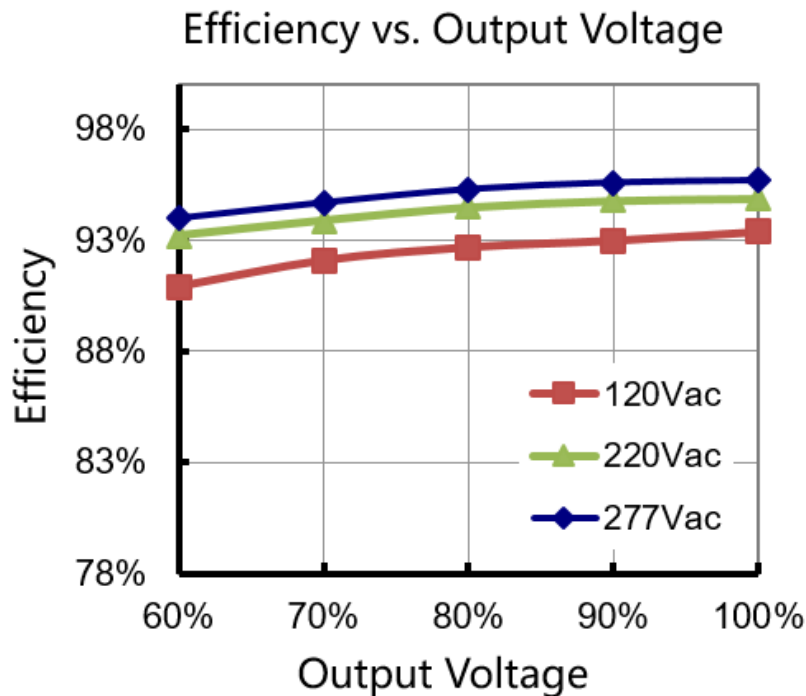
■ Power Factor vs. Load



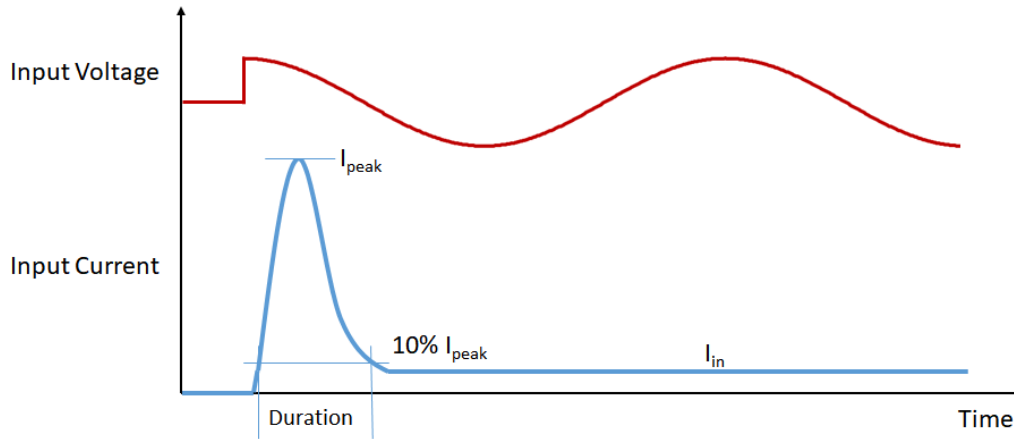
■ THD vs. Load



■ Efficiency vs. Load (18A Model)



Inrush Current



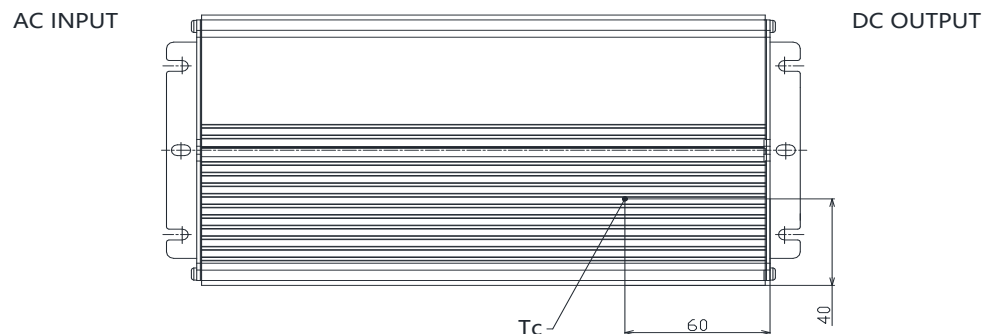
Input Voltage	I_{peak}	Duration
120Vac	3A	60mS
220Vac	5A	70mS
277Vac	8A	70mS

Please contact with us for MCB calculation and waveforms.

Dielectric Strength

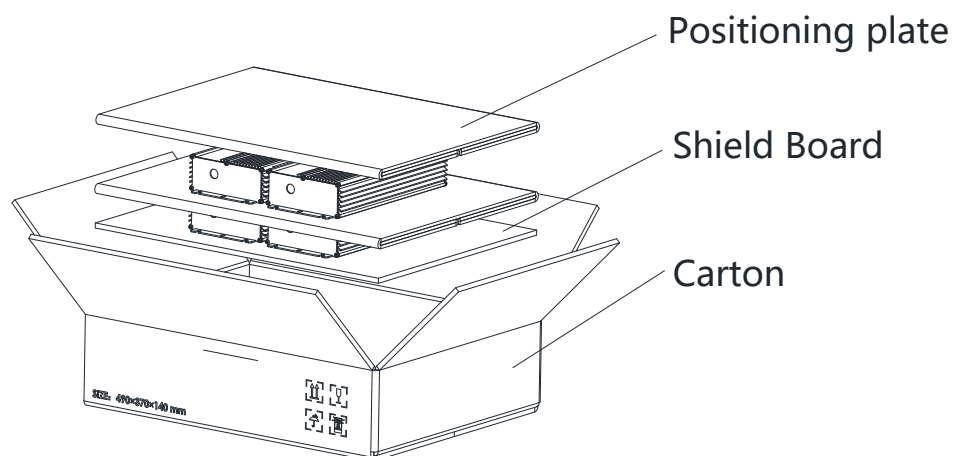
Unit: Vac	Input	Output	Dimming	Case
Input	-	3750	3750	1554
Output	3750	-	1554	1554
Dimming	3750	1554	-	1554
Case	1554	1554	1554	-

