Product Datasheet



The global certified BLD-240-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 dimming control, but also DALI2.0 and other 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 2
- Model List 2
- Technical Data 3
- Dimming 4
- Safety/EMC Compliance 6
- Lifetime vs. Case Temperature 6
- Power Factor vs. Load 7
- THD vs. Load 7
- Efficiency vs. Load 8
- Inrush Current 9
- Dielectric Strength 10
- Tc Point 10
- Packaging Information 10
- Mechanical Design 11
- Revision History 19

Features

- Supply Voltage: 108-305Vac, 380Vac for 2 hours
- Great Surge Immunity 10kV
- 4kHz PWM Output Frequency
- 100,000Hour Life @ Tc=75℃
- 7 Year Warranty @ Tc<=75℃
- 0-10V/PWM/DALI2.0/Push (Switch) /DMX (RDM) Dimmable
- 2% Minimum Dimming Output
- 12V 300mA Auxiliary Power to Power Controllers and Fans (Optional)
- -60℃ Ambient Operation (Optional)
- Class II Model Available
- UL Class P, ENEC/CB/CCC SELV Output
- Safety according to UL8750, EN 61347-1, 61347-2-13, 62384

Model List

Model Number	Input Voltage Range	Output Power	Output Voltage	Output Current Min	Output Current Max
BLD-240-V012-XYZ	108 ~ 305 Vac	240 W	12V	0	20A
BLD-240-V024-XYZ	108 ~ 305 Vac	240 W	24V	0	10A
BLD-240-V048-XYZ	108~ 305 Vac	240 W	48V	0	5A

XY=	Dimming Method	Programmable	12Vaux	Dim-off Power
NN	-	-	-	-
DN	0-10V+PWM	-	-	<1.5W
AN	DALI2.0+PUSH	-	-	<1.5W
MR	DMX+RDM	NFC (Set Address)	-	<1.5W

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 without 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

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

■ Technical Data

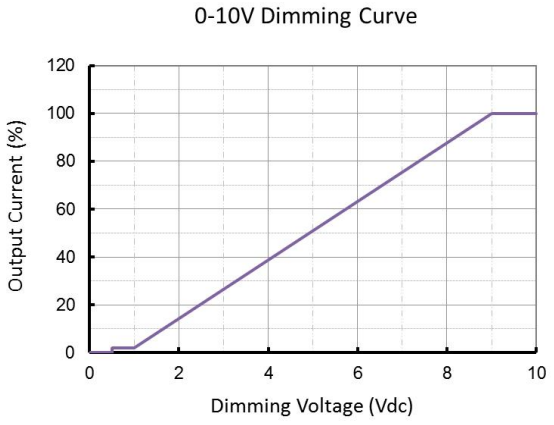
Input Voltage	108～305Vac, 380Vac for 2 hours
Input Frequency	47～63Hz
Power Factor	>0.9@60-100%load, refer to PF vs. Load curve
THD	<15%@60-100%load, refer to THD vs. Load curve
Input Current	2.2Amax@120Vac & Full-Load, 1.1Amax@220Vac & Full-Load
Inrush Current	See Inrush Current Section in the datasheet
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
Voltage Accuracy	±3%Vo
Voltage Ripple	Vp-p:5%Vo max
Setup Time	1.2s max.
Output Overshoot	10% Vo, max.
Output Over Current	120% Io, typ.
Short Circuit	Auto recovery. The output recovers when short is removed.
Over Temperature	Turn off the output 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
Dimension	6.38x2.67x1.51 by inch (body), 7.40x2.67x1.51 by inch (endcaps included)
	162.0x68.0x38.5 by mm (body), 188.0x68.0x38.5 by mm (endcaps included)
Net Weight	830g
Packing	See Package Information Section in the datasheet

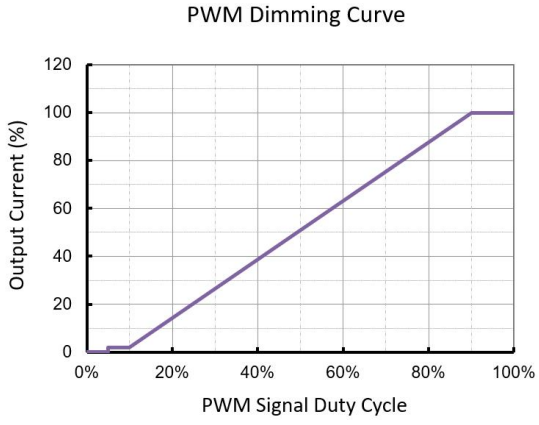
Notes: Unless specified, all the test results are measured in 25℃ room temperature.

■ Dimming

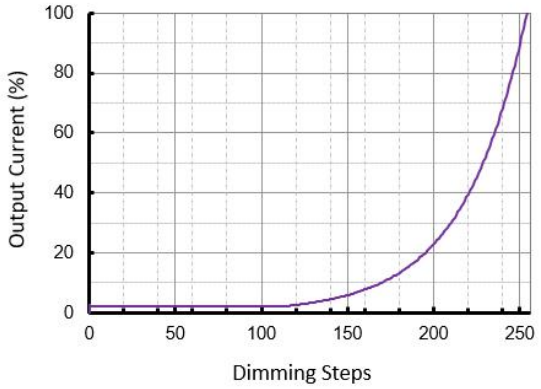
Parameter	Min.	Typ.	Max.
Vdim Sourcing Current	100uA	150uA	200uA
Vdim Allowed Input Voltage	-20 V		20 V
0-10V Dimming Range	2% (Vdim=1V)	Linear	100% (Vdim=9~10V)
PWM Dimming Range	2% (Duty=10%)	Linear	100% (Duty=90-100%)
Dim off threshold	0.4V or 4%	0.5V or 5%	0.6V or 6%
Dim on threshold	0.6V or 6%	0.7V 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		
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	

- **Default Dimming Curves**

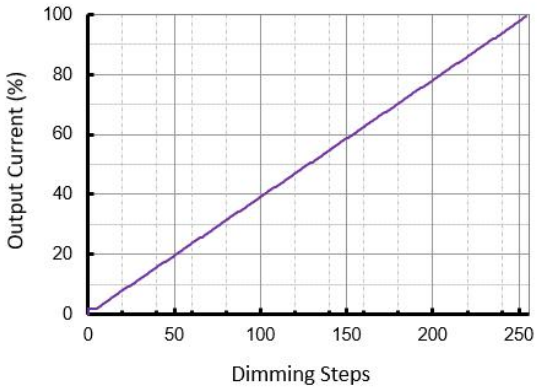




DALI Dimming Curve

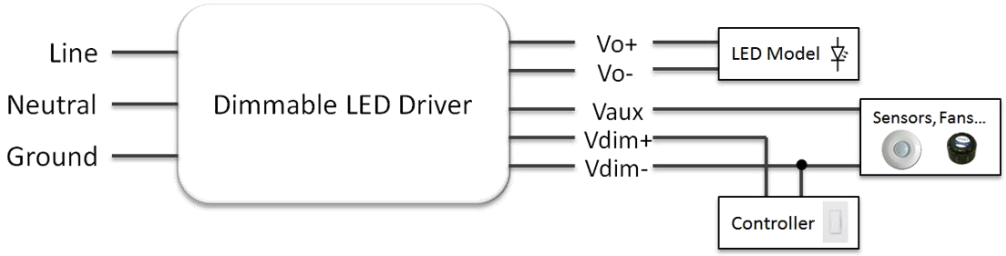


DMX/RDM Dimming Curve



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

- Dimming Wiring

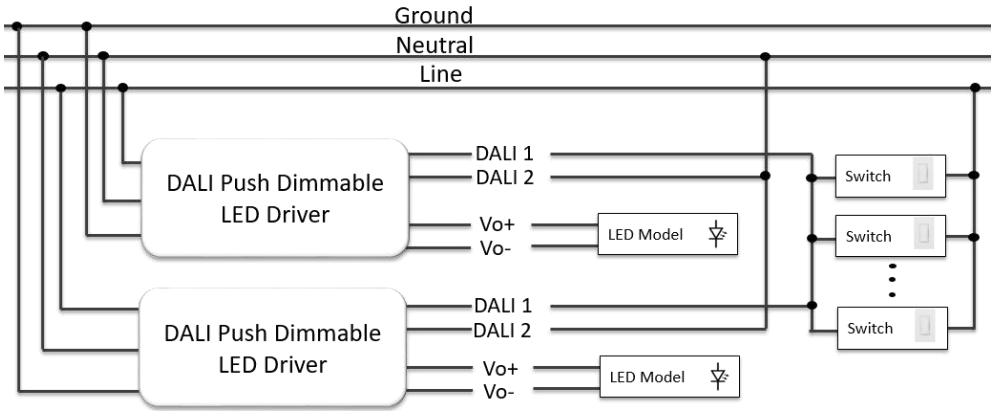


- Push (Switch) Dim

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.

