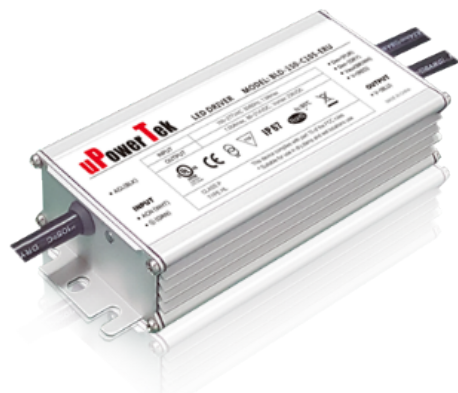


Product Datasheet



The global certified BLD-096-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



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96W, 100-277Vac Input Constant Voltage LED Drive

■ Features

- Supply Voltage: 90-305Vac or 127-420Vdc, 380Vac for 2 hours
- Great Surge Immunity 10kV
- PWM Output Frequency >1kHz
- 100,000Hour Life @ Tc=75°C
- 7 Year Warranty @ Tc<=75°C
- 0-10V/PWM/DALI2.0/Push (Switch) /DMX (RDM) Dimmable
- 2% Minimum Dimming Output
- Dim Off with 0.5W Standby
- 12V 300mA Auxiliary Power to Power Controllers and Fans (Optional)
- Input Over Voltage Protection (Optional)
- Class II Model Available
- UL Class P, ENEC/CB/CCC SELV Output
- Safety according to EN 61347-1, 61347-2-3 61347-2-13, 62384

■ Model List

Model Number	Input Voltage Range	Output Power	Output Voltage	Output Current Min	Output Current Max	Certification
BLD-096-V012-XYZ	90 ~ 305 Vac	96 W	12V	0	8A	UL/FCC/CB/ENEC/CCC/BIS/RCM/PSE/EAC
BLD-096-V024-XYZ	90 ~ 305 Vac	96 W	24V	0	4A	
BLD-096-V036-XYZ	90 ~ 305 Vac	96 W	36V	0	2.67A	
BLD-096-V048-XYZ	90 ~ 305 Vac	96 W	48V	0	2A	

XY=	Dimming Method	Programmable	12Vaux	Dim-off Power
NN	-	-	-	-
DN	0-10V	-	-	<1.5W
EN	0-10V	-	✓	<0.5W
AN	DALI2.0	-	-	<1.5W
MR	DMX	Set Address	-	<1.5W

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

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

96W, 100-277Vac Input Constant Voltage LED Driver

■ 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	0.95Amax@120Vac & Full-Load, 0.48Amax@220Vac & Full-Load
Inrush Current	See Inrush Current Section in the datasheet
Leakage Current	1mA max @277Vac 60Hz, UL8750, 0.75mAmax @220Vac 50Hz, IEC61347-1
Input Under Voltage	Shut down and auto-restart
Input Over Voltage	*Optional: Shutdown @320Vac
Surge Protection	Line to line 6kV, line to ground 10kV, IEC 61000-4-5
Voltage Accuracy	±3%Vo
Setup Time	1.2s max.
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 $T_c \geq 105 \pm 10^\circ\text{C}$; Auto Recovery When $T_c \leq 70 \pm 10^\circ\text{C}$
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	6.34x2.66x1.32 by inch (body), 7.40x2.66x1.32 by inch (endcaps included) 161.0x67.5x33.5 by mm (body), 188.0x67.5x33.5 by mm (endcaps included)
Net Weight	800g
Packing	See Package Information Section in the datasheet

