Product Datasheet

The global certified BLD-600-V series is a dual stage high efficiency smart LED driver. 2% minimum level and high frequency PWM output provides strobe flicker free user experience. 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, DMX and RS485 protocols. All around protections including digital OTP, SCP and OCP with auto-recovery secure 24hour non-stop operation for luminaires.

☑ Strip ☑ Light box ☑ Signage ☑ Bath ☑ Swimming

Features

- Absolute Supply Voltage: 100-305Vac
- Great Surge Immunity 10kV
- 95% Efficiency
- Low Inrush Current
- 4kHz PWM Output Frequency
- 0-10V/PWM/DALI2.0/Push (Switch) /DMX (RDM) Dimmable
- 2% Minimum Dimming Output
- Dim Off with 0.5W Standby
- 100,000Hour Life @ Tc=75℃
- 7 Year Warranty @ Tc<=75℃
- UL Class P, ENEC/CB/RCM SELV Output
- Safety according to UL8750, EN 61347-1, 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-600-V054-NNZ	100-305Vac	600 W	54Vdc	0A	11.1A
BLD-600-V048-NNZ	100-305Vac	600 W	48Vdc	0A	12.5A
BLD-600-V024-NNZ	100-305Vac	600 W	24Vdc	0A	25A

XY=	Dimming Method	Programmable	12Vaux	Dim-off Power
NN	-	-	-	-
DN	0-10V+PWM	-	-	<0.5W
AN	DALI2.0+PUSH	-	-	<0.5W
MR	DMX+RDM	NFC (Set Address)	-	<0.5W

Z=	U	V	S	S#NNNNGL	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	ENEC CB RCM Class I 220-277Vac	Class II 120-277Vac

Note: Dimmable Drivers Do NOT Support Switching DCDC Regulator as Load

■ Technical Data

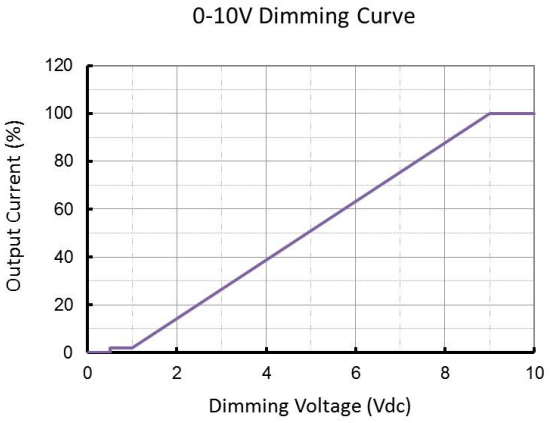
Input Voltage	100-305Vac
Input Frequency	47～63Hz
Power Factor	>0.9@60-100%load, refer to PF vs. Load curve
THD	<15%@60-100%load, refer to THD vs. Load curve
Input Current	2.6Amax@277Vac & Full-Load, 5.8Amax@120Vac & Full-Load
Inrush Current	See Inrush Current Section in the datasheet
Leakage Current	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
Voltage Accuracy	±5%Vo
Voltage Ripple	Vp-p:5%Vo max
Setup Time	1.2s max
Overshoot	10% Io max & LED Load
Output Over Voltage	110% Vomax, typ.
Output Over Current	130% Io, typ.
Short Circuit	Auto recovery. The output recovers when short is removed.
Over Temperature	Lower the output current when Tc≧105±10℃; Auto Recovery When Tc≦70±10℃
Operating Temperature	Case Temperature Tc=-40℃~+90℃； 10%RH～100%RH
Storage Temperature	-40℃～+85℃； 5%RH～100%RH
MTBF	≥280,000 hours, 75℃ case temperature (MIL-HDBK-217F)
Lifetime	≥100,000 hours, 75℃ case temperature, refer to life vs. Tc curve
Case Temperature	90℃ max, marked in the Tc 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

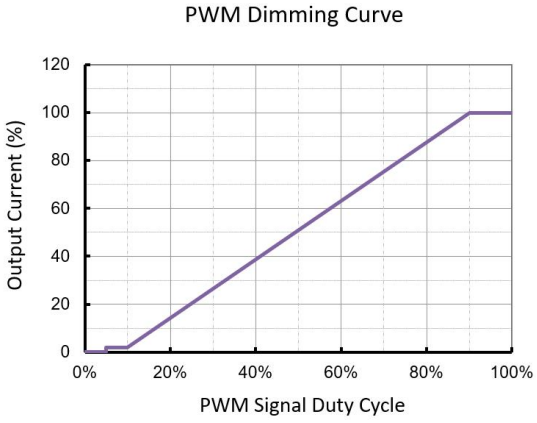
Notes: Unless specified, all the test results are measured in 25℃ room temperature.

■ Dimming

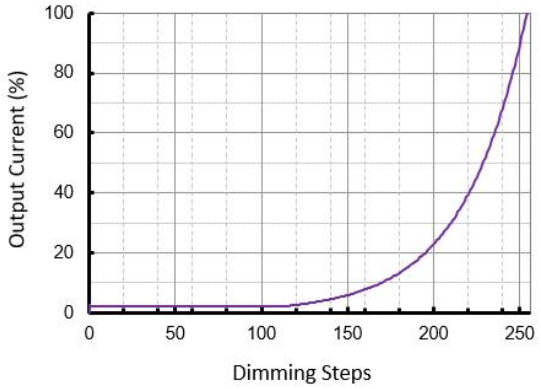
Parameter	Min.	Typ.	Max.
Vdim Sourcing Current	100uA	150uA	200uA
Vdim Allowed Input Voltage	-20 V		20 V
0-10V Dimming Range	2% (Vdim=1V)	Linear	100% (Vdim=9-10V)
PWM Dimming Range	2% (Duty=10%)	Linear	100% (Duty=90-100%)
Dim off threshold	0.4V or 4%	0.5V or 5%	0.6V or 6%
Dim on threshold	0.6V or 6%	0.7V or 7%	0.8V or 8%
PWM High	9.5V	10V	10.5V
PWM Low	0V		0.6V
PWM Frequency	1kHz		2kHz
External PWM Controller Current Sinking Capability	300uA		
DALI Interface Standard	IEC62386, part 101,102,207		
DALI Dimming Range	2%		100%
DA1,DA2 High Level	9.5	16	22.5
DA1,DA2 Low Level	-6.5	0	6.5
DA1,DA2 Current	0		2mA
DMX Dimming Range	2%		100%
DMX+ & DMX- Voltage	-6V		6V
DMX to Ground Resistance	25Mohm		
Logic 0/1 (DMX+ to DMX-) Threshold		0.2V	
Communication Baud Rate		250kbps	