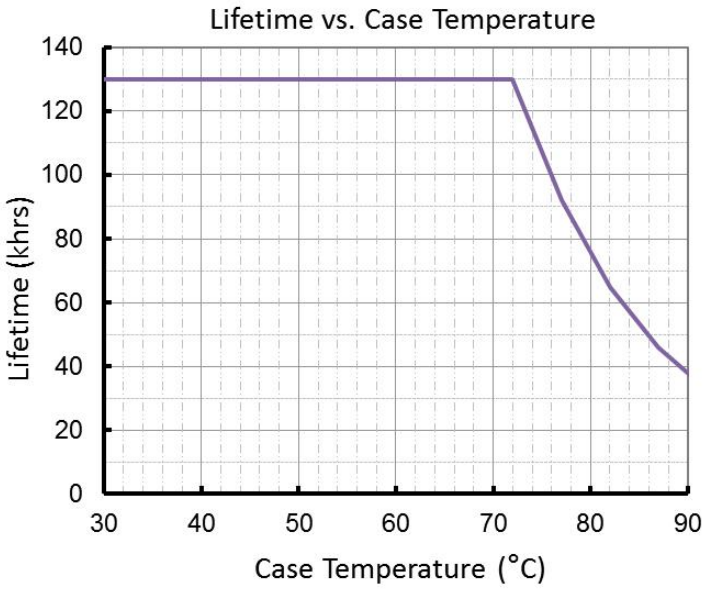
Long push for 15s to synchronize.



Safety/EMC Compliance

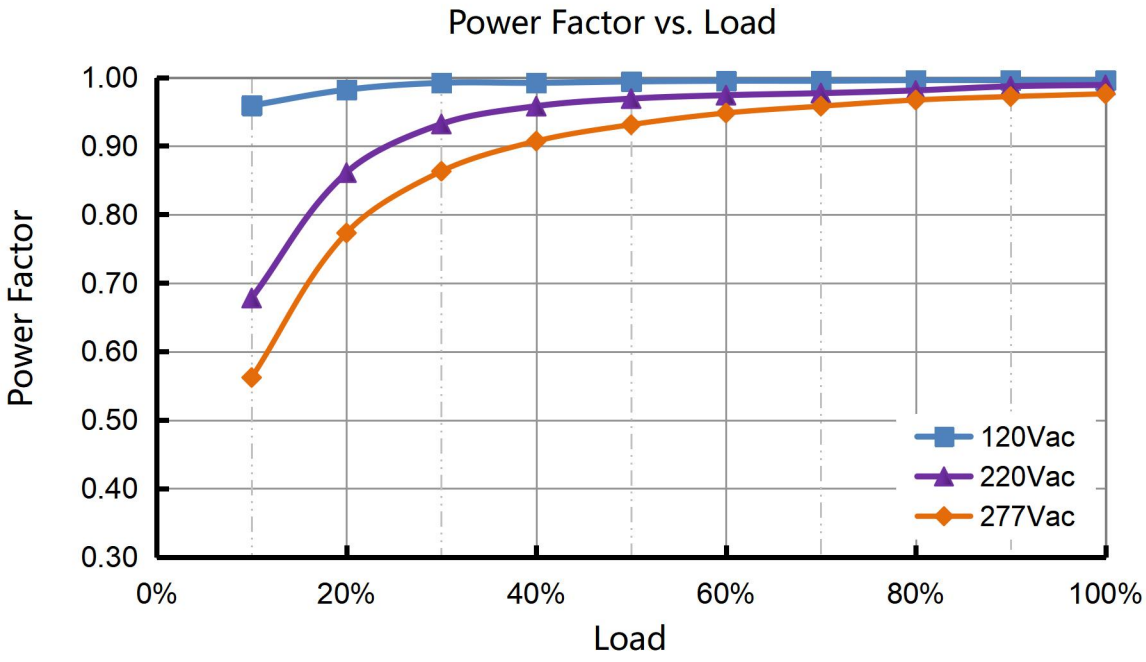
Safety Standards	Description
UL8750	Light emitting diode(LED) equipment for use in lighting products
UL1012	Power units other than class 2
IEC 61347-1	Lamp control gear Part 1: general and safety requirements
IEC 61347-2-13	Lamp control gear Part 2-13: particular requirement for d.c. or a.c. supplied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

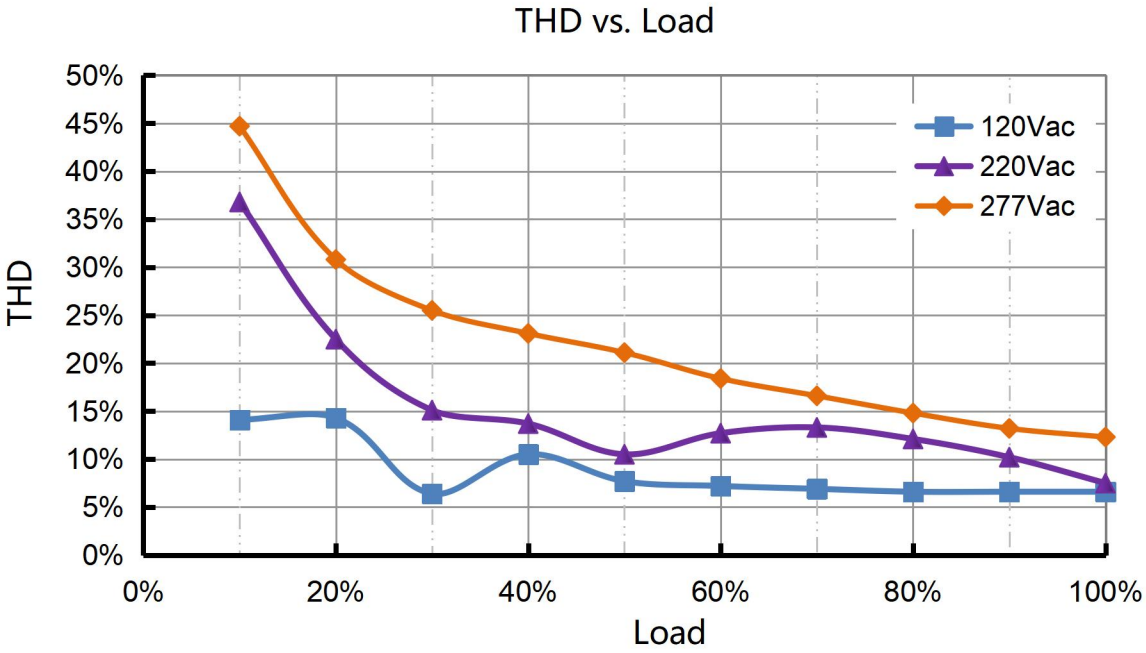


(End of Life: Maximum Failure Rate=10%)