Tc Point



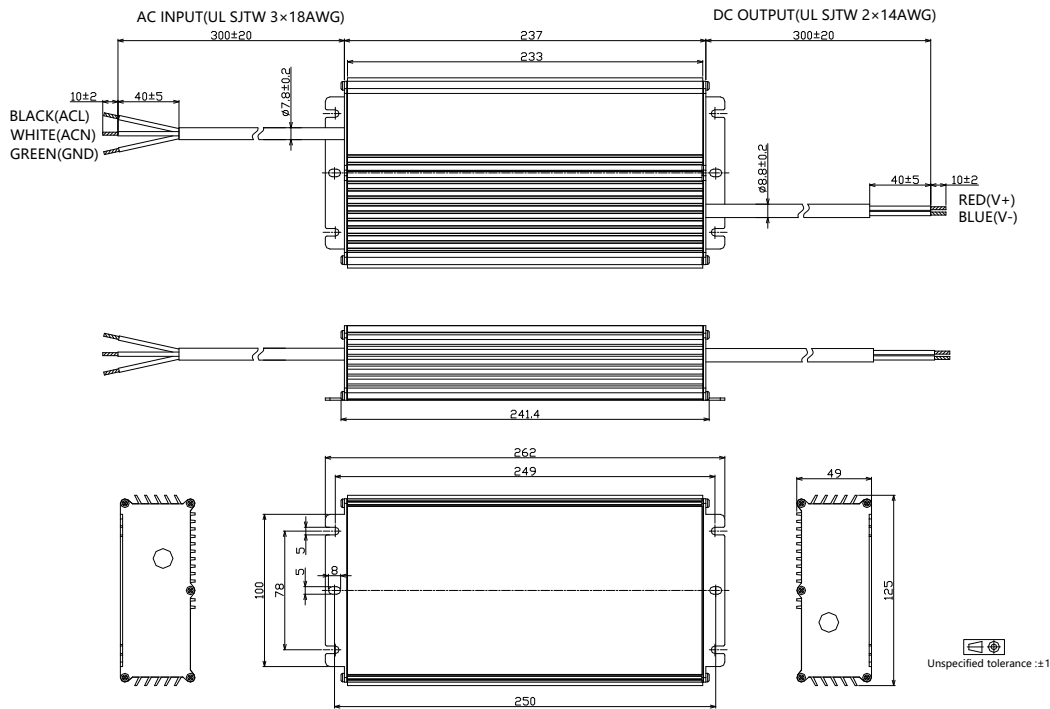
■ Packaging Information

Typical Carton Dimension(L×W×H)	490×370×140 mm
Positioning plate	2pcs/carton
Shield Board	1pcs/carton
LED Drivers	4pcs/carton

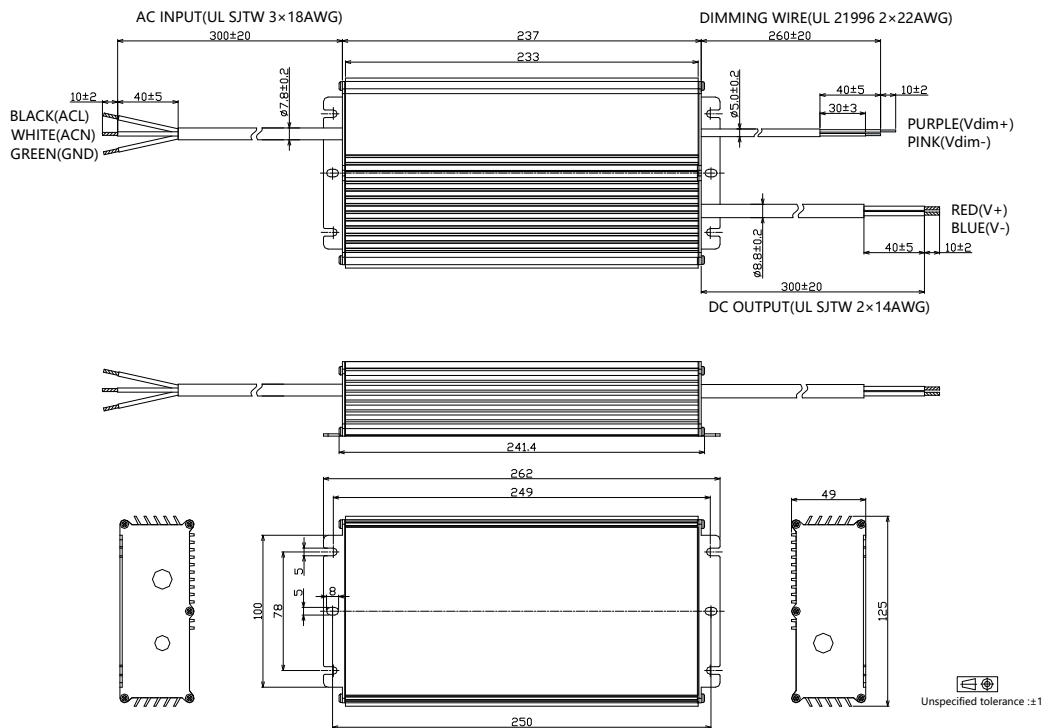


Mechanical Design

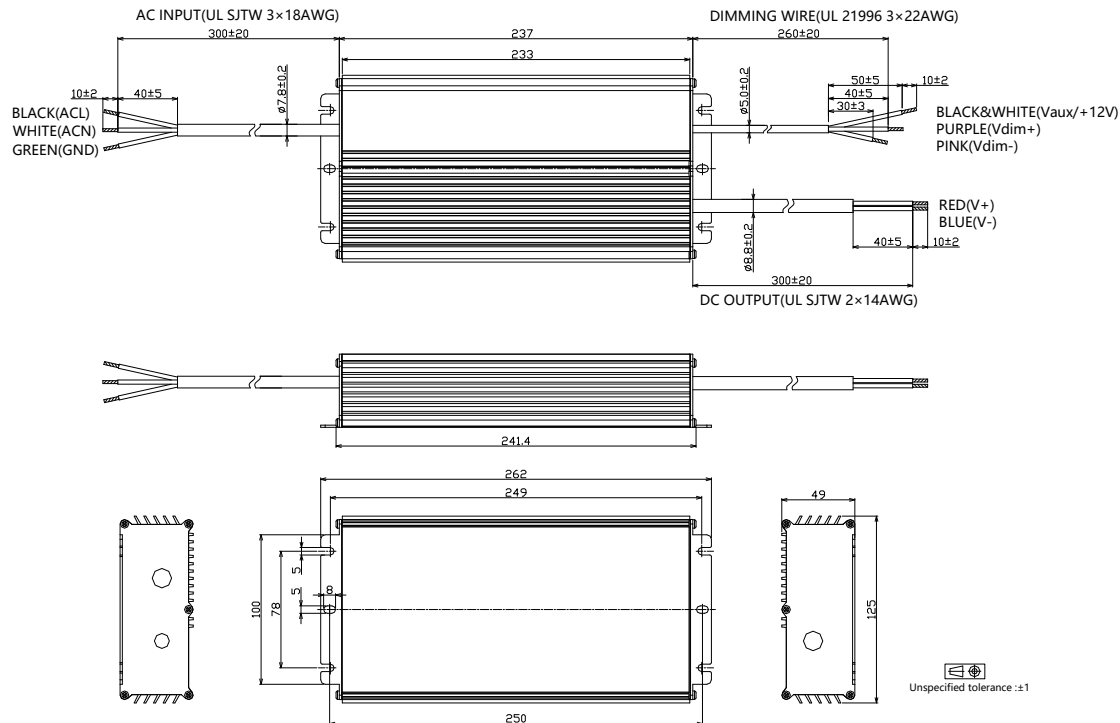
BLD-900-Cxxx-NN/TRU (UL Cable)