- **Default Dimming Curves**

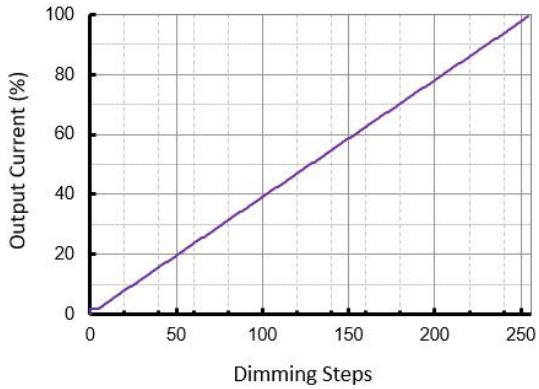




DALI Dimming Curve

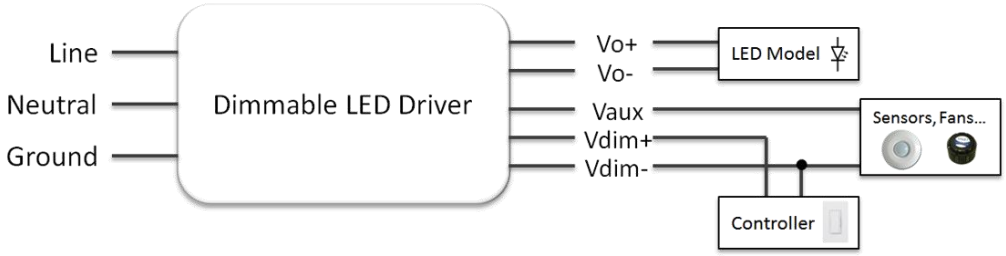


DMX/RDM Dimming Curve



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

- Dimming Wiring

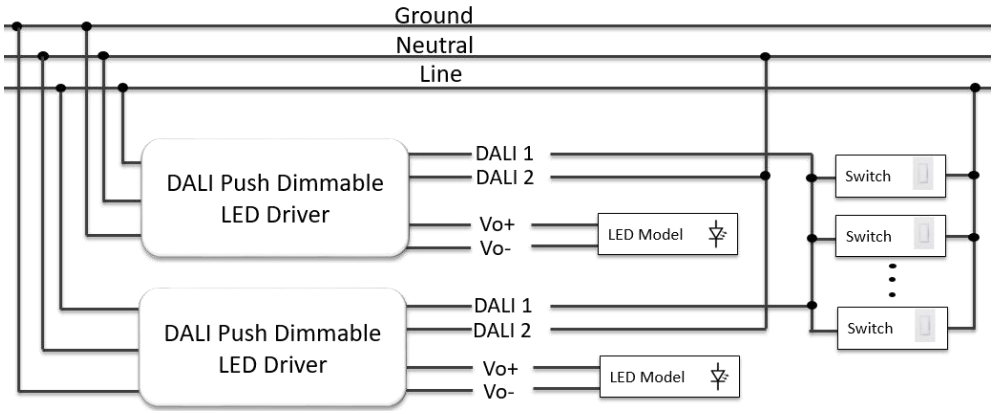


- Push (Switch) Dim

A short press (50-600 ms) switches the device on or off

A long press (> 600 ms) fades the connected operating device alternately up and down (between 2 and 100%). Up and down slew rate is 20%Io/second.

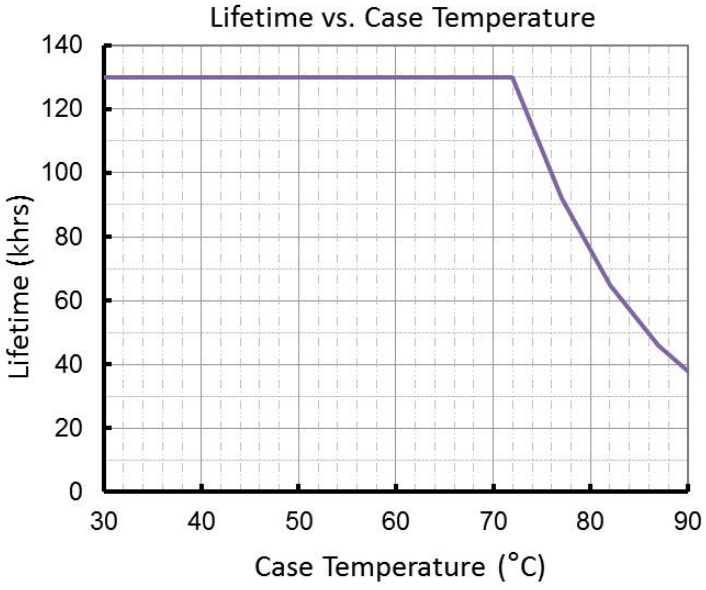
Long push for 15s to synchronize.



■ Safety/EMC Compliance

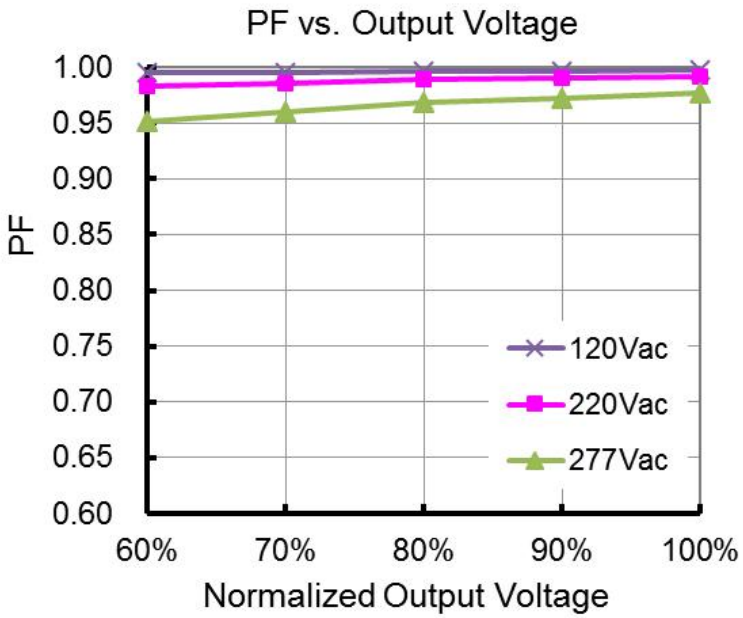
Safety Standards	Description
UL8750	Light emitting diode(LED) equipment for use in lighting products
UL1012	Power units other than class 2
IEC 61347-1	Lamp control gear Part 1: general and safety requirements
IEC 61347-2-13	Lamp control gear Part 2-13: particular requirement for d.c. or a.c. supplied electronic control gear for LED modules
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

■ Lifetime vs. Case Temperature

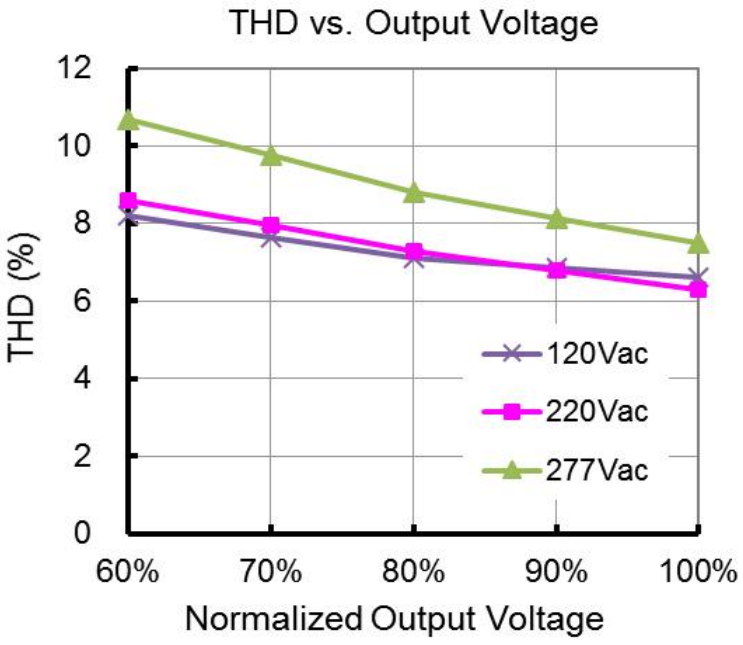


(End of Life: Maximum Failure Rate=10%)