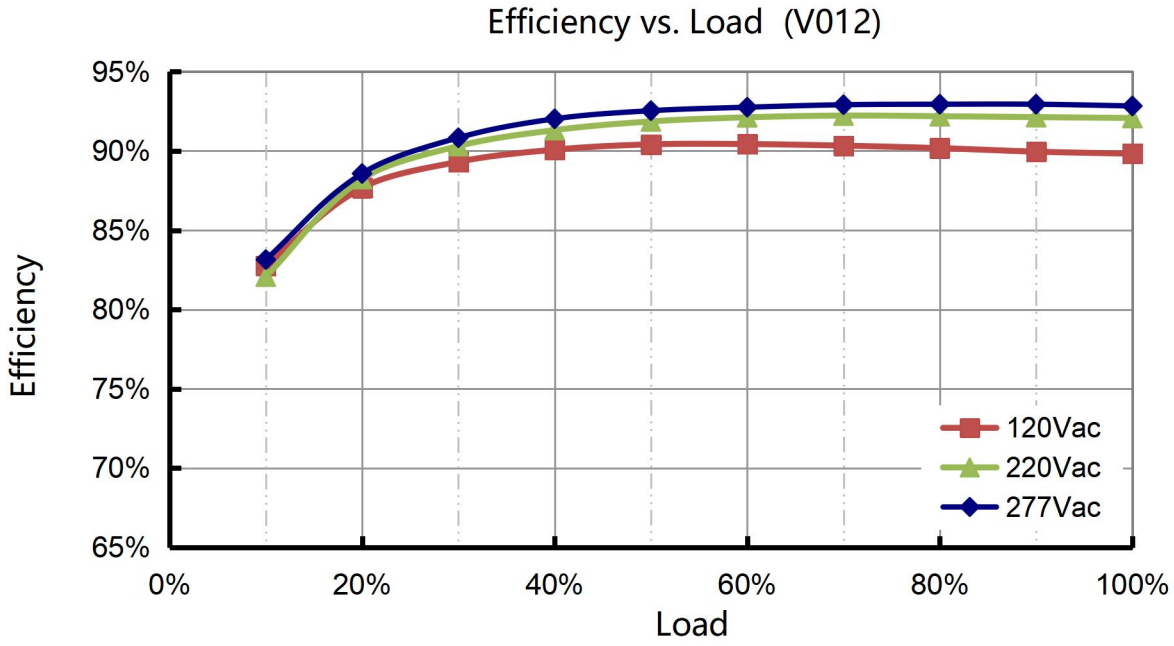
■ Power Factor vs. Load

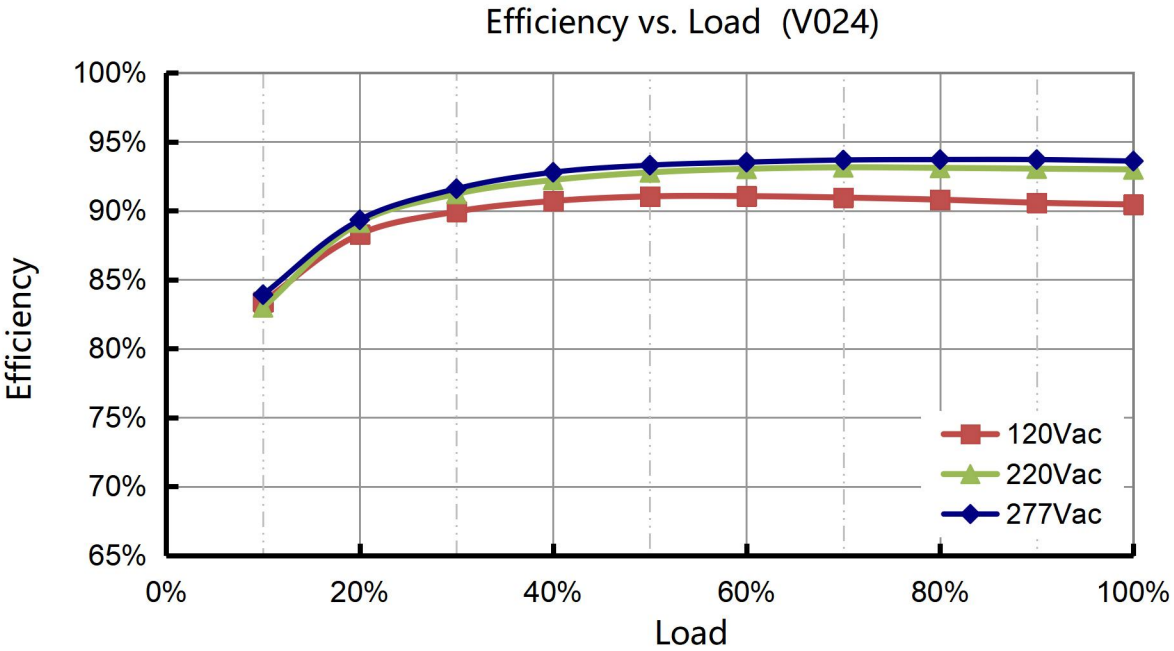


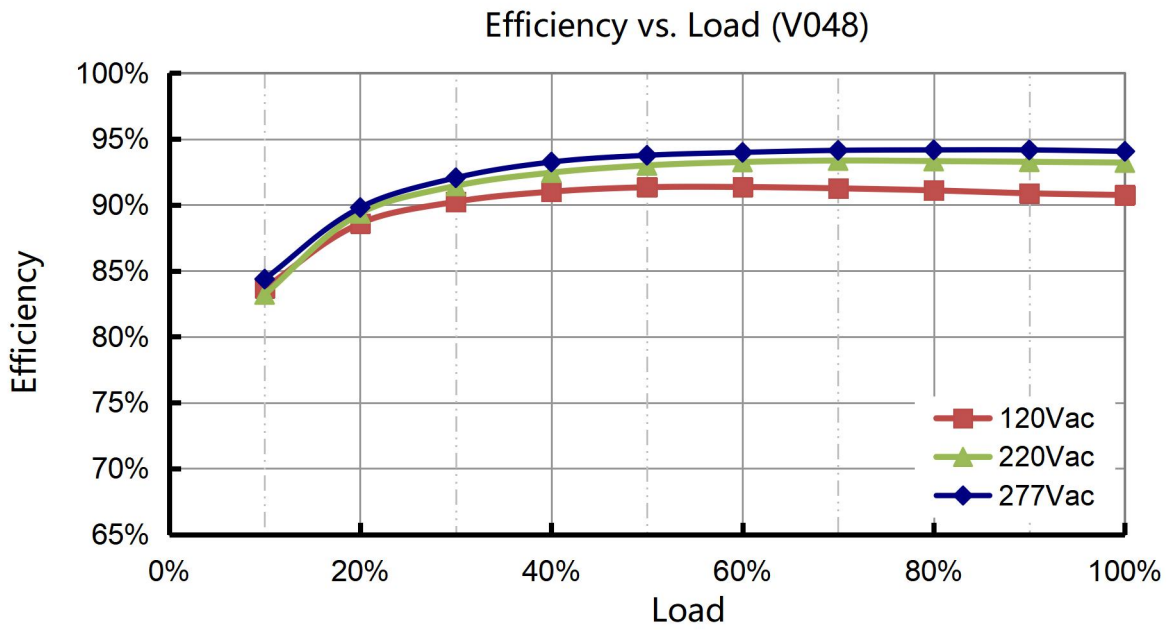
■ THD vs. Load



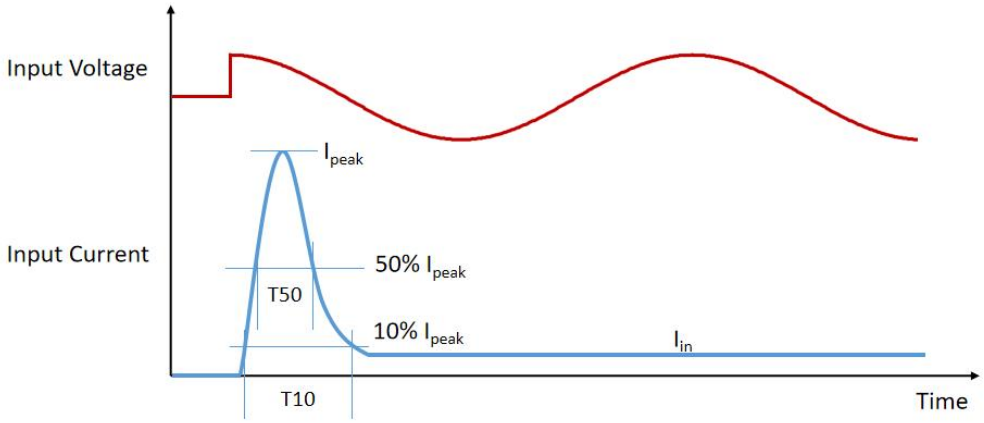
■ Efficiency vs. Load







■ Inrush Current



Input Voltage	I_{peak}	10% -10% T10 Duration	50% -50% T50 Duration
120Vac	33.4A	920μs	410μs
220Vac	66.0A	760μs	300μs
277Vac	80.8A	700μs	276μs

- MCB Suggestion

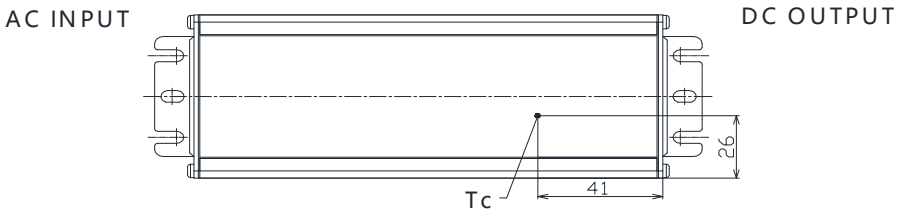
Type	B10	B16	B25	B32	C10	C16	C25	C32	D10	D16	D25	D32
Driver Quantity	4	6	10	13	5	9	14	18	6	10	16	21

Note: Calculated with MCB S200 series manufactured by ABB at 230Vac Input condition

■ Dielectric Strength

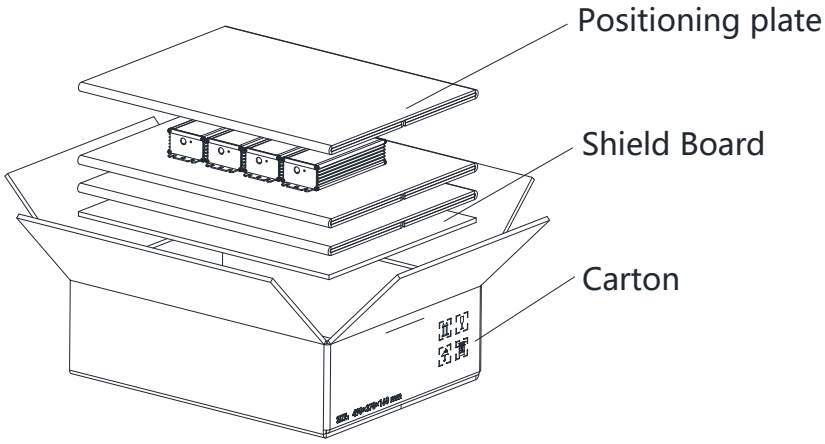
Unit: Vac	Input	Output	Dimming	Case
Input	-	3750	3750	1554
Output	3750	-	-	1554
Dimming	3750	-	-	1554
Case	1554	1554	1554	-