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

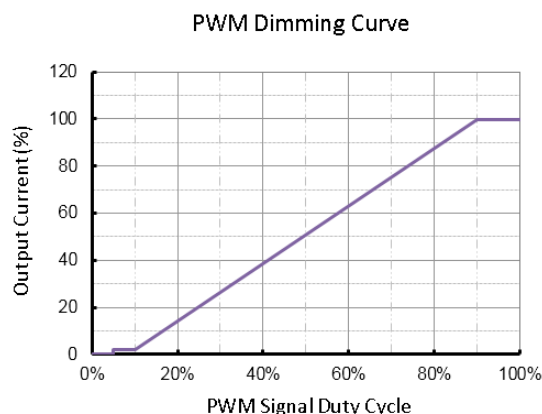
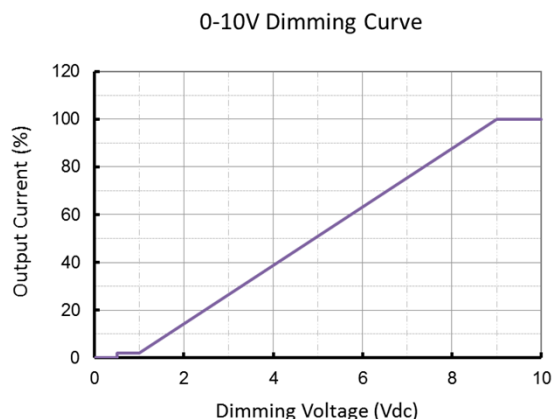
■ Dimming

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	3.8V		10V
PWM Low	0V		0.6V

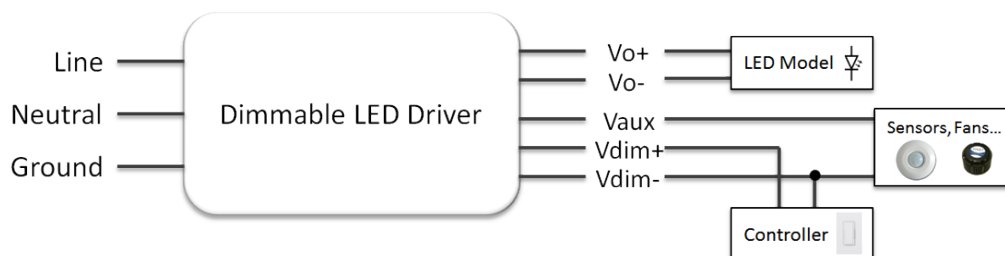
96W, 100-277Vac Input Constant Voltage LED Driver

PWM Frequency	300Hz	2kHz
External PWM Controller	300uA	
Current Sinking Capability		
DALI Interface Standard	IEC62386, part 101,102,207	
DA1,DA2 High Level	9.5	16
DA1,DA2 Low Level	-6.5	0
DA1,DA2 Current	0	2mA

Dimming Curve



Dimming Wiring



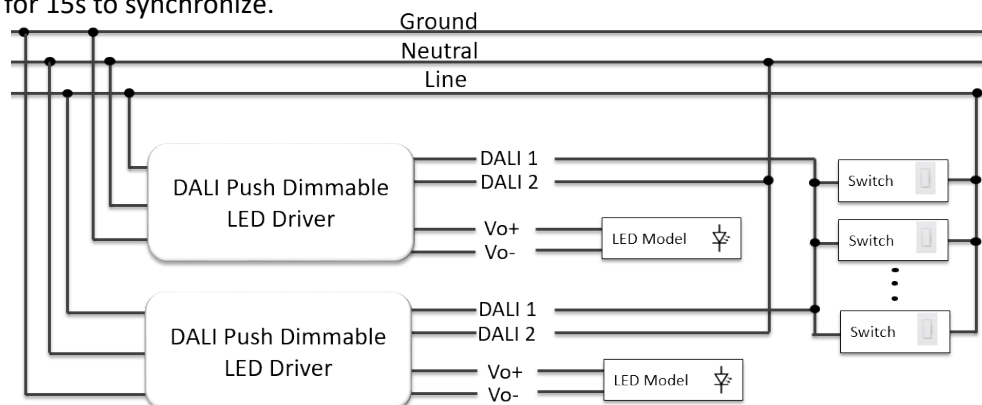
Push (Switch) Dim

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%/s.