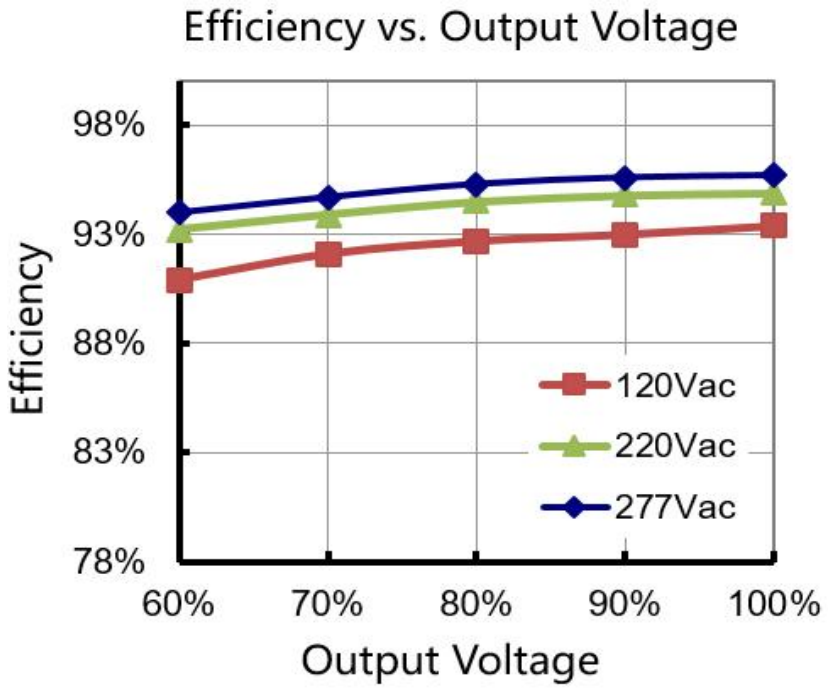
■ Power Factor vs. Load



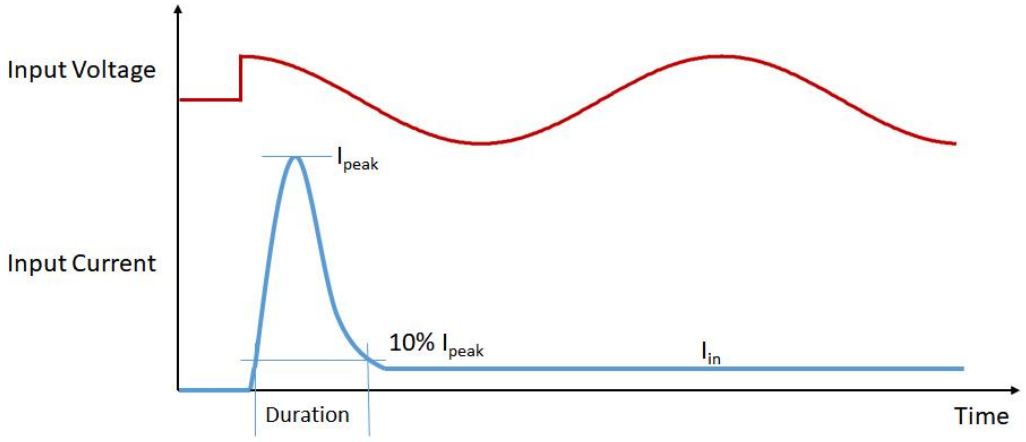
■ THD vs. Load



■ Efficiency vs. Load (54V Model)



■ Inrush Current



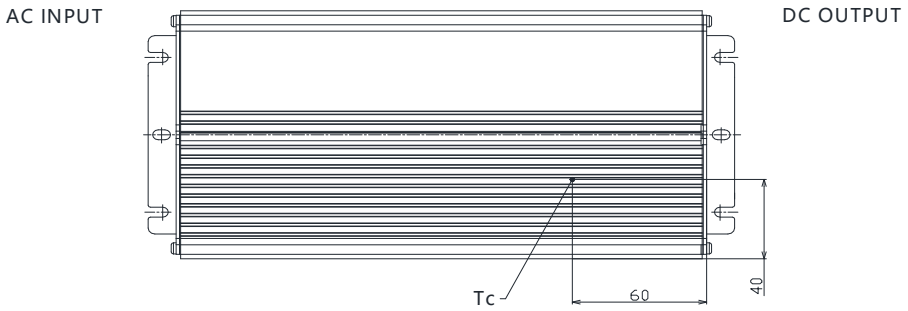
Input Voltage	I_{peak}	Duration
120Vac	3A	60mS
220Vac	5A	70mS
277Vac	8A	70mS

Please contact with us for MCB calculation and waveforms.

■ Dielectric Strength

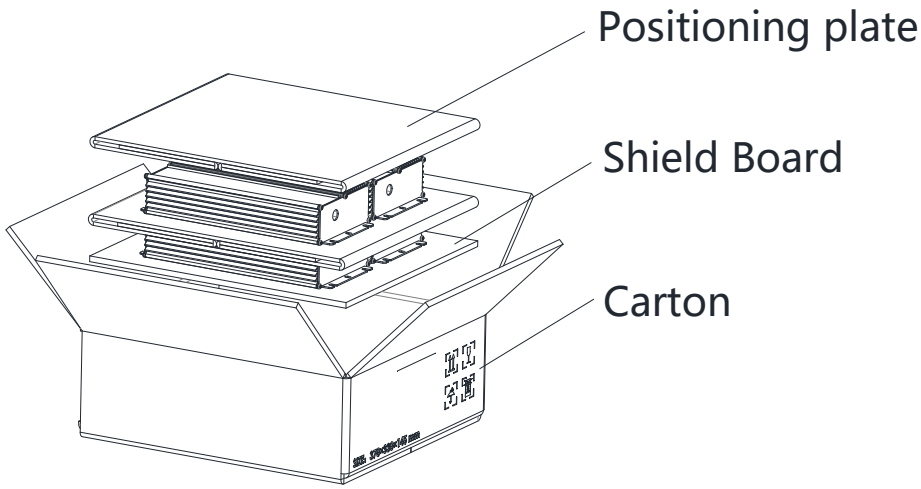
Unit: Vac	Input	Output	Dimming	Case
Input	-	3750	3750	1554
Output	3750	-	-	1554
Dimming	3750	-	-	1554
Case	1554	1554	1554	-

■ Tc Point



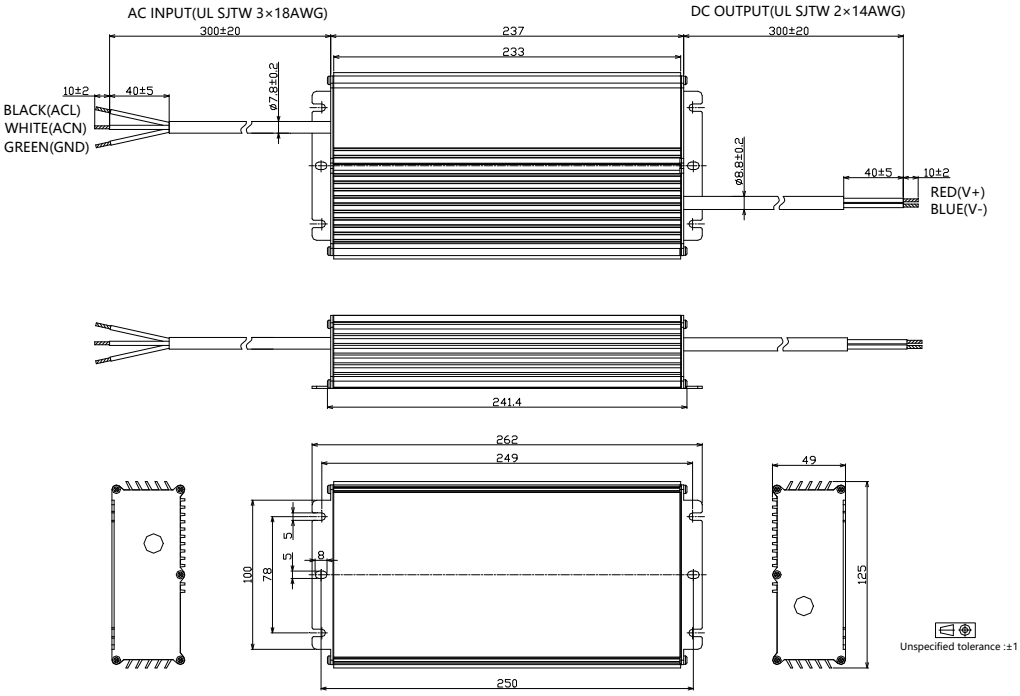
■ Packaging Information

Typical Carton Dimension(L×W×H)	370×330×145 mm
Positioning plate	2pcs/carton
Shield Board	1pcs/carton
LED Drivers/LED	4pcs/carton
Net Weight	10.4kg/carton
Gross Weight	11.0 kg/carton