■ Tc Point



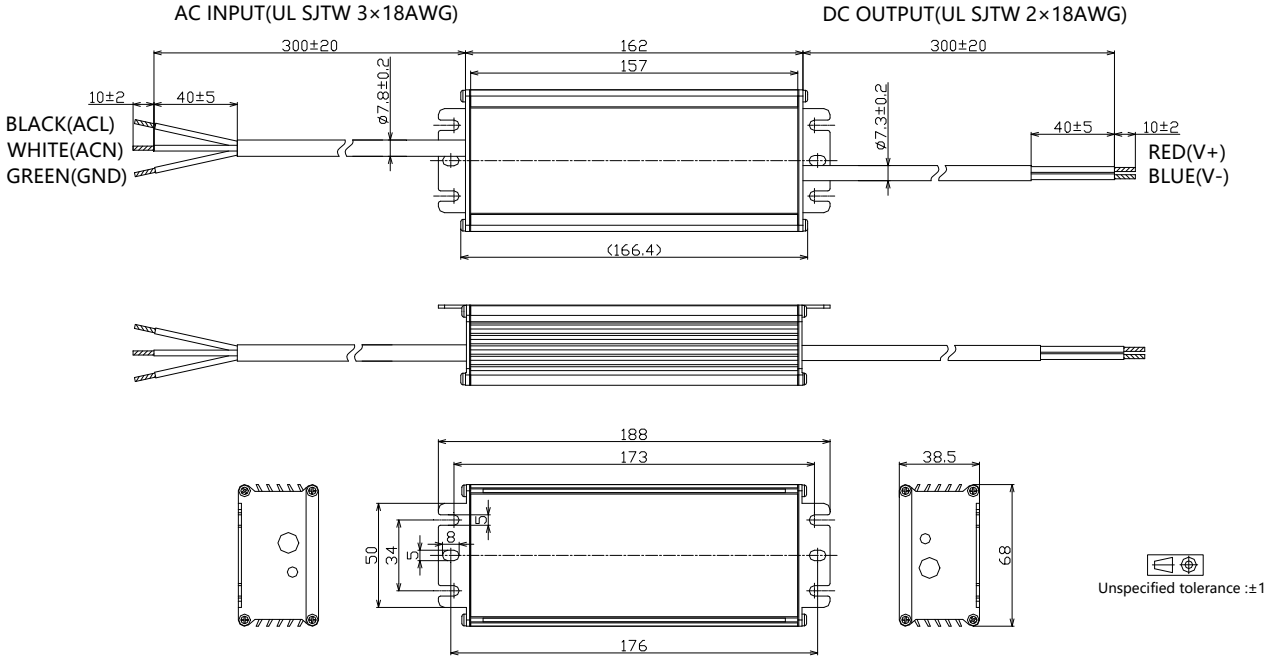
■ Packaging Information

Typical Carton Dimension(L×W×H)	490×370×160 mm
Positioning plate	3pcs/carton
Shield Board	1pcs/carton
LED Drivers/LED	12pcs/carton
Net Weight	10.0 kg/carton
Gross Weight	11.3 kg/carton