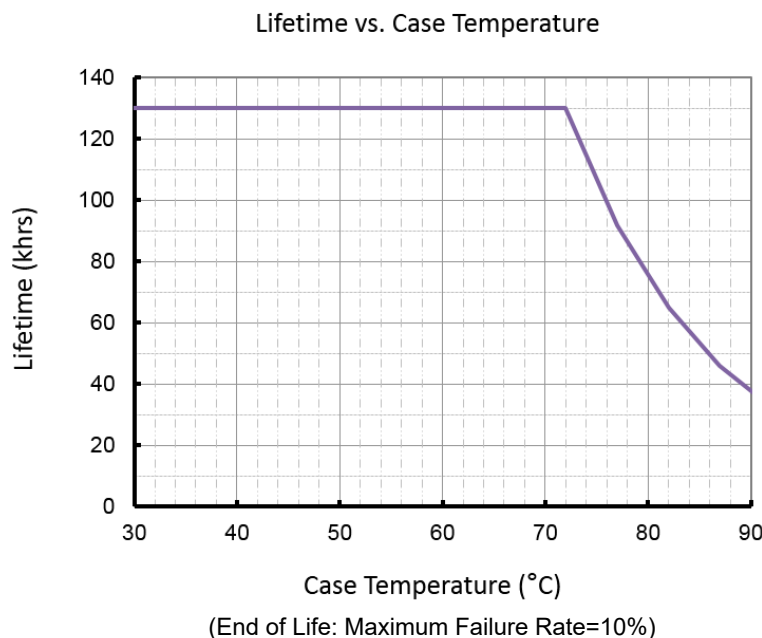
Long push for 15s to synchronize.



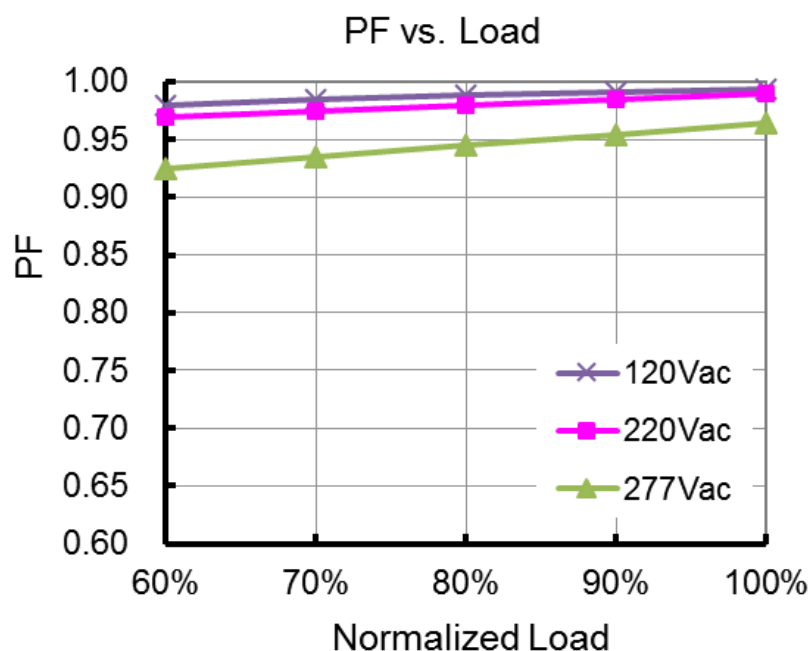
■ Safety/EMC Compliance

Safety Standard	Description
UL8750	Light emitting diode(LED) equipment for use in lighting products
UL1310	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
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