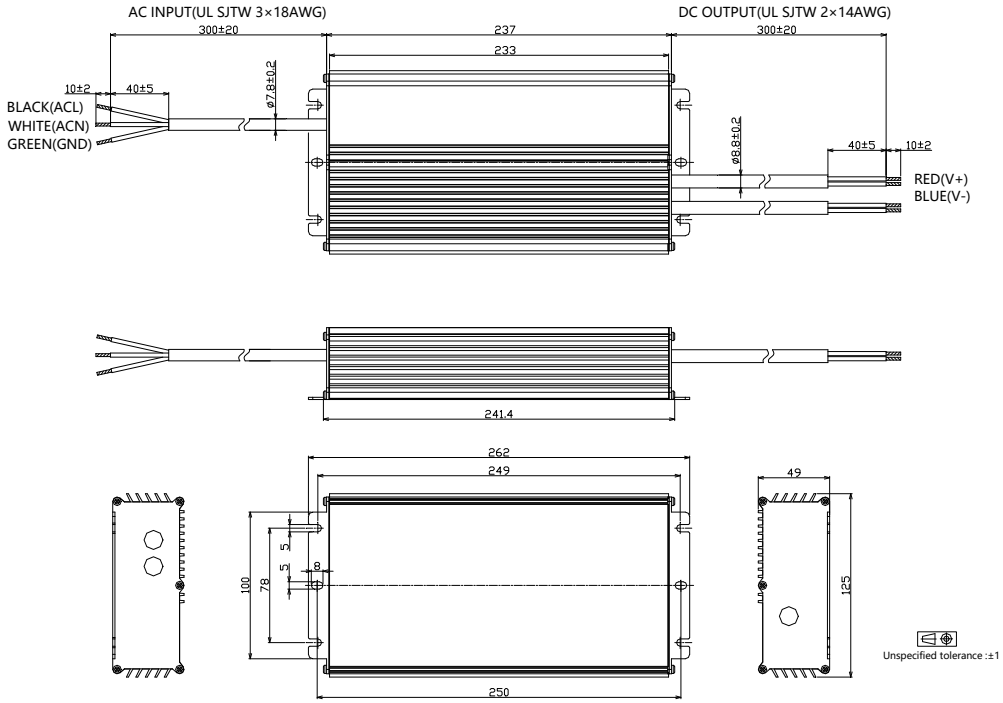


■ Mechanical Design

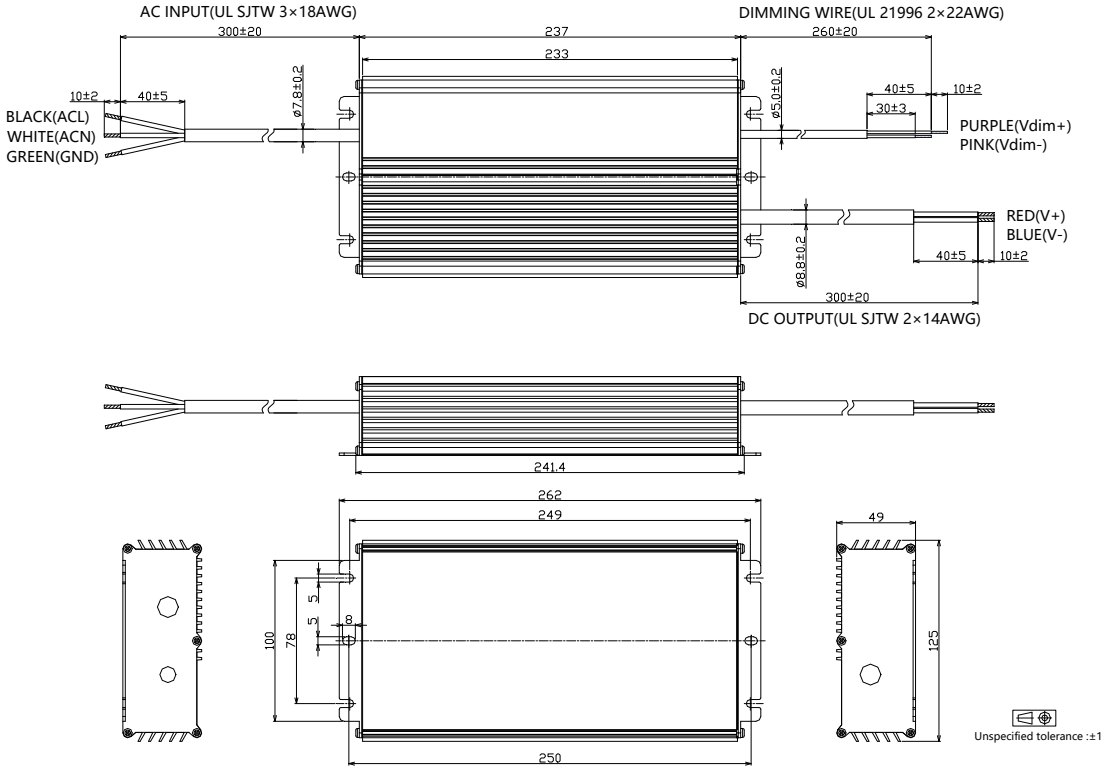
- BLD-600-Vxxx-NNU (48V, 54V Output Models)



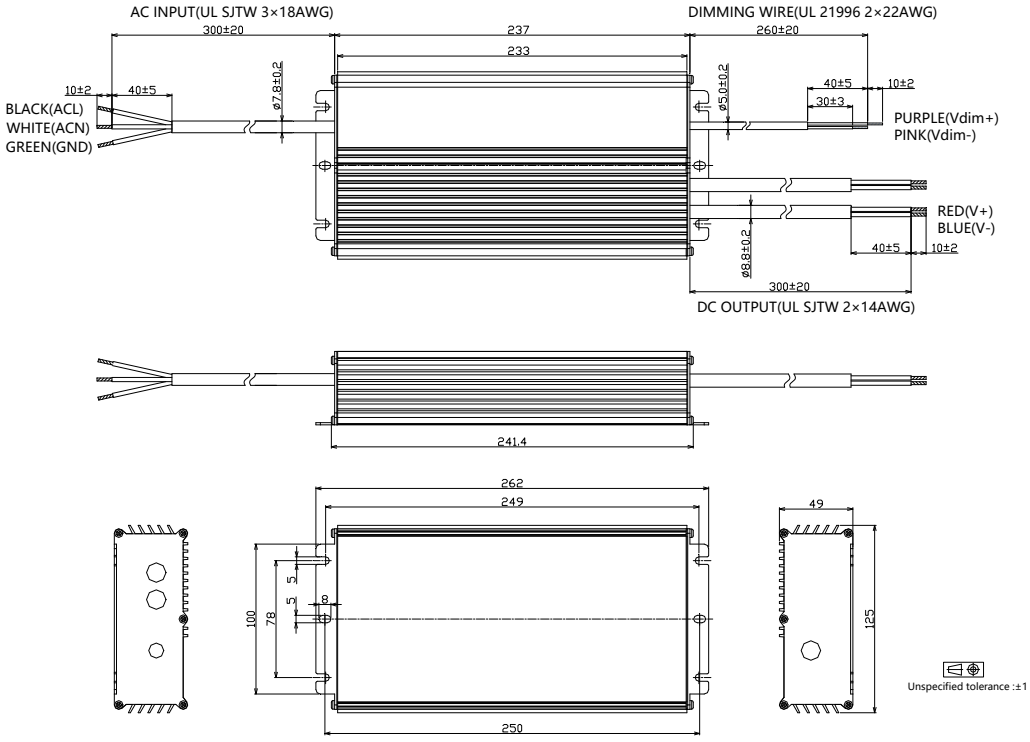
- BLD-600-Vxxx-NNU (24V Output Models)