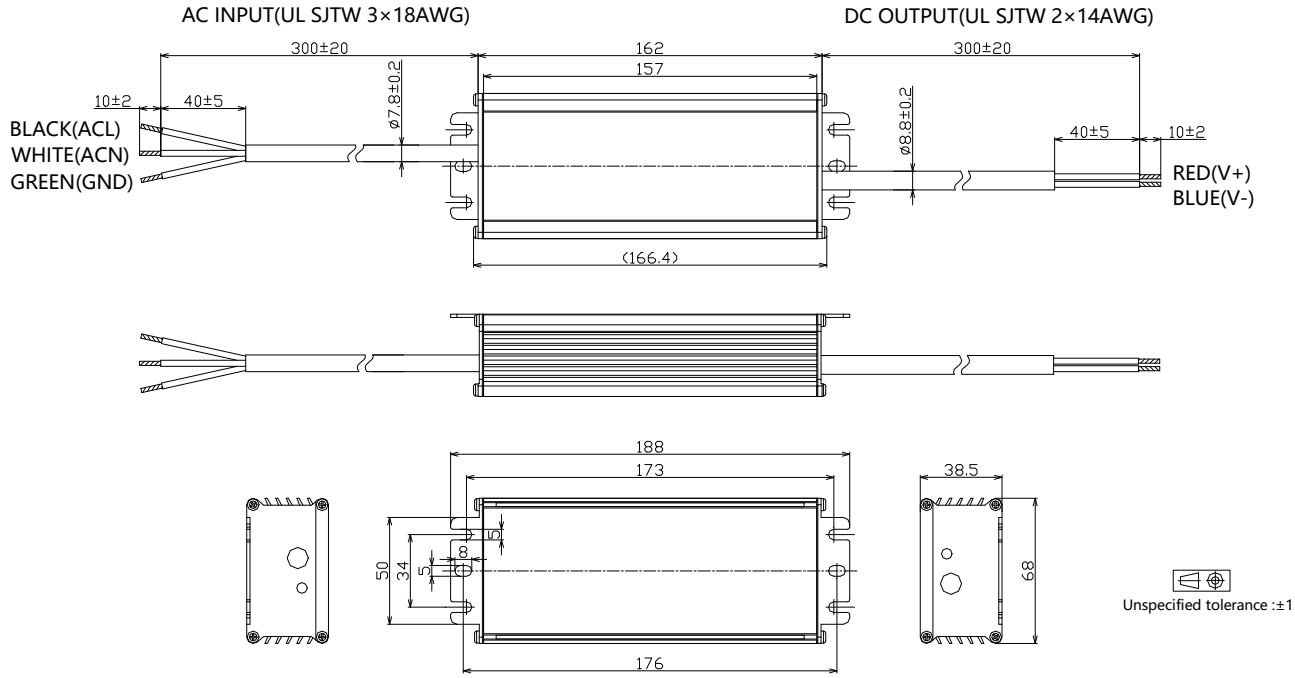


■ Mechanical Design

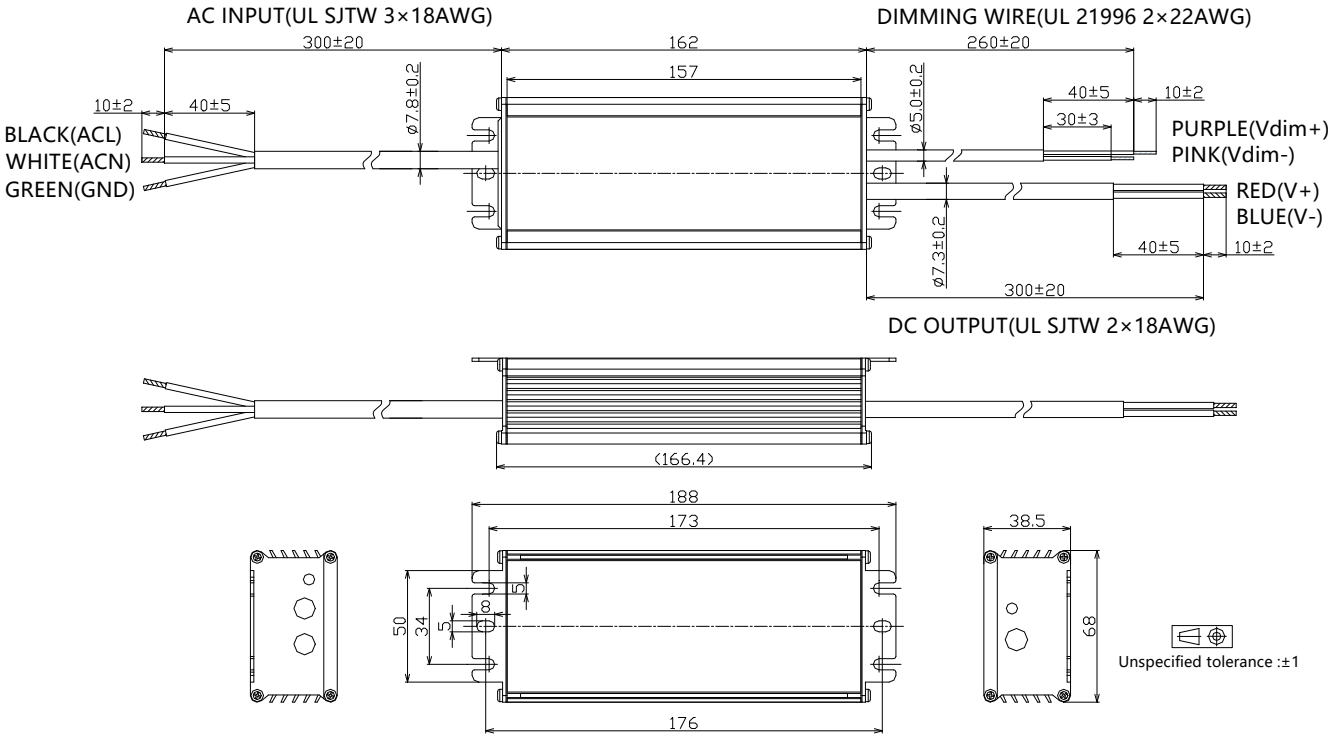
- **BLD-240-V024/V048-NNU (UL Cable)**



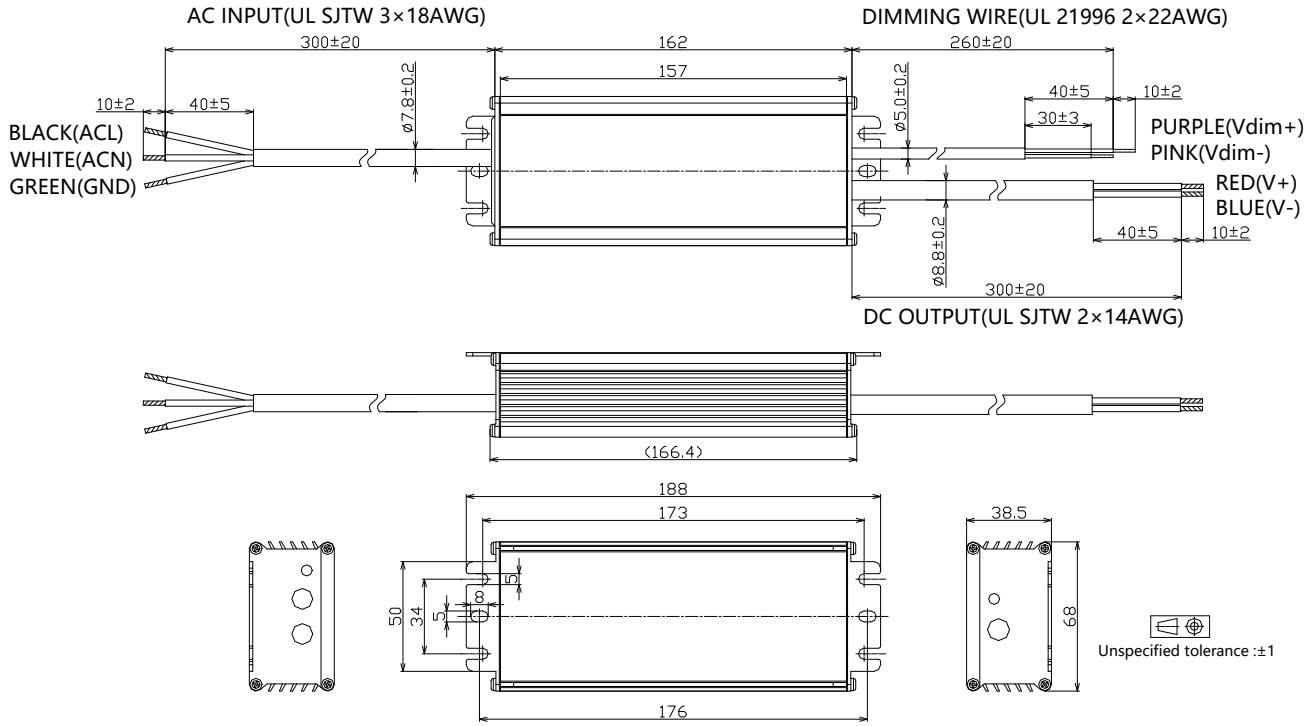
- **BLD-240-V012-NNU (UL Cable)**



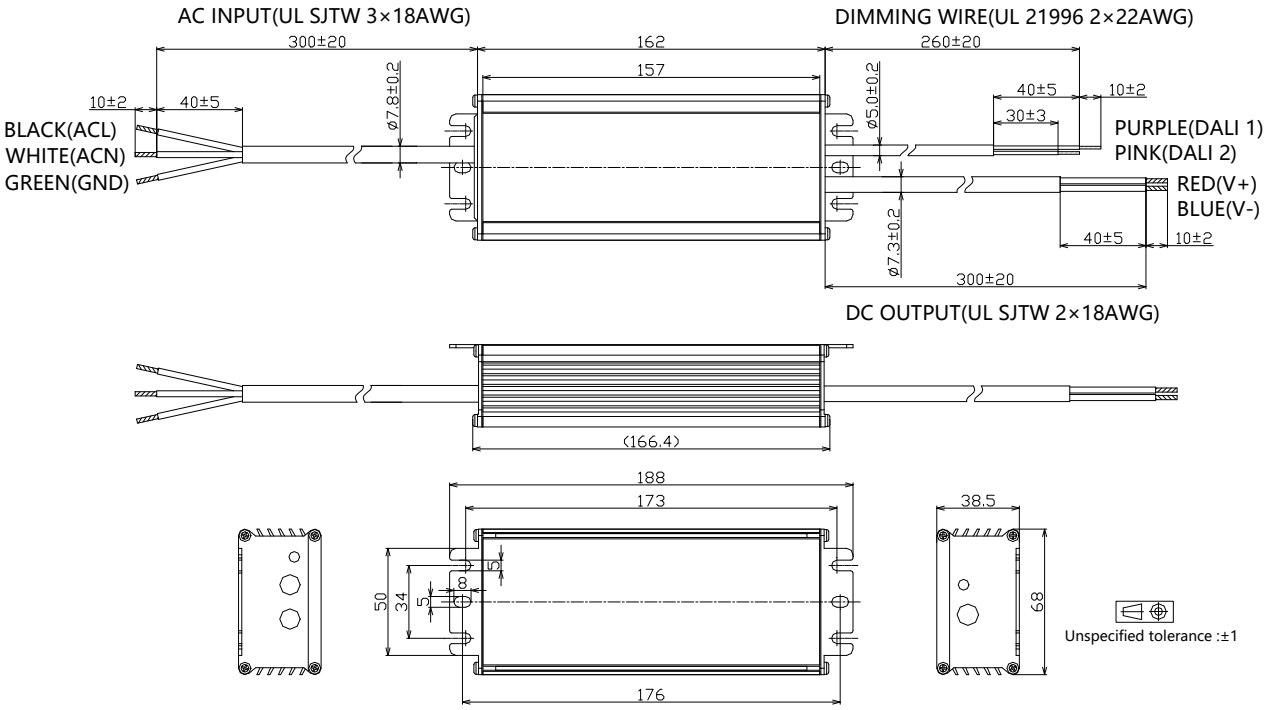
- **BLD-240-V024/V048-DNU (UL Cable)**



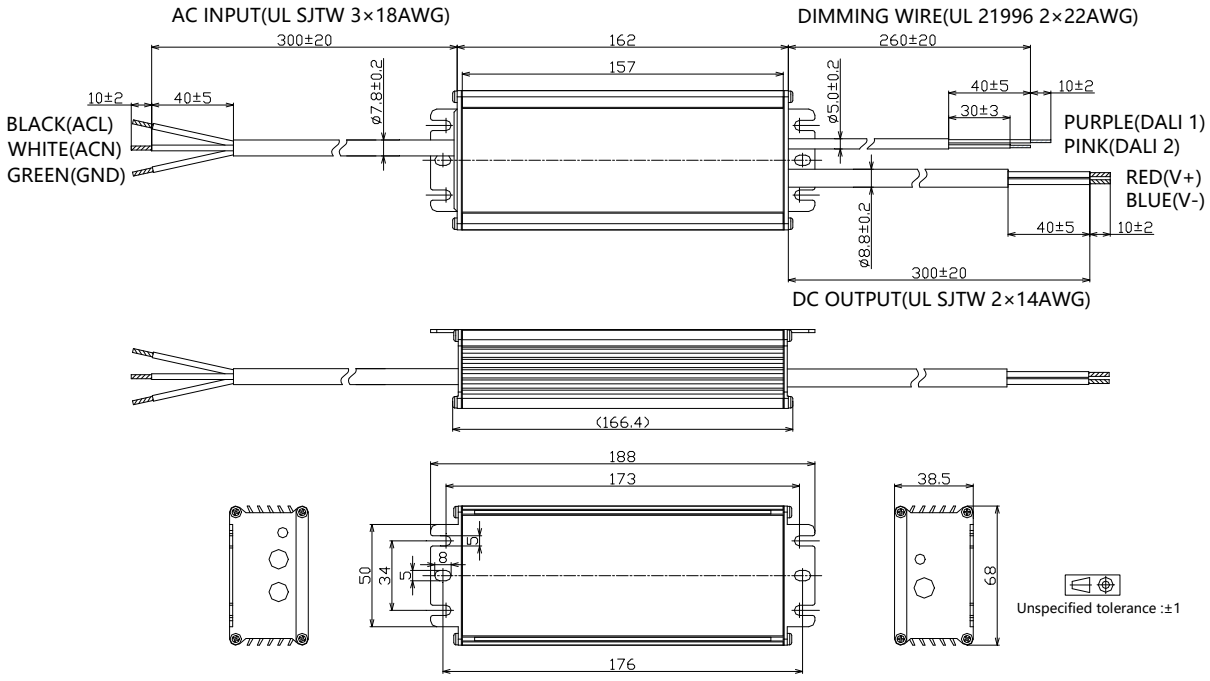
- **BLD-240-V012-DNU (UL Cable)**



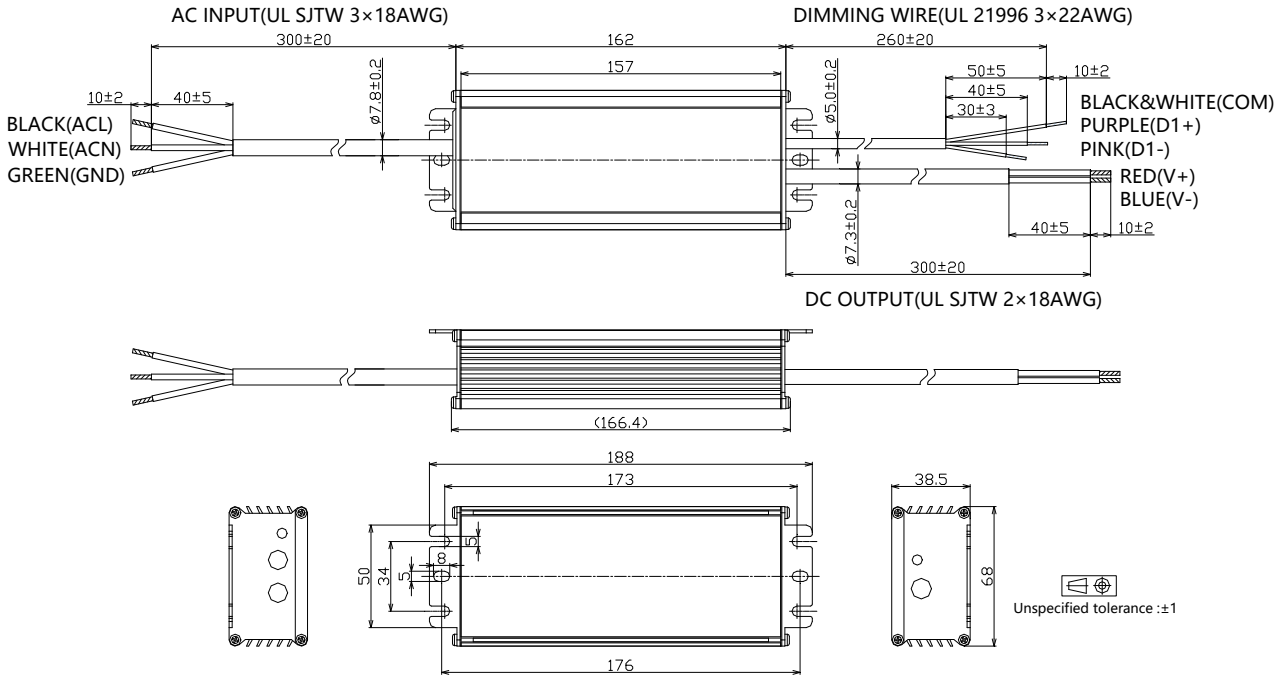
- BLD-240-V024/V048-ANU (UL Cable)