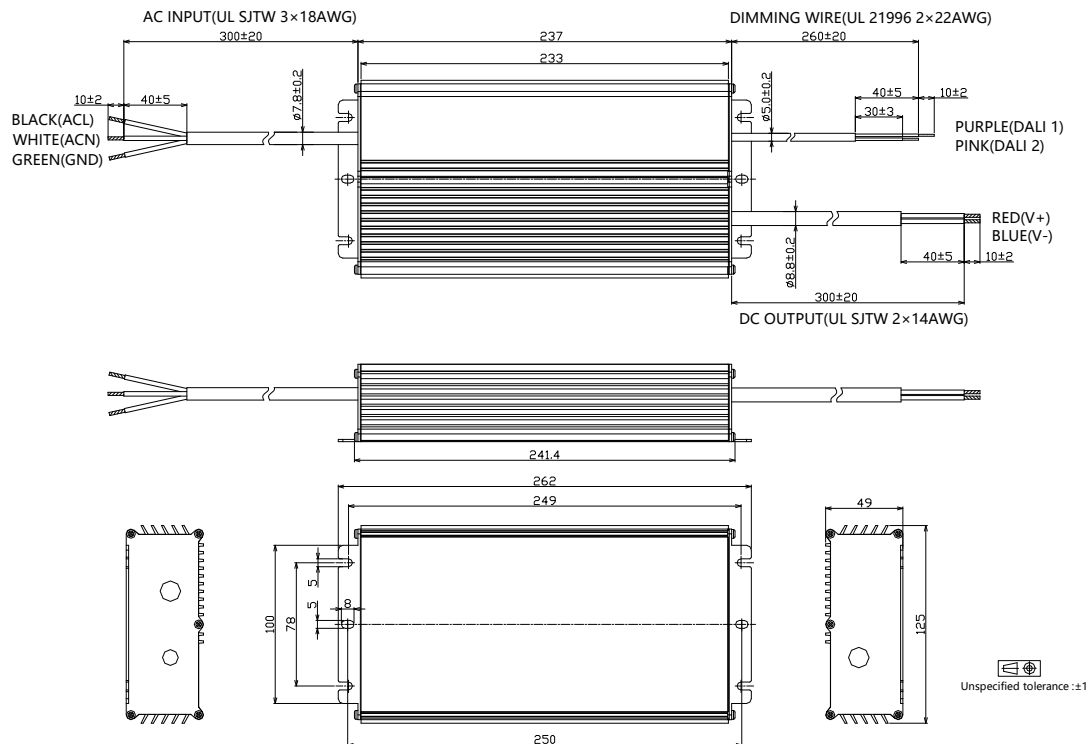
BLD-900-Cxxx-DN/DRU (UL Cable)