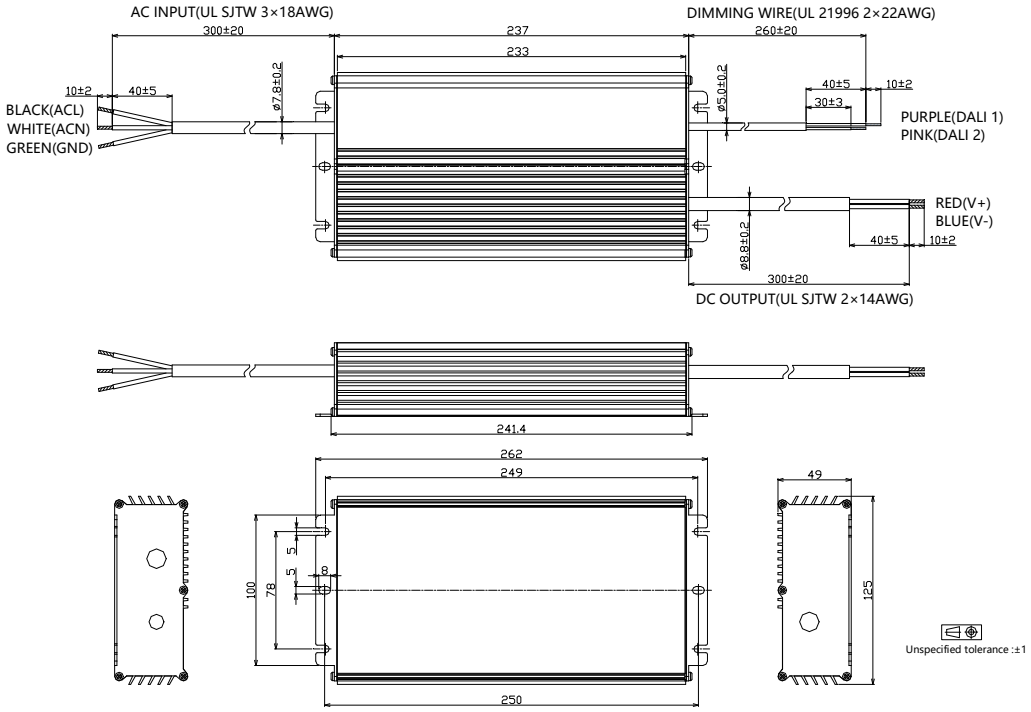
- BLD-600-Vxxx-DNU (48V, 54V Output Models)



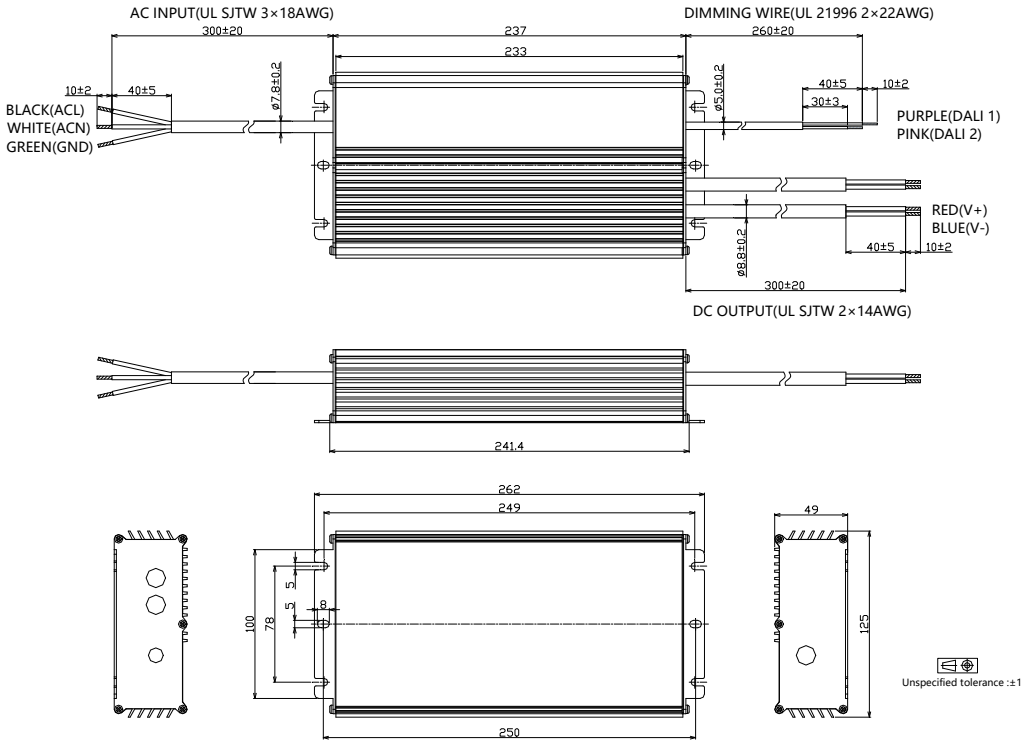
- BLD-600-Vxxx-DNU (24V Output Models)



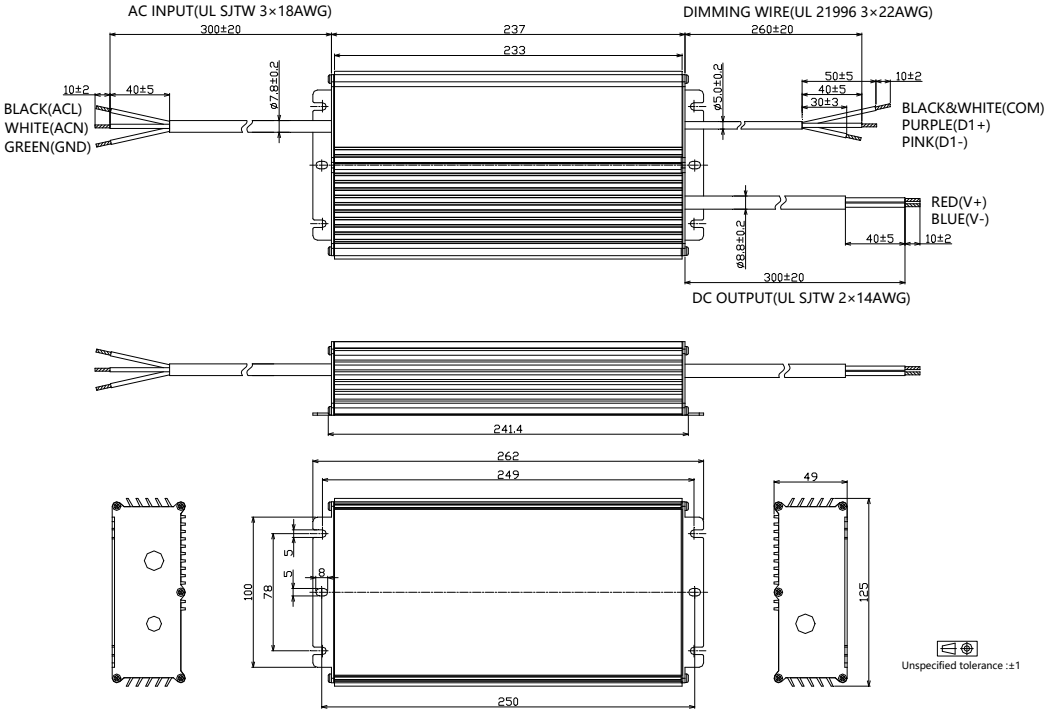
- BLD-600-Vxxx-ANU (48V, 54V Output Models)