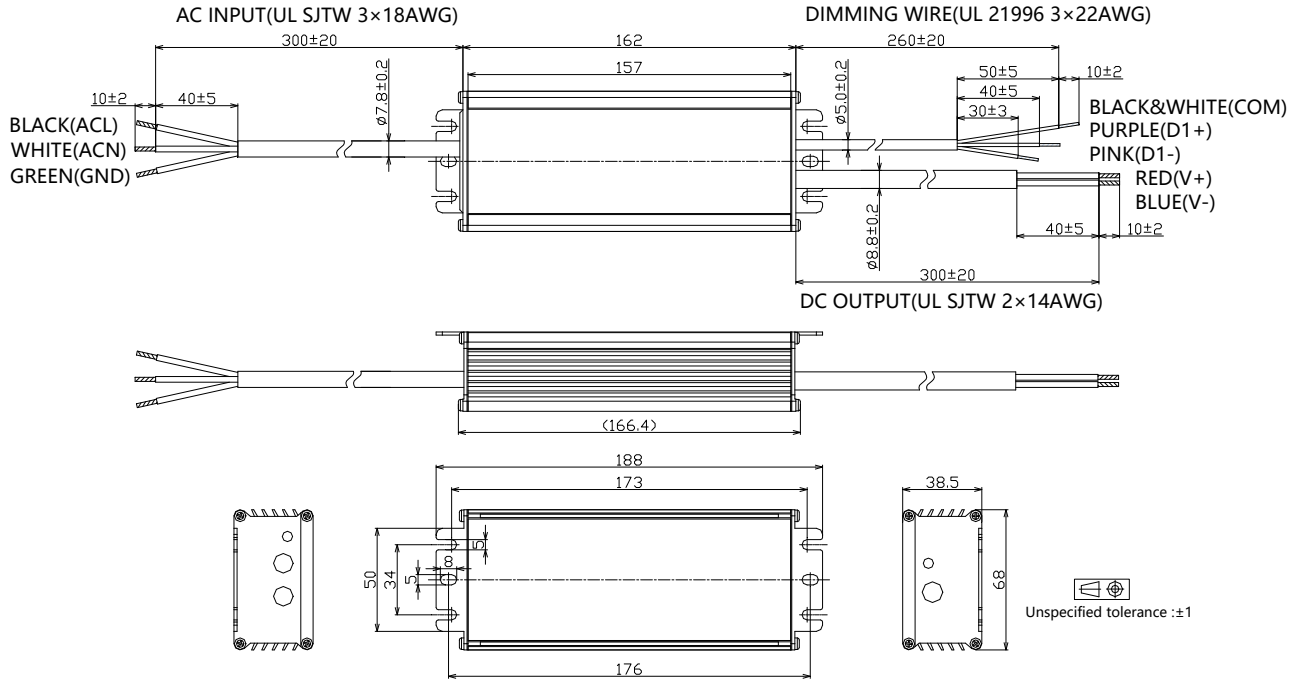
- BLD-240-V012-ANU (UL Cable)