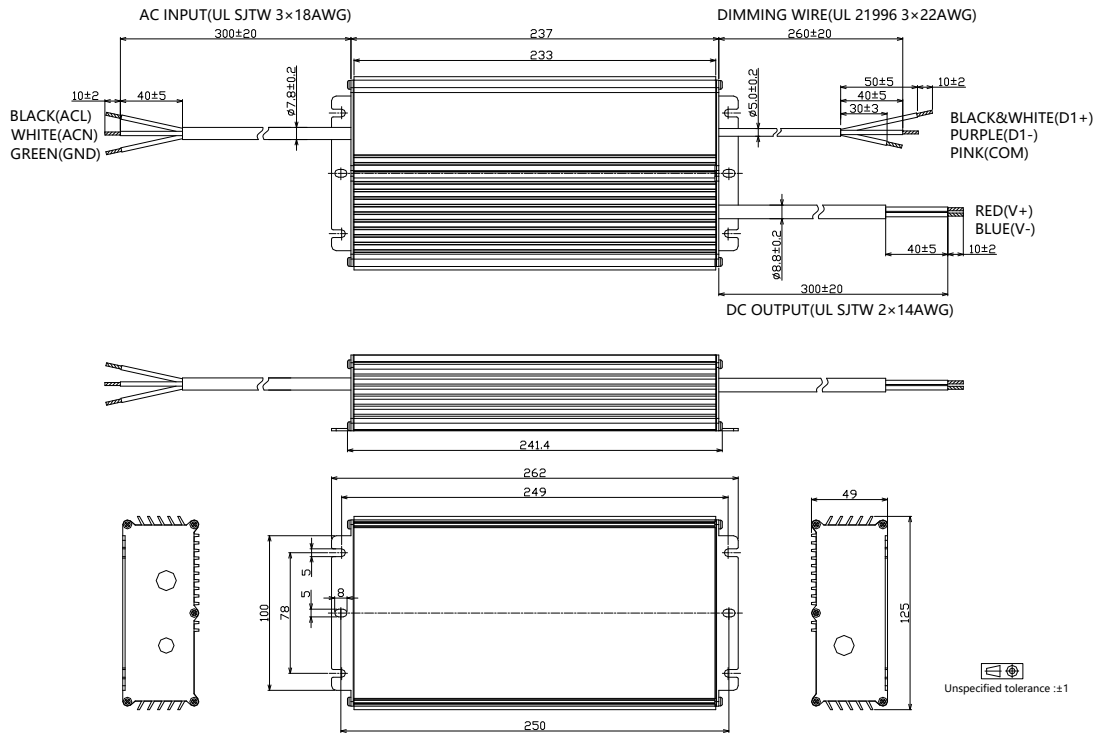
- **BLD-900-Cxxx-ERU (UL Cable)**



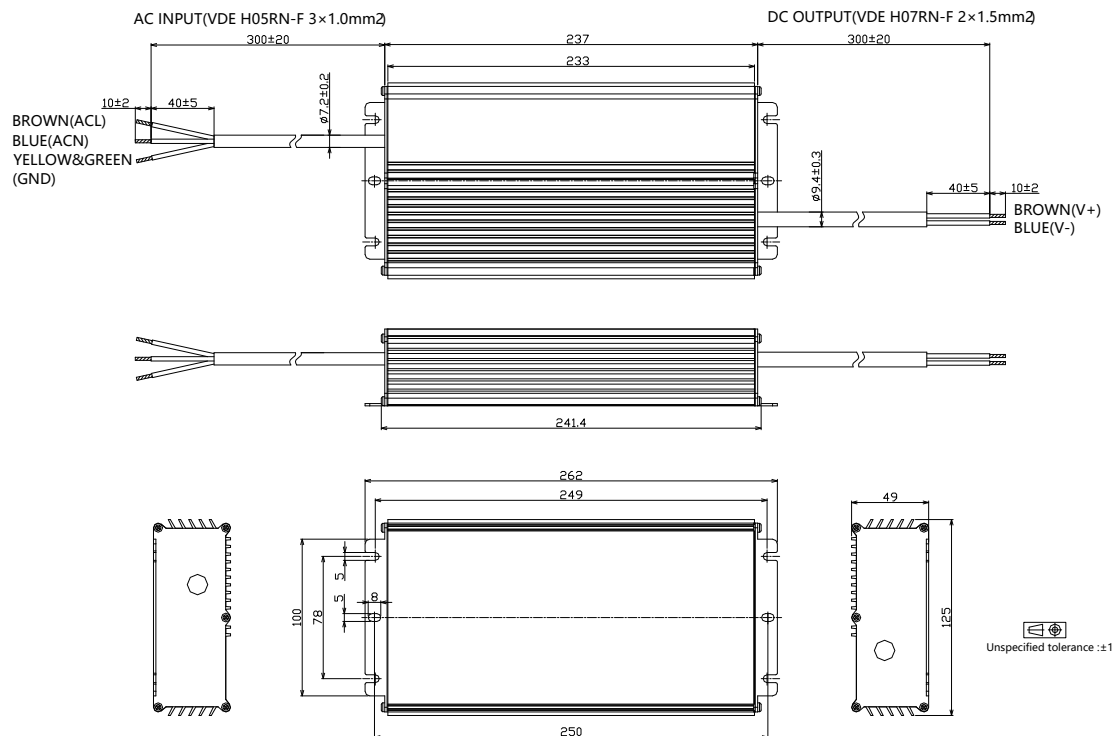
- **BLD-900-Cxxx-ARU (UL Cable)**



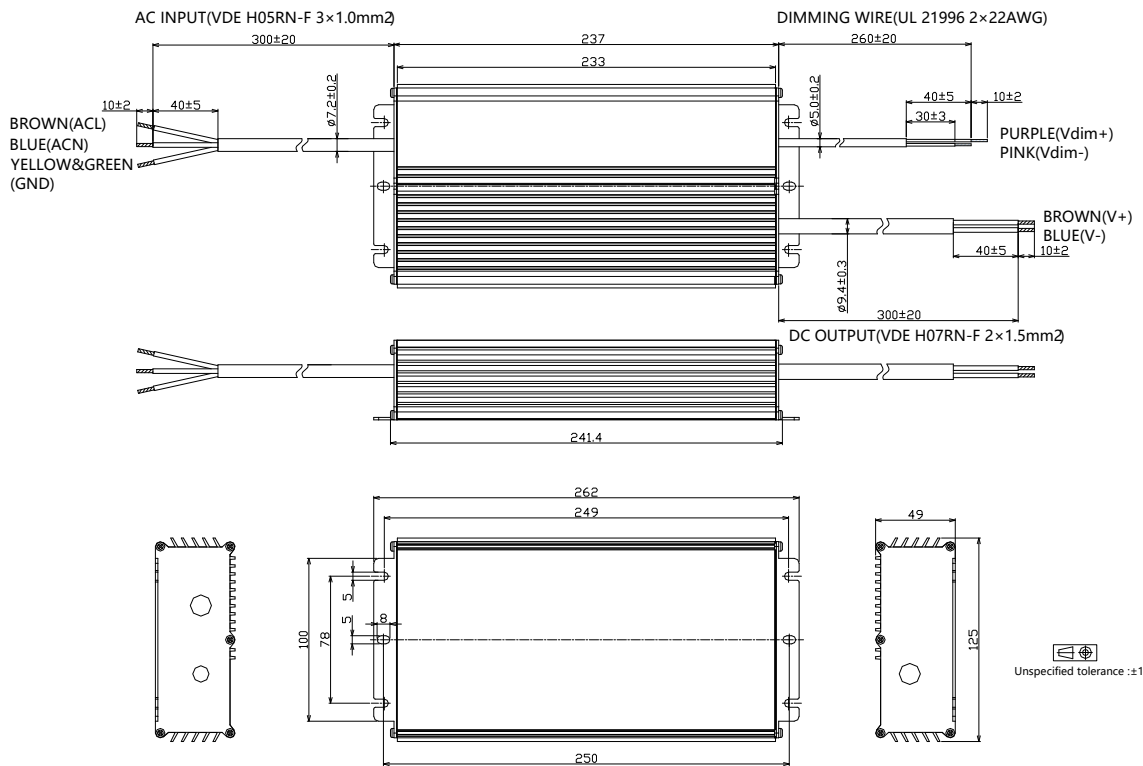
- **BLD-900-Cxxx-MRU (UL Cable)**



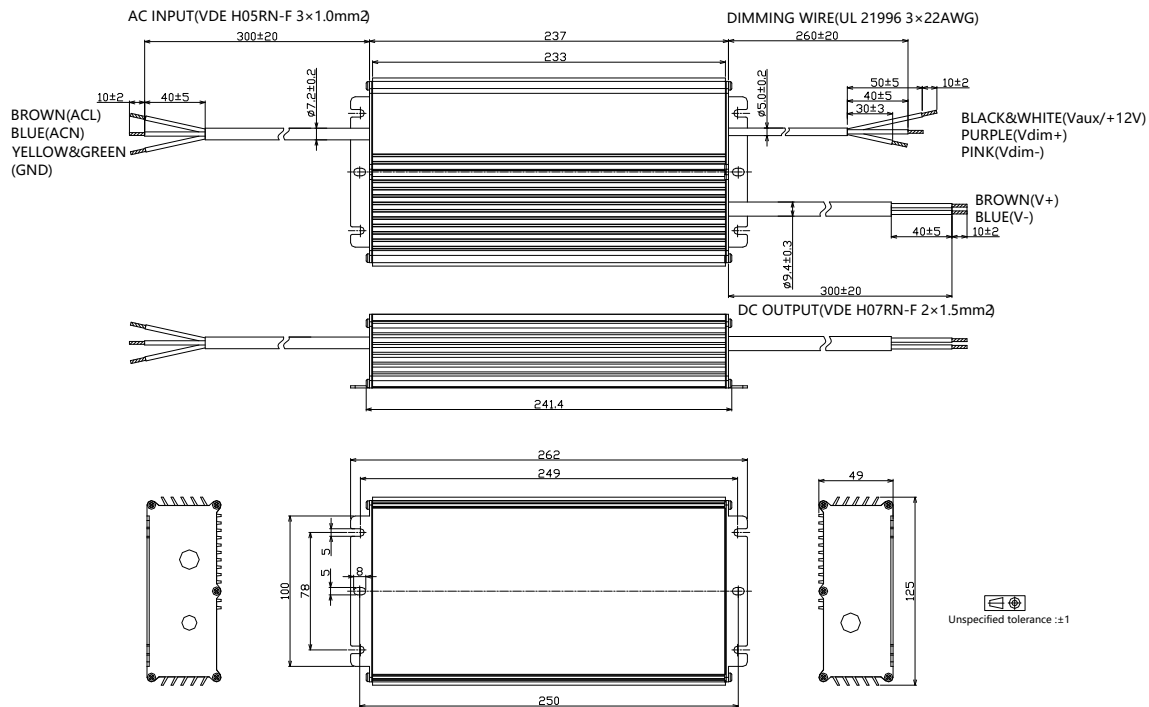
- **BLD-900-Cxxx-NN/TRS (VDE CABLE, MODELS WITH HIGHER THAN 60V OUTPUT VOLTAGE)**