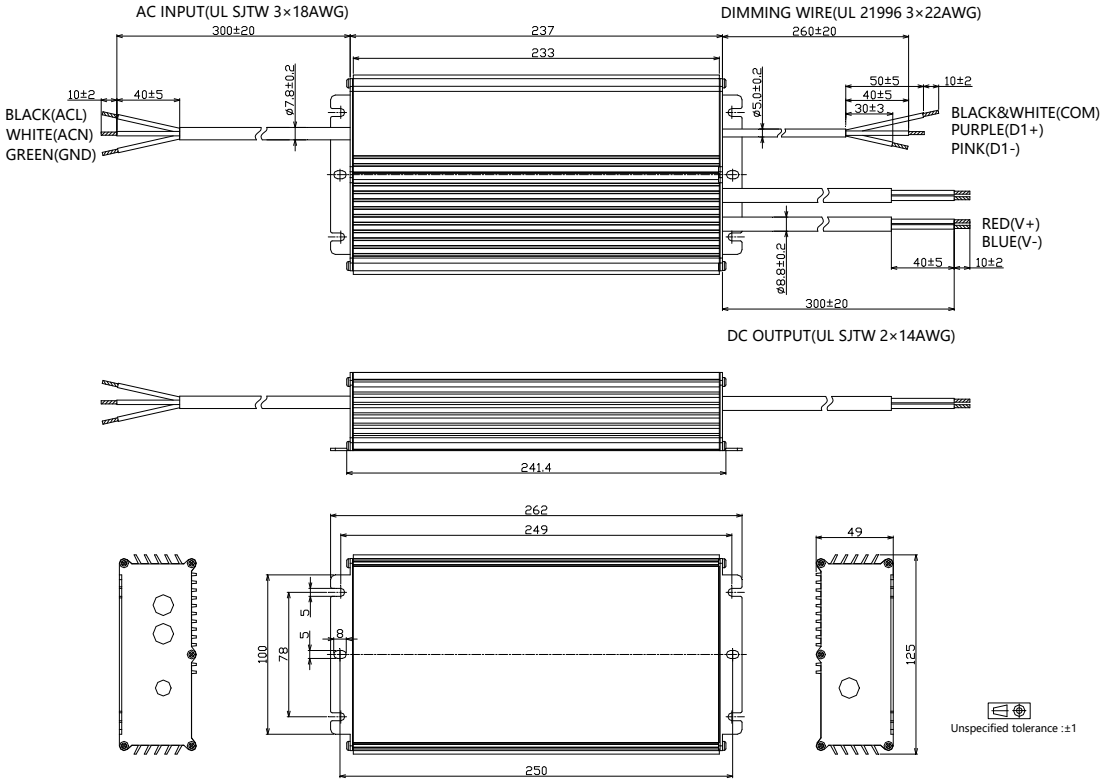
- BLD-600-Vxxx-ANU (24V Output Models)



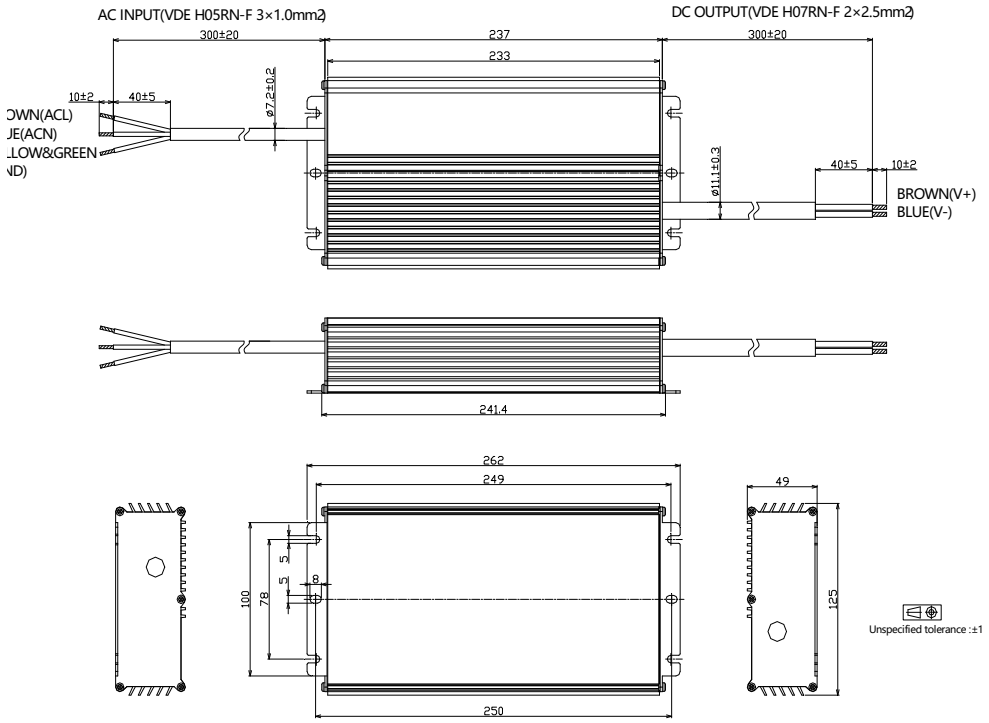
- BLD-600-Vxxx-MRU (48V, 54V Output Models)



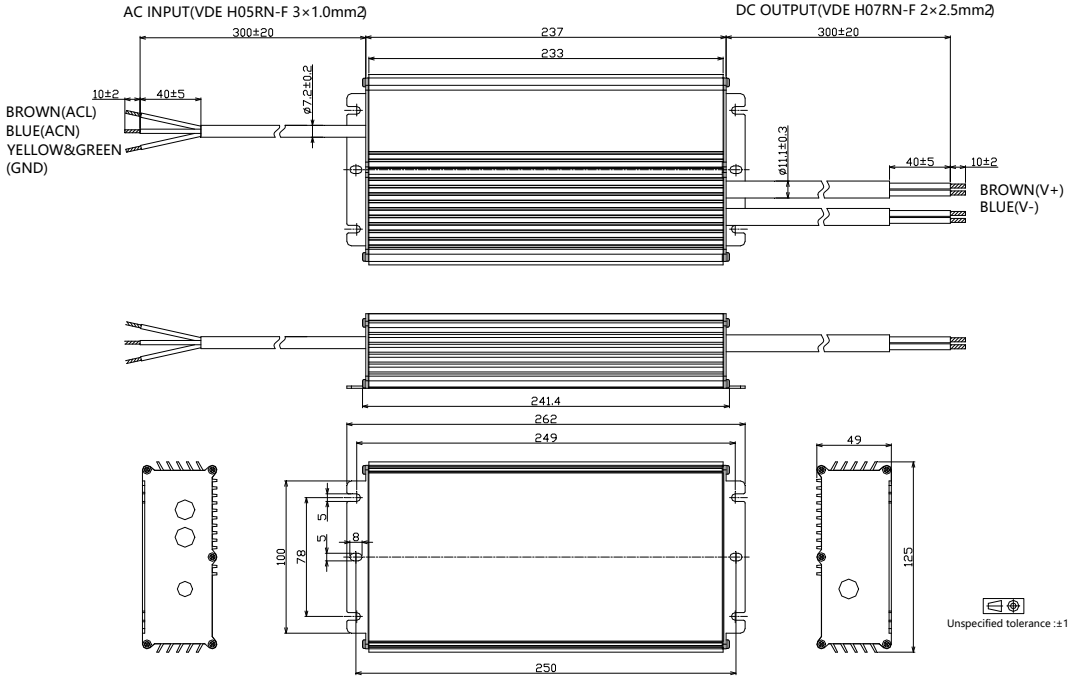
- BLD-600-Vxxx-MRU (24V Output Models)



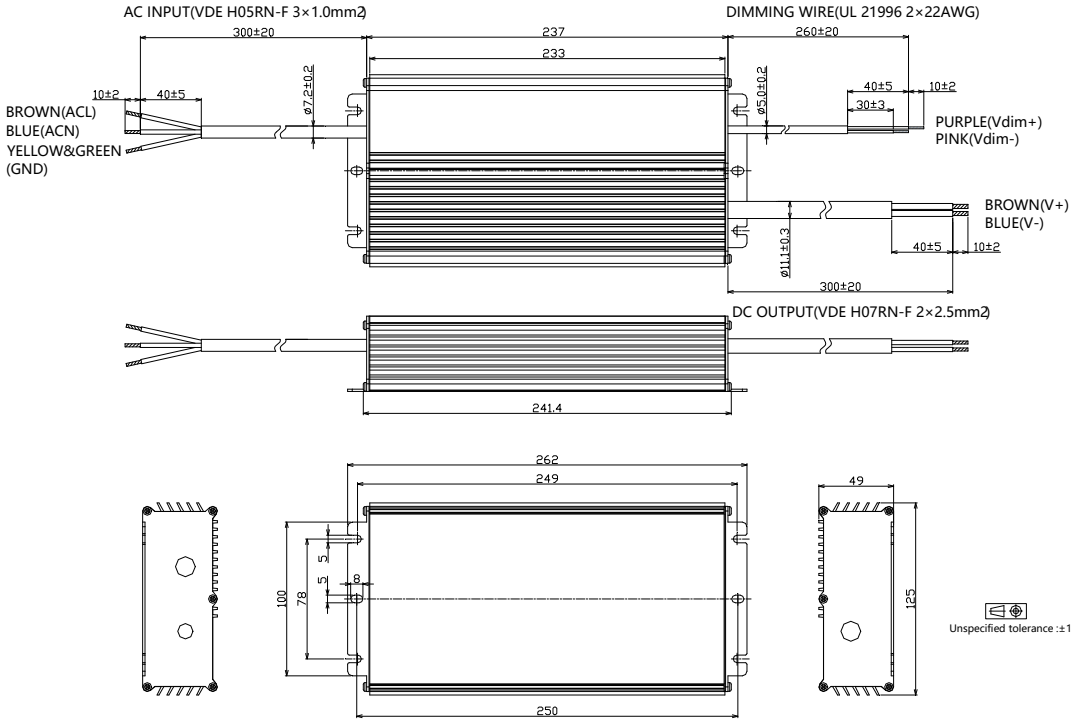
- BLD-600-Vxxx -NNS(48V, 54V Output Models)