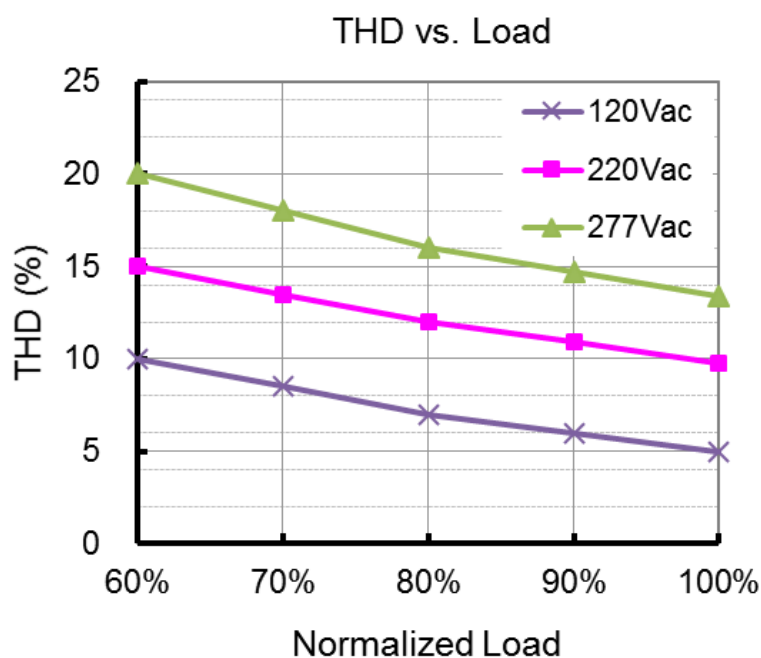
■ Lifetime vs. Case Temperature



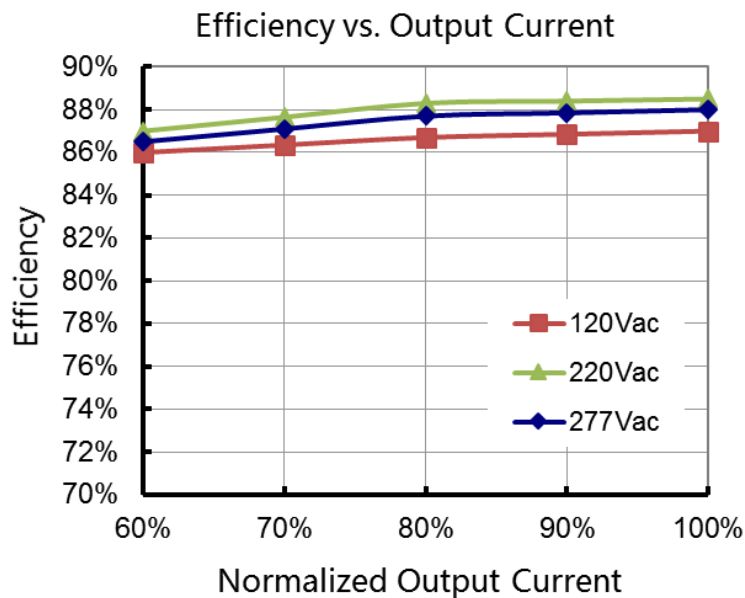
■ Power Factor vs. Load



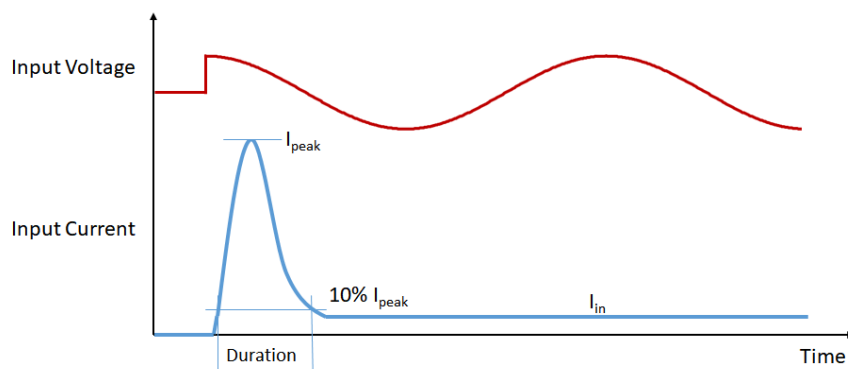
■ THD vs. Load



■ Efficiency vs. Load (24V Model)



■ Inrush Current



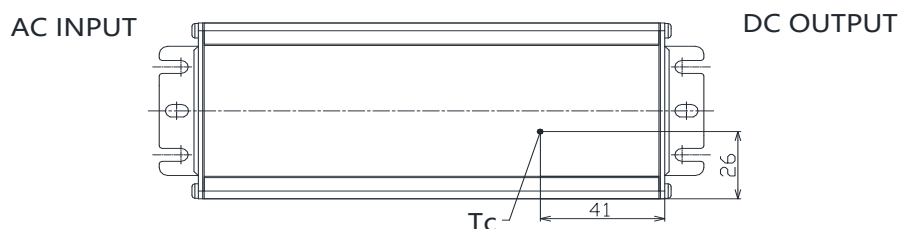
Input Voltage	I_{peak}	Duration
120Vac	37.2A	824us
220Vac	66.8A	824us
277Vac	90A	760us

Please contact with us for MCB calculation and waveforms.