- **BLD-900-Cxxx-DN/DRS** (VDE CABLE, MODELS WITH HIGHER THAN 60V OUTPUT VOLTAGE)

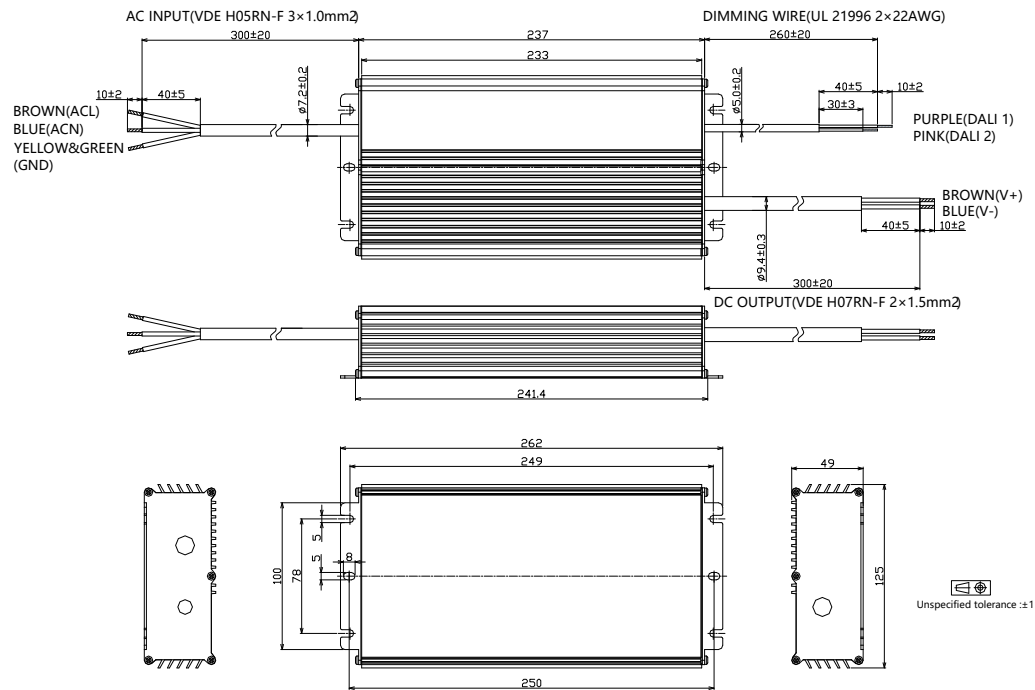


- **BLD-900-Cxxx-EN/ERS** (VDE CABLE, MODELS WITH HIGHER THAN 60V OUTPUT VOLTAGE)