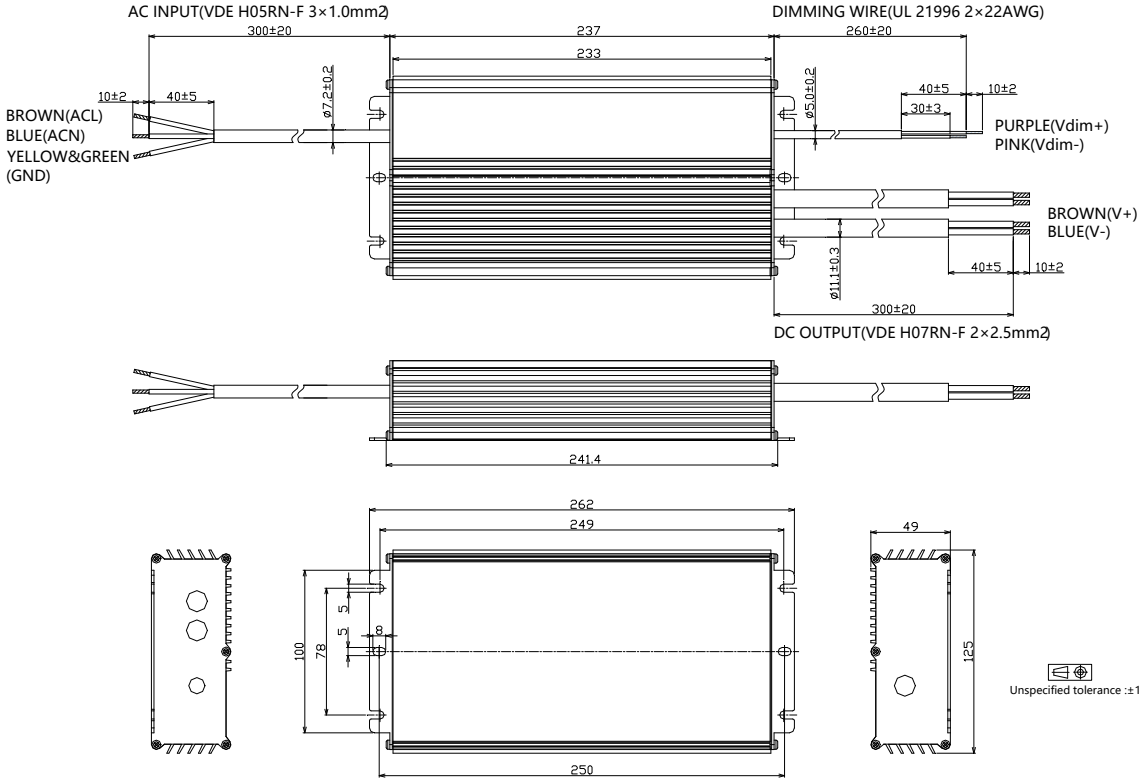
- BLD-600-Vxxx-NNS (24V Output Models)



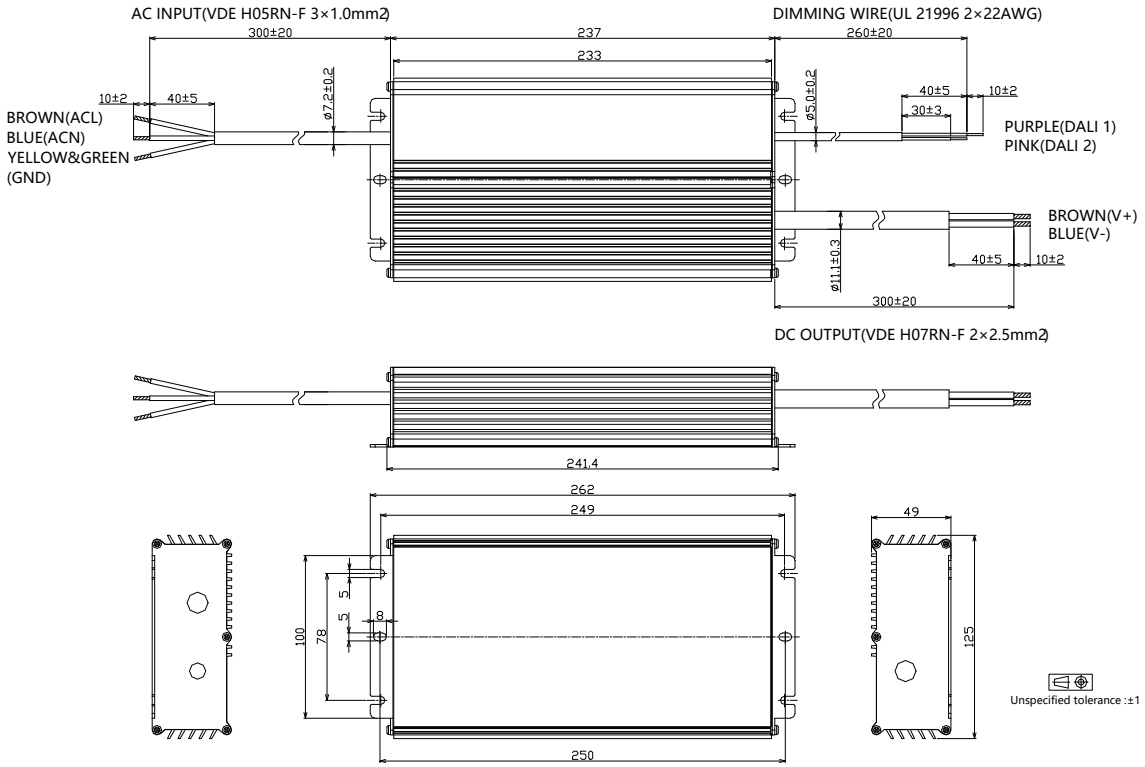
- BLD-600-Vxxx -DNS(48V, 54V Output Models)