■ Dielectric Strength

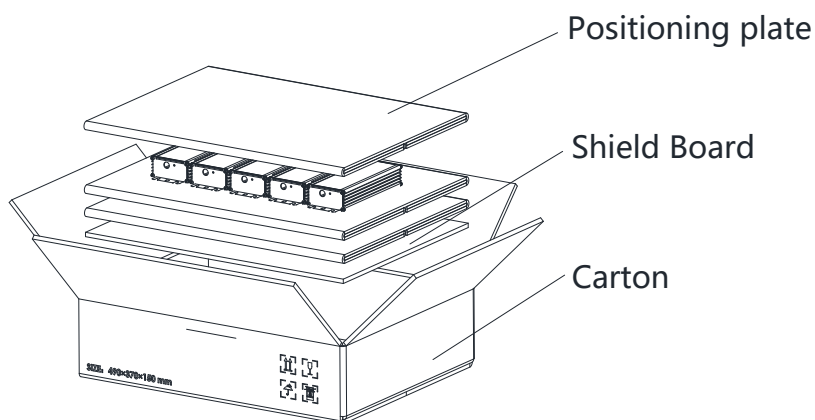
Unit: Vac	Input	Output	Dimming	Case
Input	-	3750	3750	1554
Output	3750	-	-	1554
Dimming	3750	-	-	1554
Case	1554	1554	1554	-

■ Tc Point



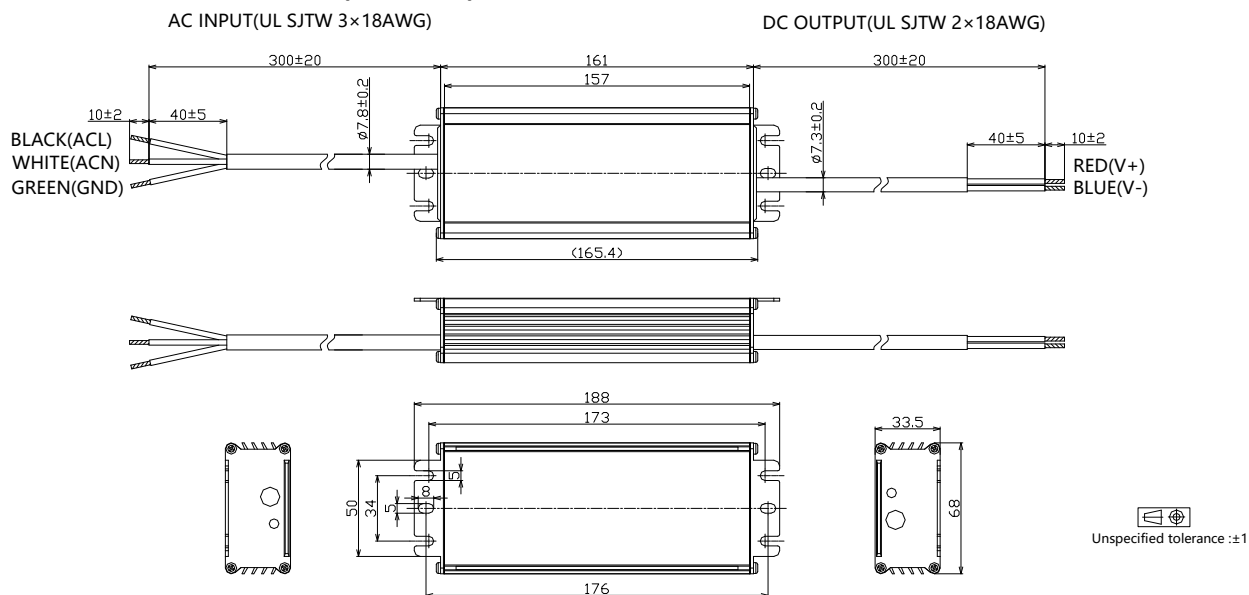
■ Packaging Information

Typical Carton Dimension(L×W×H)	490×370×150 mm
Positioning plate	3pcs/carton
Shield Board	1pcs/carton
LED Drivers	15pcs/carton