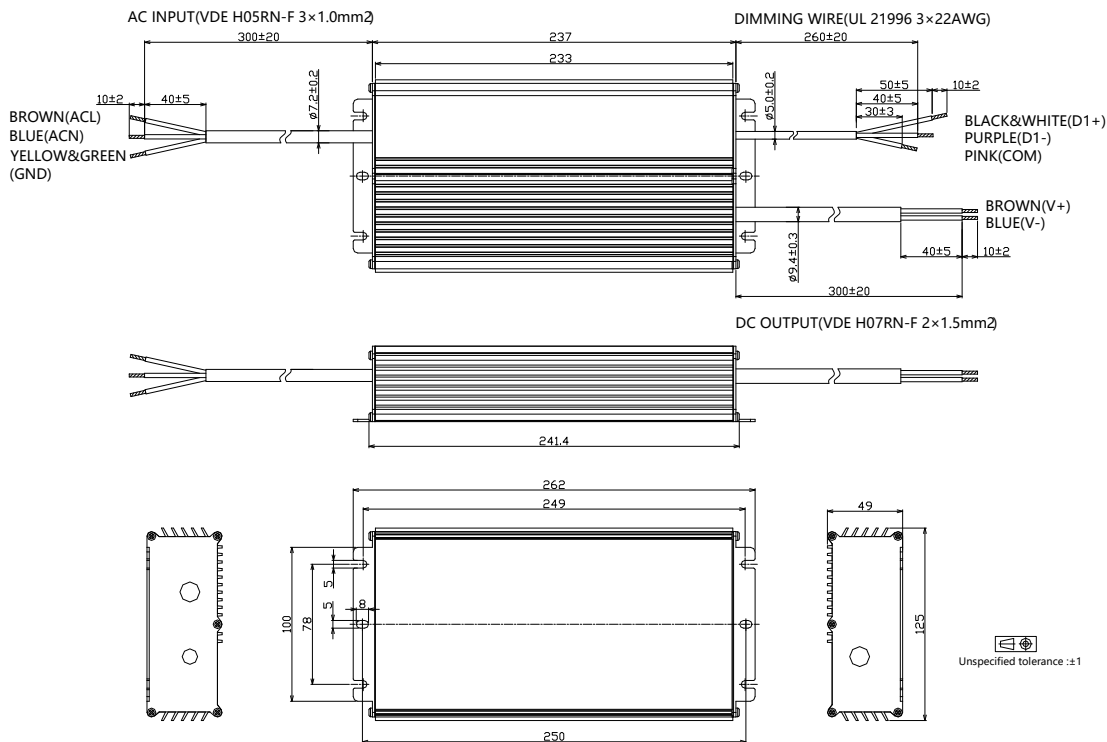


900W, 120-277Vac Input, Long Life High Quality Driver

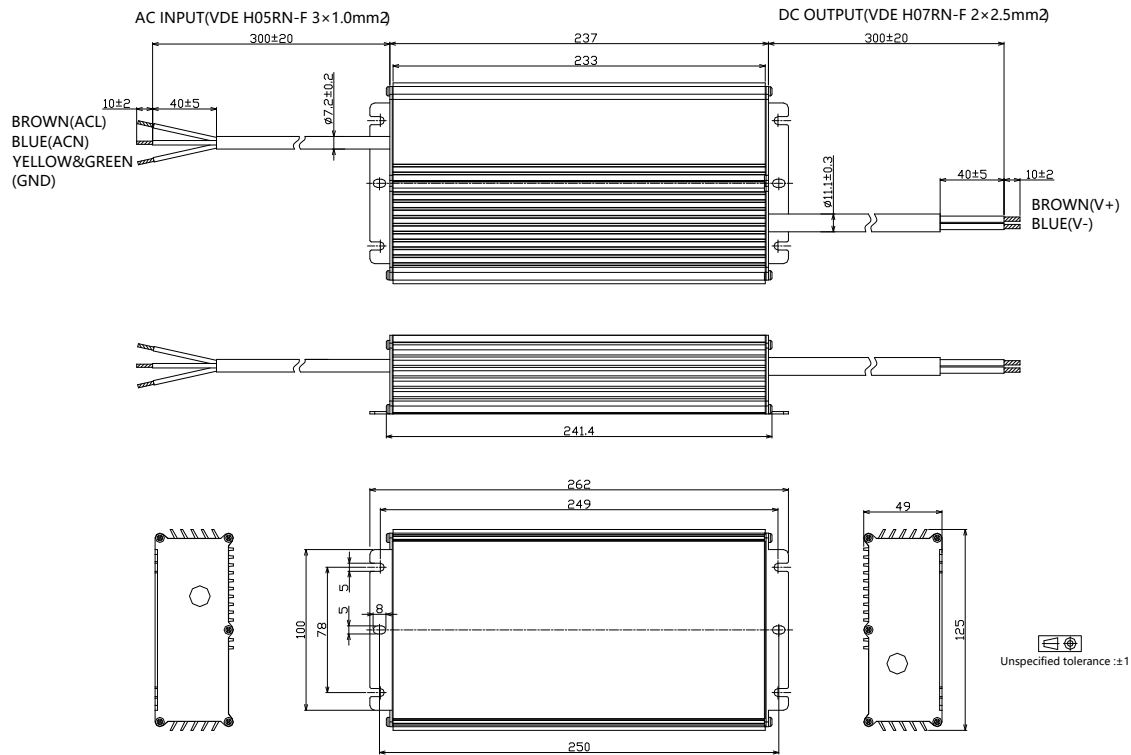
- BLD-900-Cxxx-ARS (VDE CABLE, MODELS WITH HIGHER THAN 60V OUTPUT VOLTAGE)



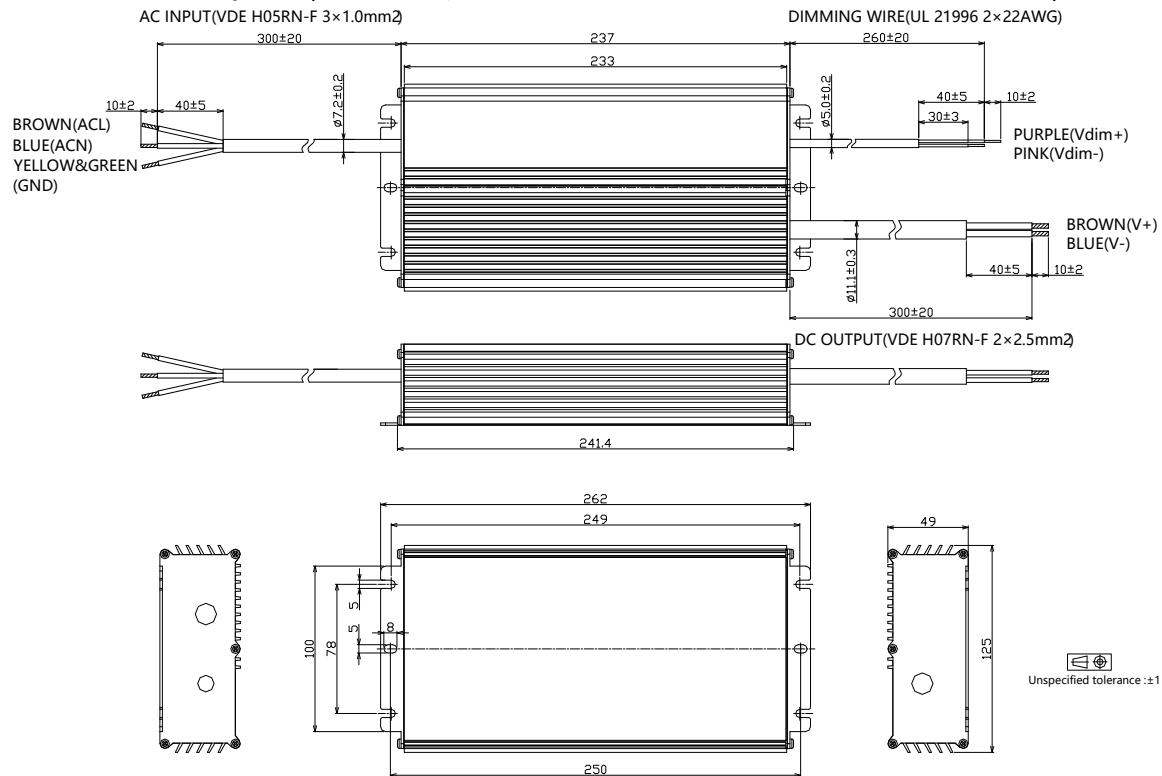
- BLD-900-Cxxx-MRS (VDE CABLE, MODELS WITH HIGHER THAN 60V OUTPUT VOLTAGE)



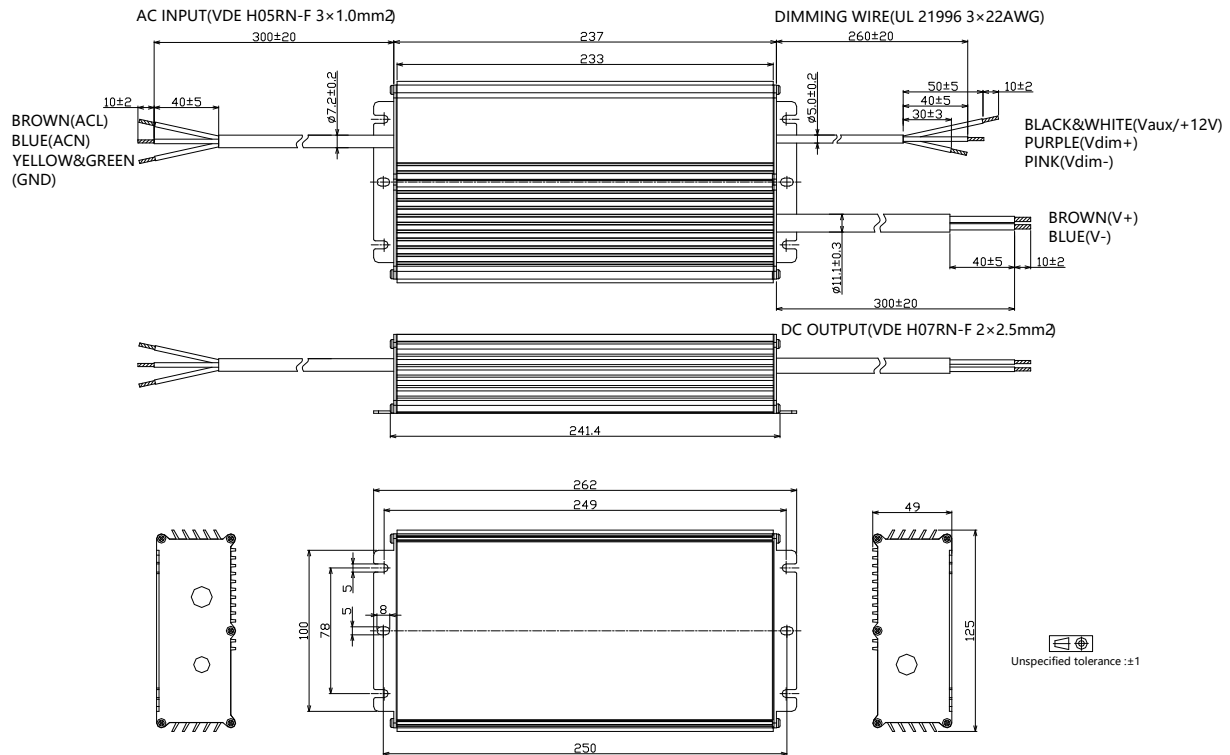
- **BLD-900-Cxxx-NN/TRS** (VDE CABLE, MODELS WITH LESS THAN 60V OUTPUT VOLTAGE)