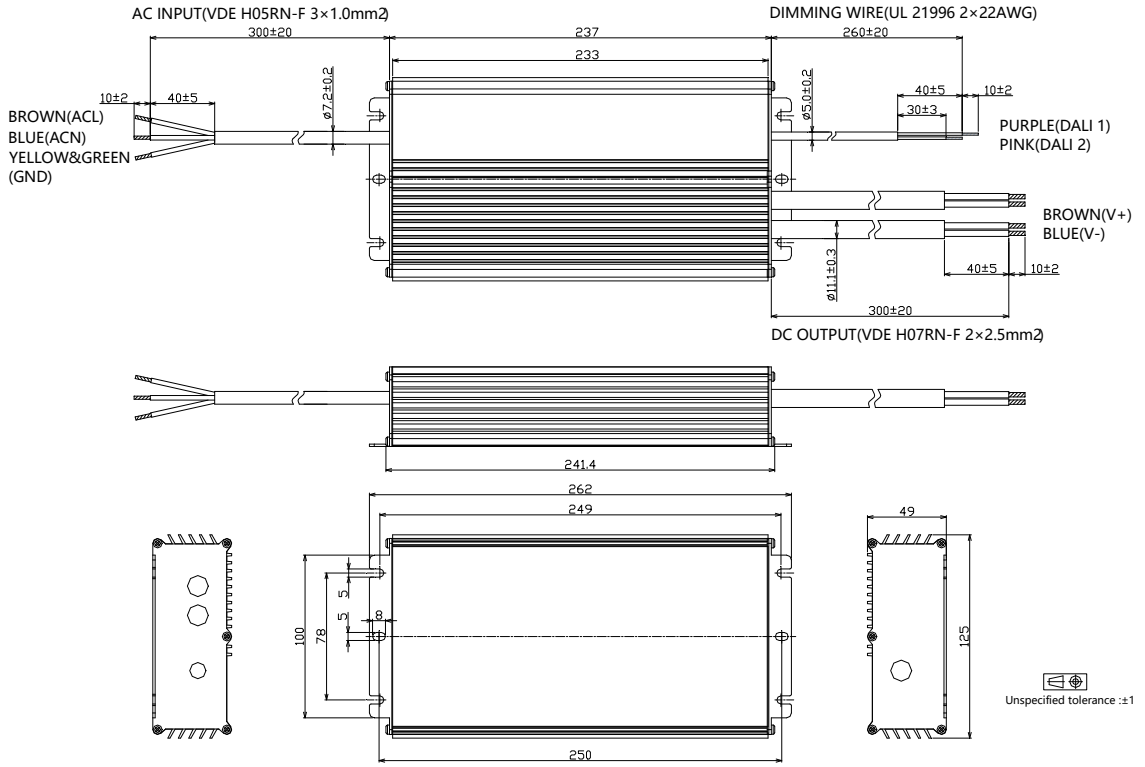
- BLD-600-Vxxx -DNS(24V Output Models)



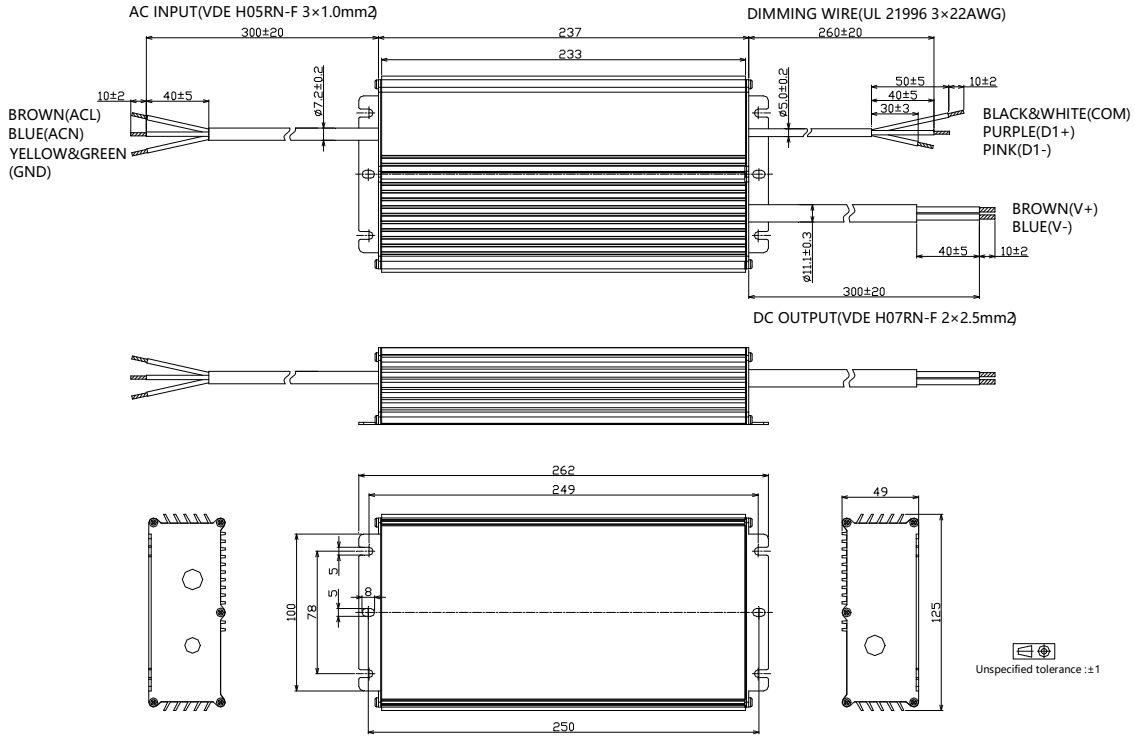
- BLD-600-Vxxx -ANS(48V, 54V Output Models)



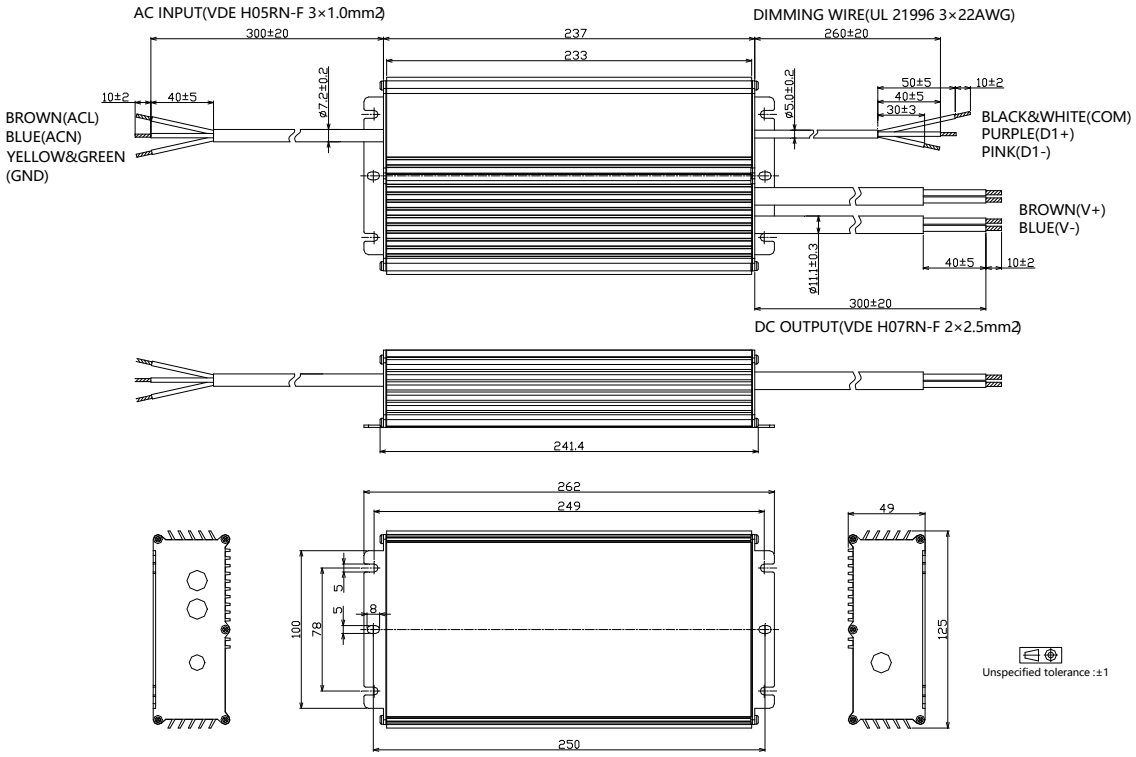
- BLD-600-Vxxx -ANS(24V Output Models)



- BLD-600-Vxxx -MRS(48V, 54V Output Models)



- BLD-600-Vxxx -MNS(24V Output Models)



■ Revision History

Revision	Date	Contents
B	2022-3-22	1. Index page added 2. Inrush current data added 3. Tc point position indication added 4. Dielectric strength level added 5. Packaging information added 6. Mechanical design change with dimming cable color 7. Revision history added
C	2023-7-14	1. Update cable selection table in Model List Section
D	2024-1-23	1. Dimmable models added
E	2024-4-11	1. Push and PWM dimming description updated.