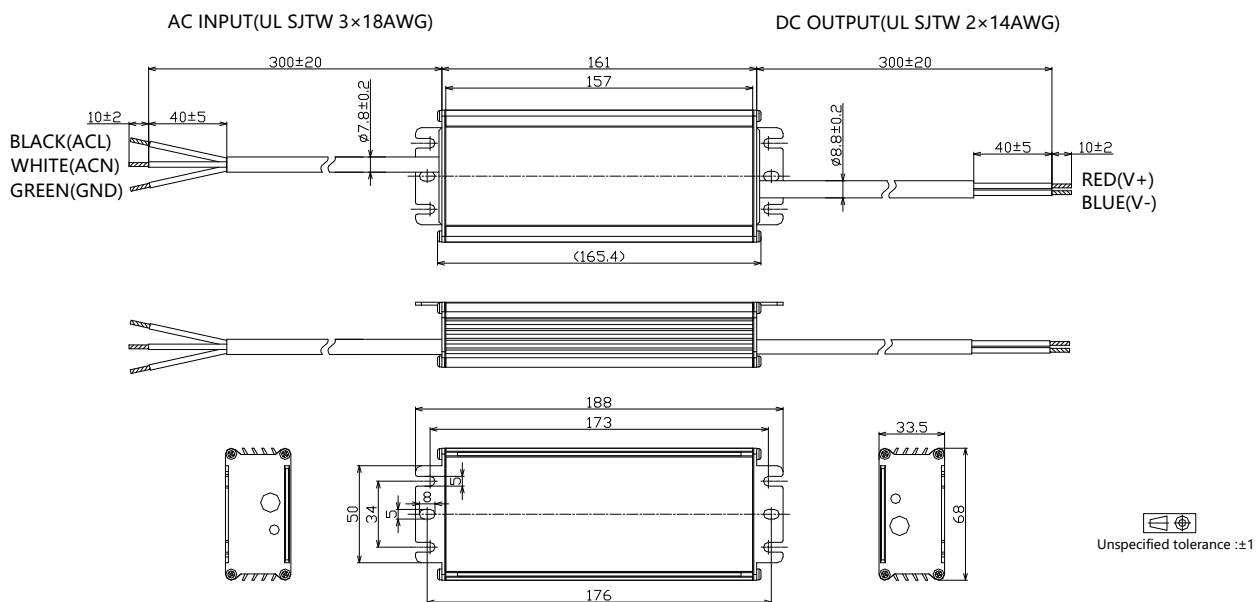


■ Mechanical Design

- BLD-096-V024/V048-NNU (UL Cable)