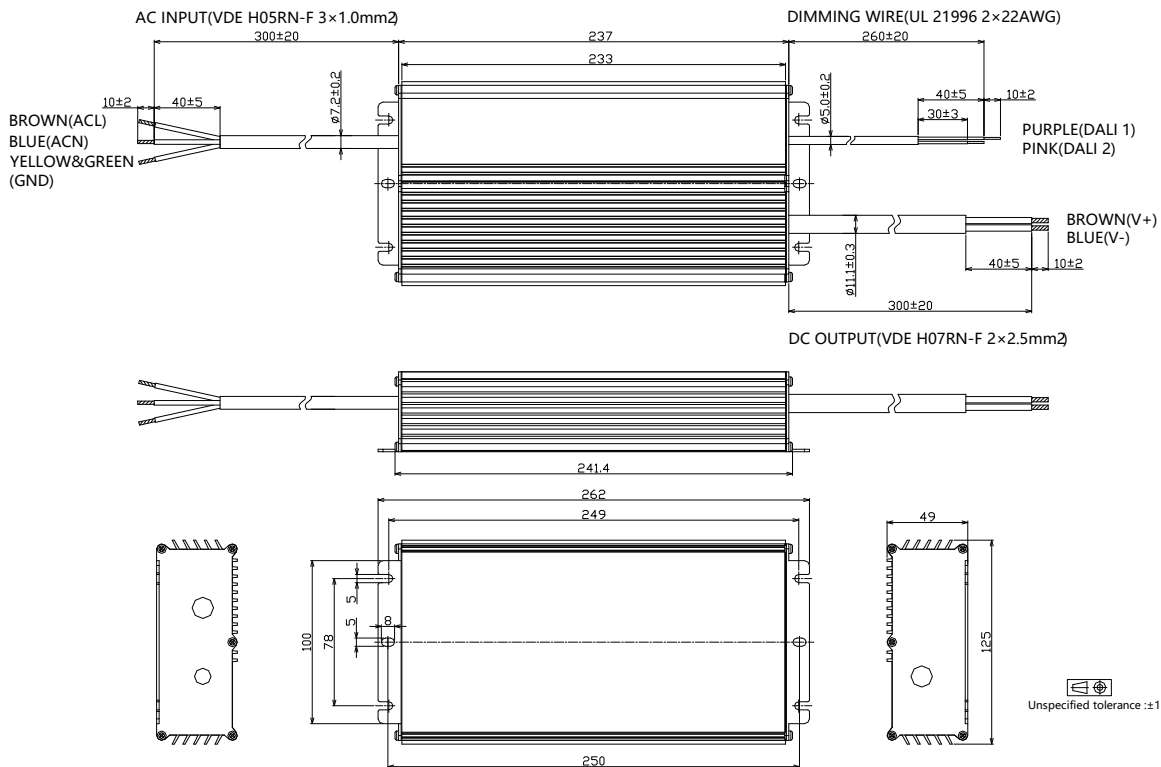
- **BLD-900-Cxxx-DN/DRS** (VDE CABLE, MODELS WITH LESS THAN 60V OUTPUT VOLTAGE)



- BLD-900-Cxxx-EN/ERS (VDE CABLE, MODELS WITH LESS THAN 60V OUTPUT VOLTAGE)

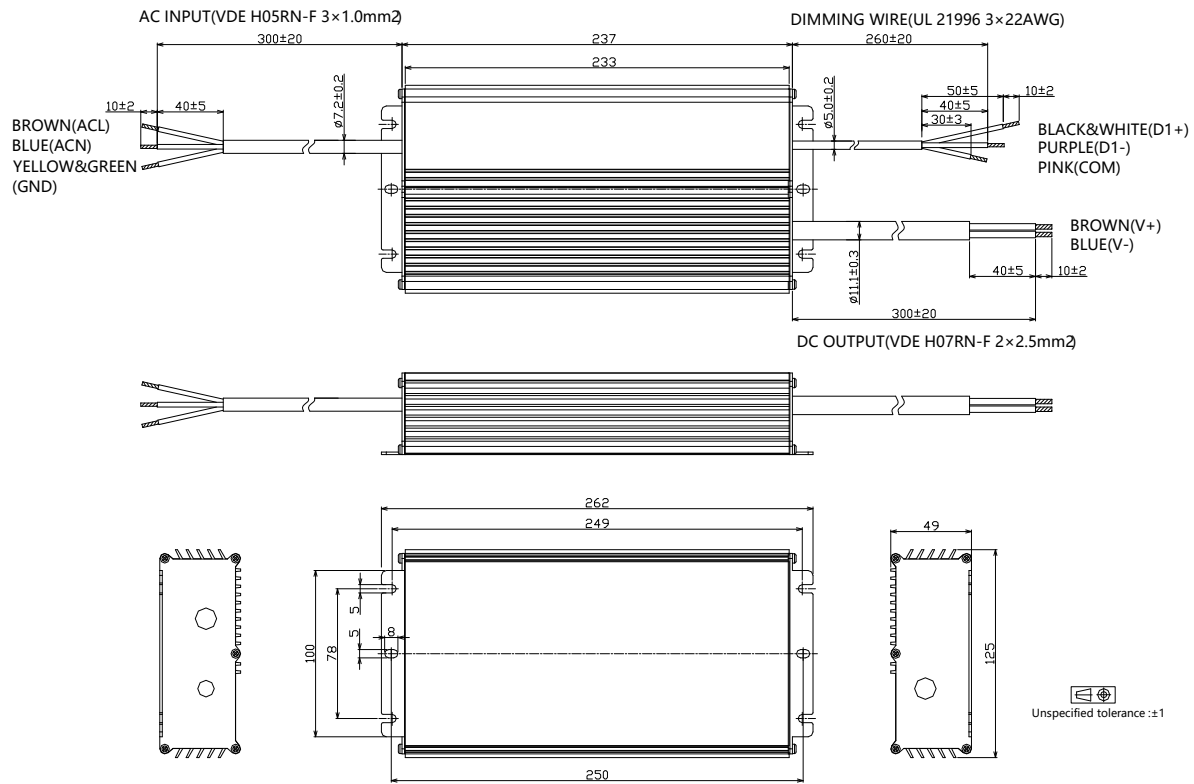


- BLD-900-Cxxx-ARS (VDE CABLE, MODELS WITH LESS THAN 60V OUTPUT VOLTAGE)