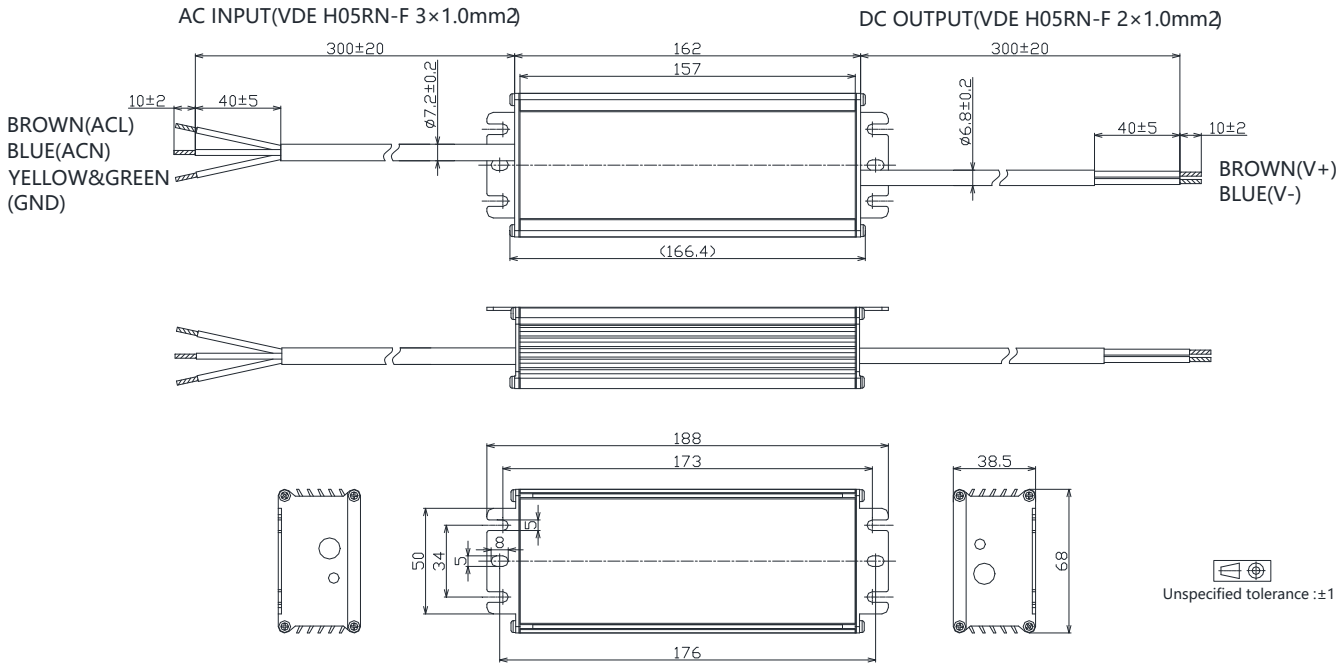
- **BLD-240-V024/V048-MRU (UL Cable)**



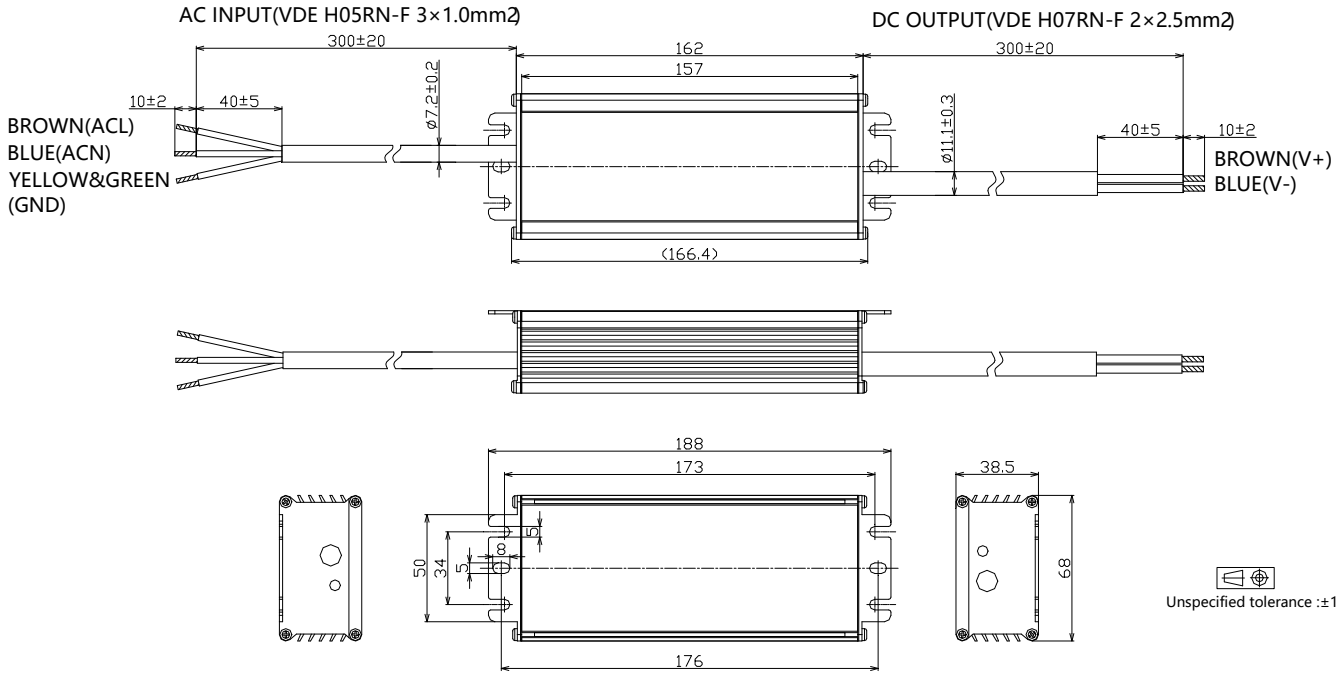
- **BLD-240-V012-MRU (UL Cable)**



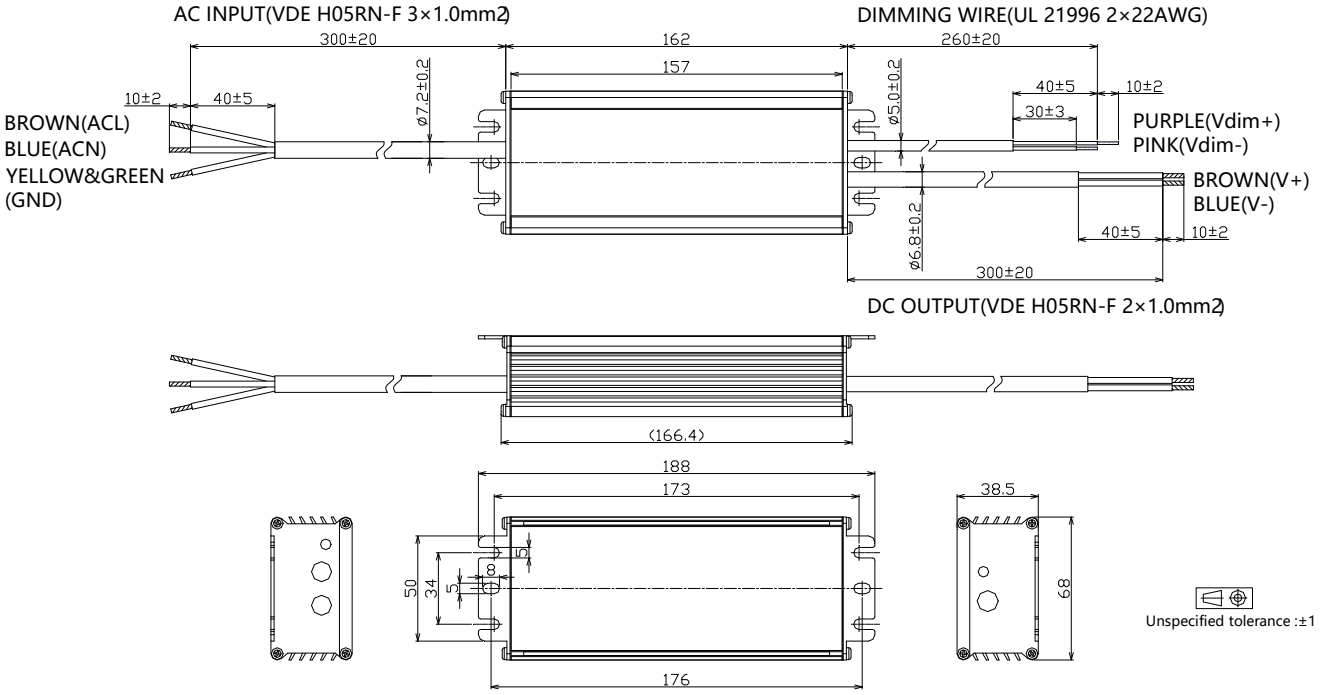
- **BLD-240-V024/V048-NNS (VDE Cable)**



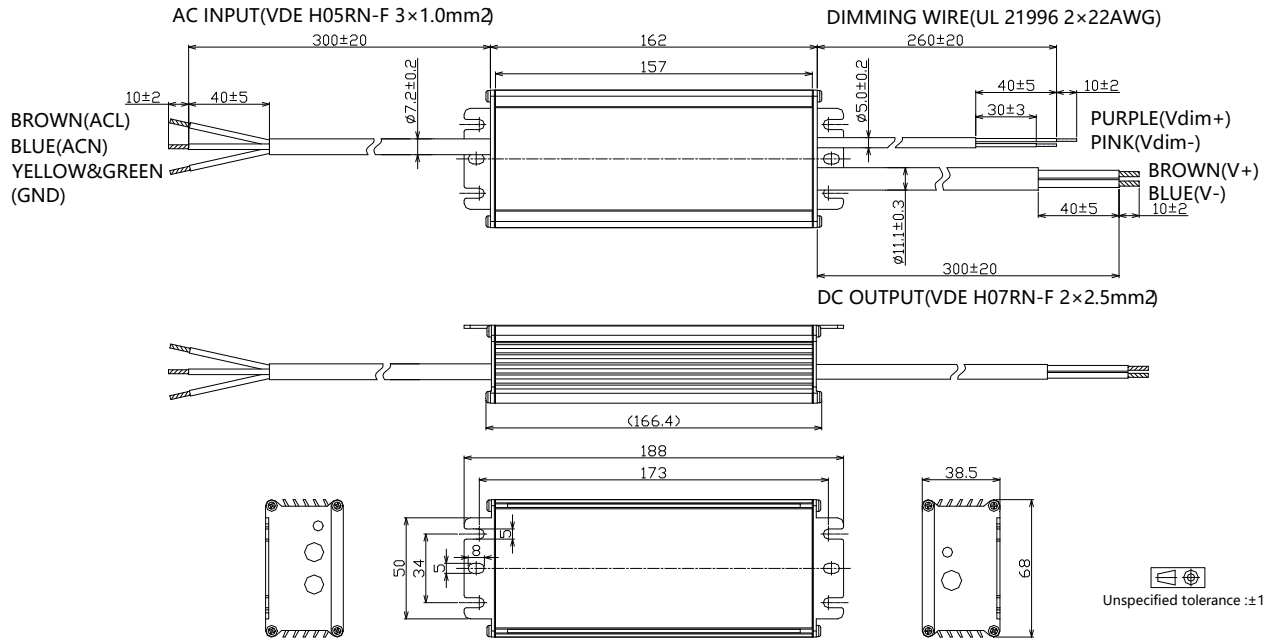
- **BLD-240-V012-NNS (VDE Cable)**



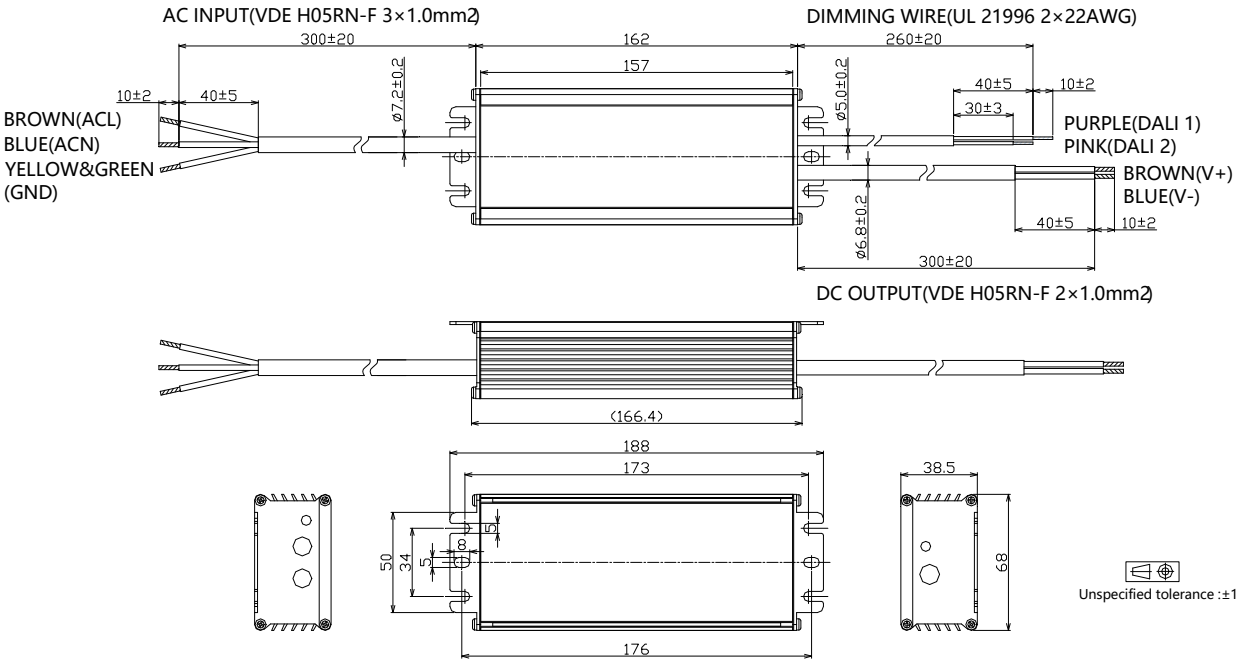
- **BLD-240-V024/V048-DNS (VDE Cable)**



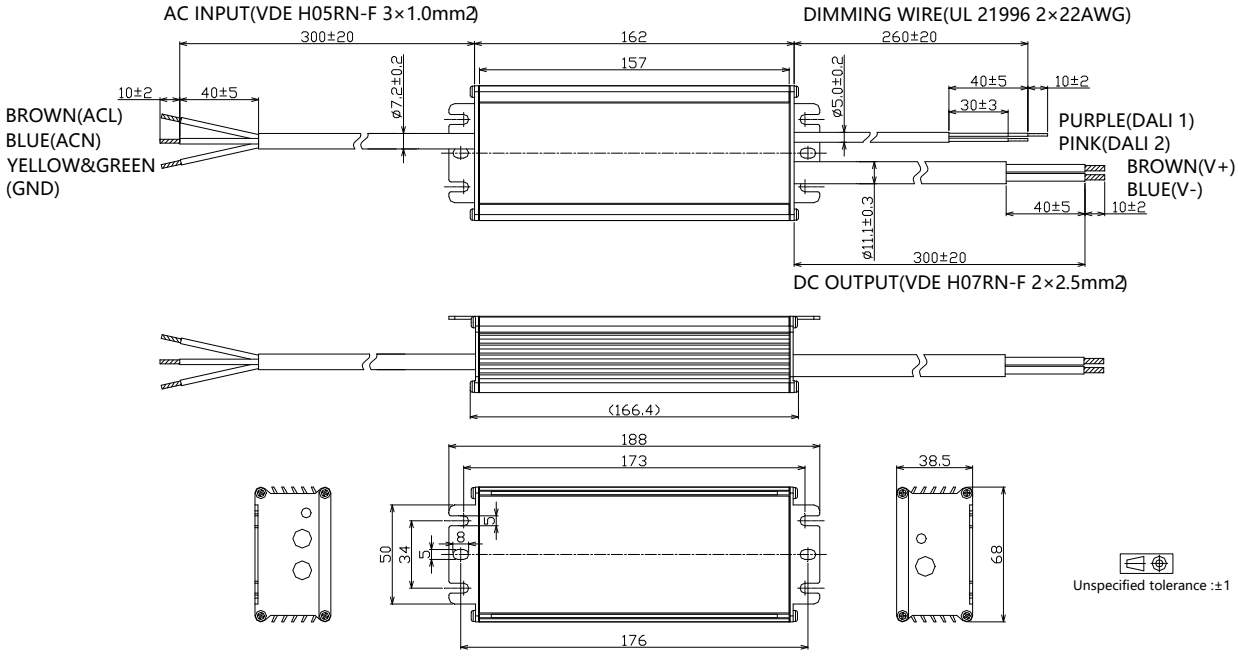
- **BLD-240-V012-DNS (VDE Cable)**



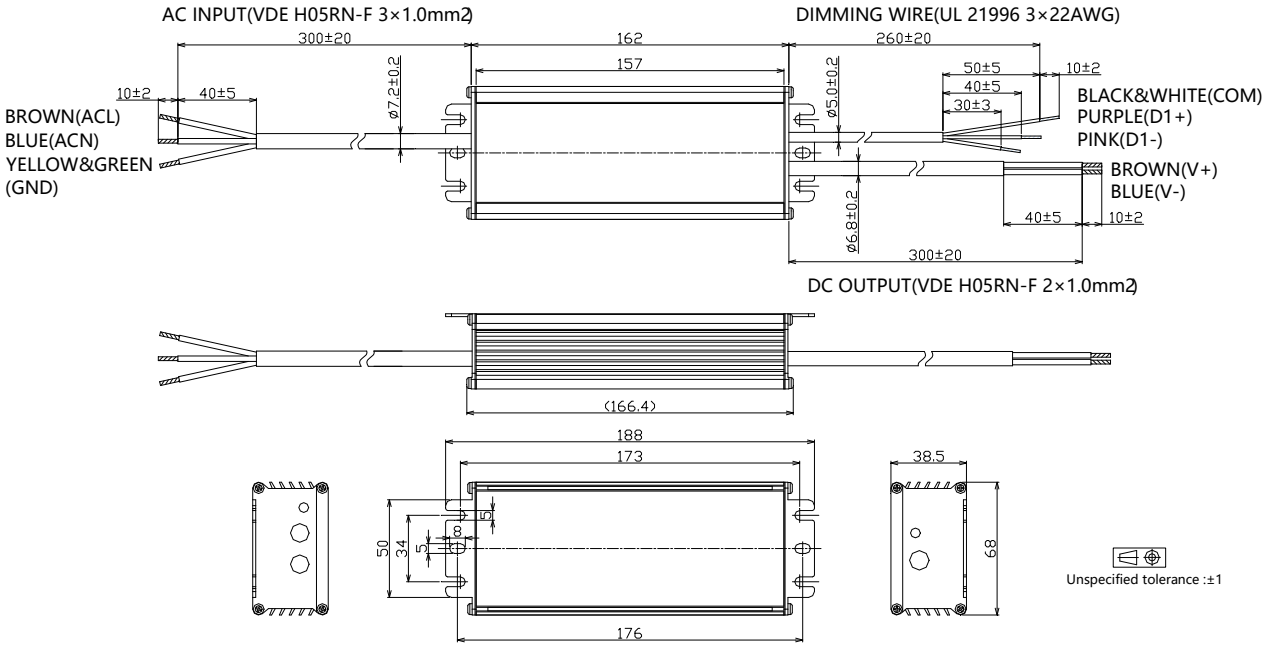
- **BLD-240-V024/V048-ANS (VDE Cable)**



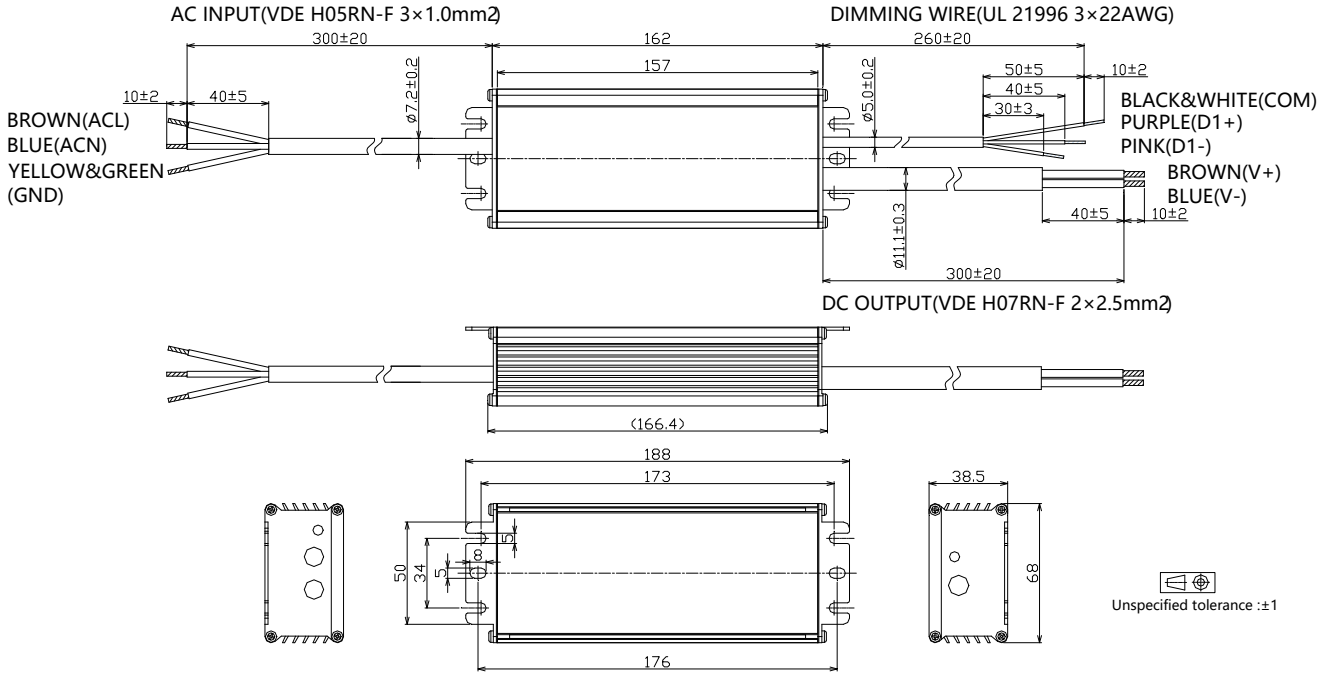
- **BLD-240 -V012-ANS (VDE Cable)**



- **BLD-240-V024/V048-MRS (VDE Cable)**



- **BLD-240-V012-MRS (VDE Cable)**



■ Revision History

Revision	Date	Contents
C	2022-3-22	1. Index page added 2. Reduced dimming interface sourcing current 3. DALI 2.0 compatibility added 4. Inrush current data added 5. Tc point position indication added 6. Dielectric strength level added 7. Packaging information added 8. Mechanical design change with dimming cable color 9. Revision history added
D	2022-12-15	1. DMX dimmable models mechanical design updated
E	2023-2-15	1. –ENZ models are deleted.
F	2023-7-14	1. Update cable selection table in Model List Section
G	2024-4-3	1. Remove EN model with 12Vaux
H	2024-4-11	1. Push and PWM dimming description updated.
I	2024-8-23	1. Power factor, THD, efficiency curves updated by 10-100% load range 2. MCB usage and driver quantity section added 3. Inrush current data updated

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