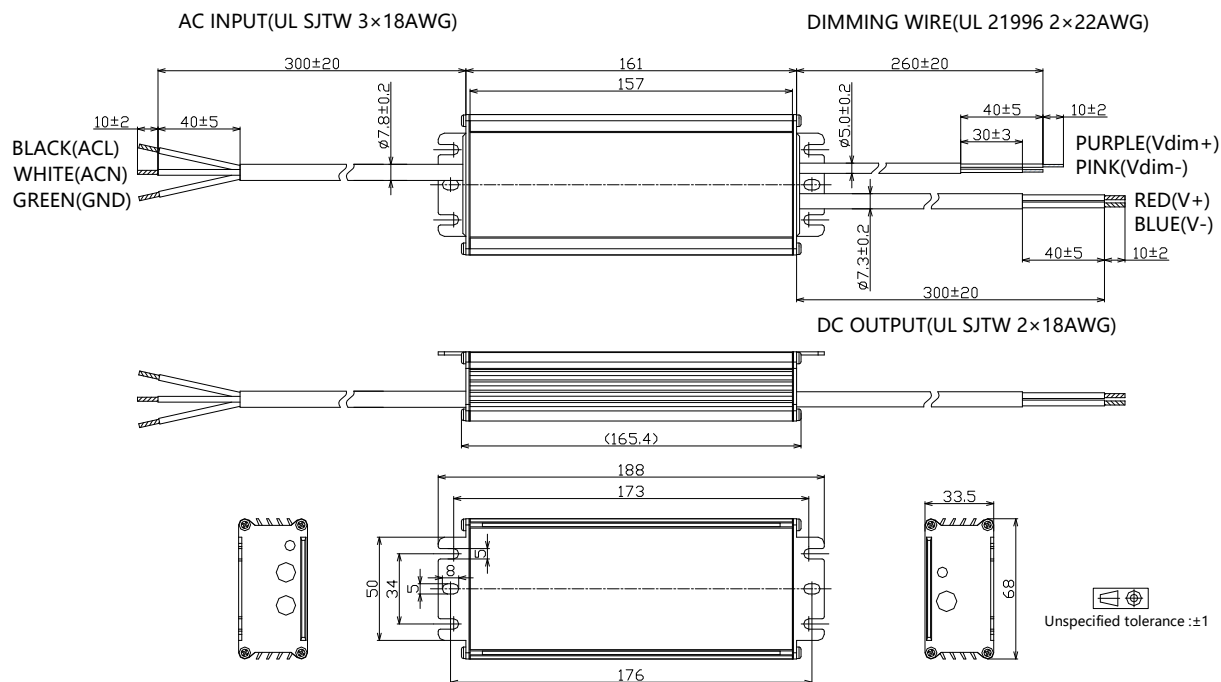


- BLD-096-V012-NNU (UL Cable)