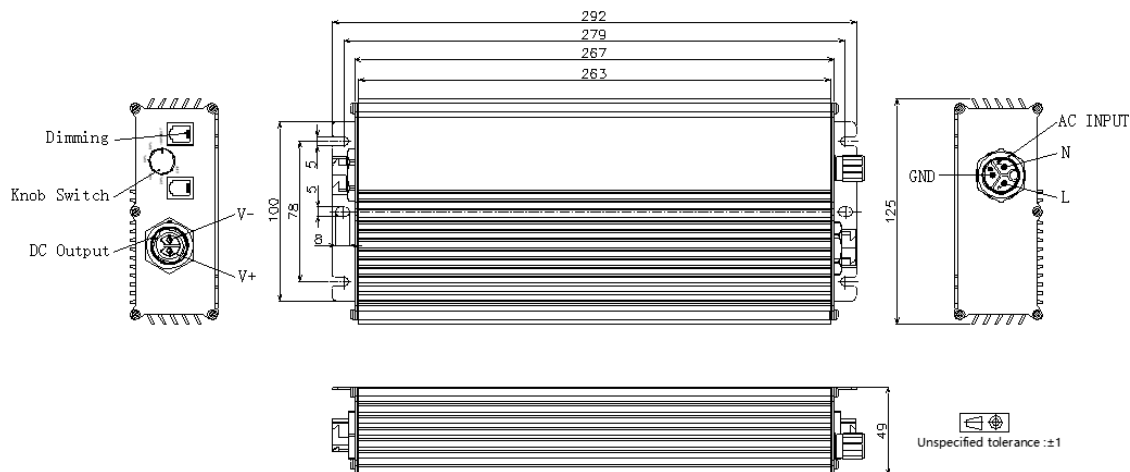
- BLD-900-Cxxx-MRS (VDE CABLE, MODELS WITH LESS THAN 60V OUTPUT VOLTAGE)

900W, 120-277Vac Input, Long Life High Quality Driver



900W, 120-277Vac Input, Long Life High Quality Driver

- Customized Functional End Cap Version

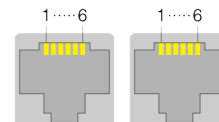


- Add suffix #abcd00 to the end of part number to indicate different configuration. Please refer to product application note AN06 or contact with us for more like **active daisy chain, master mode and button dimming** etc.

Item	Value Definition	Description
Input	a	F: M19 waterproof connector P: C14 plug N: Same cable as standard version
Output	b	F: M19 waterproof connector, 2 pin N: Same cable as standard version
Dimming	c	F: M12 waterproof connector R: RJxx (xx=25,14,12,11) connector x 2 S: 3.5mm multi-media plug N: Same cable as standard version
Knob	d	K: Knob with steps B: Knob without steps N: No knob

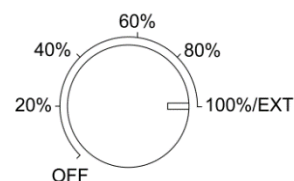
- RJ25 Pin Description (can be customized according to control system)

Pin	Description
1,6	12V Aux-power
2,5	Dim+
3,4	Dim-/RTN



- Knob Description

Position	Description
100%/EXT	If there is no external control, 100% output. If there is external control, output is controlled by external signal.
Off,20%,40%,60%,80%	External signal invalid.



■ 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)
-C18A	18000	900	30	50	1800
	17500	900	31	51	1750
	17000	900	32	53	1700
	16500	900	33	55	1650
	16000	873	33	55	1650
	15500	845	33	55	1650
	15000	818	33	55	1650
	14500	791	33	55	1650
	14000	900	33	55	1650
	13500	868	33	55	1650
	13000	836	33	55	1650
	...	...	...	...	...
	1650	106	33	55	1650

Model	Typical Set Output Current (mA)	Max Output Power (W)	Output Voltage Min (V)	Output Voltage Max(V)	Minimum Dimming Current (mA)
-C860	8600	900	63	105	860
	8500	900	64	106	850
	8400	900	64	107	840
	8200	900	66	110	820
	8000	900	68	113	800
	7800	900	69	115	780
	7600	900	71	118	760
	7400	900	73	122	740
	7200	900	75	125	720
	7000	900	77	129	700
	6800	900	79	132	680
	6600	900	82	136	660
	6400	900	84	141	640
	6200	900	87	145	620
	6000	900	90	150	600
	5800	870	90	150	600
	5600	840	90	150	600
	...	...	...	...	...
	600	90	90	150	600

900W, 120-277Vac Input, Long Life High Quality Driver

Model	Typical Set Output Current (mA)	Max Output Power (W)	Output Voltage Min (V)	Output Voltage Max(V)	Minimum Dimming Current (mA)
-C600	6000	900	90	150	600
	5800	900	93	155	580
	5600	900	96	161	560
	5400	900	100	167	540
	5200	900	104	173	520
	5000	900	108	180	500
	4800	900	113	188	480
	4600	900	117	196	460
	4400	900	123	205	440
	4200	900	129	214	420
	4000	857	129	214	420
	3800	814	129	214	420
	3600	771	129	214	420
	...	...	...	...	...
	420	90	129	214	420

Model	Typical Set Output Current (mA)	Max Output Power (W)	Output Voltage Min (V)	Output Voltage Max(V)	Minimum Dimming Current (mA)
-C420	4200	900	129	214	420
	4100	900	132	220	410
	4000	900	135	225	400
	3900	900	138	231	390
	3800	900	142	237	380
	3700	900	146	243	370
	3600	900	150	250	360
	3500	900	154	257	350
	3400	900	159	265	340
	3300	900	164	273	330
	3200	900	169	281	320
	3100	900	174	290	310
	3000	900	180	300	300
	2900	900	186	310	290
	2800	900	193	321	280
	2700	868	193	321	280
	2600	836	193	321	280
	...	...	...	...	...
	280	90	193	321	280

■ Revision History

Revision	Date	Contents
A	2022-05-28	1. New Release