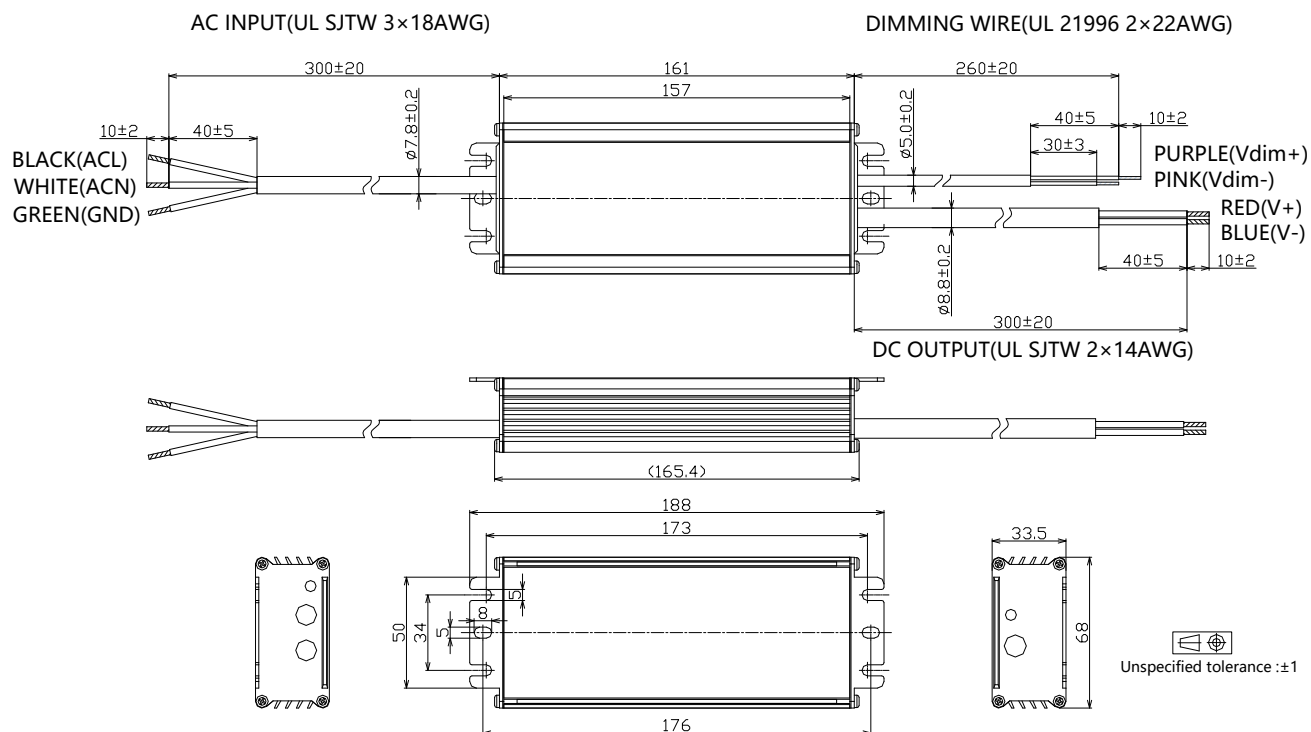


96W, 100-277Vac Input Constant Voltage LED Driver

- BLD-096-V024/V048-DNU (UL Cable)

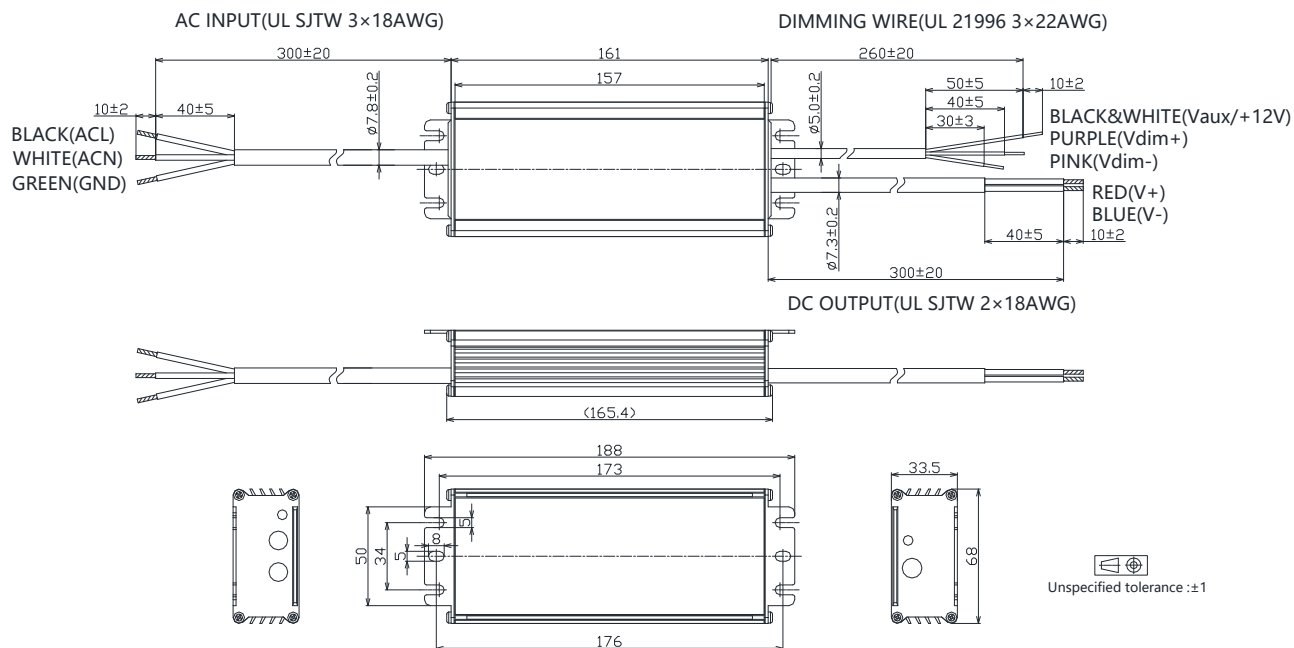


BLD-096-V012-DNU (UL Cable)

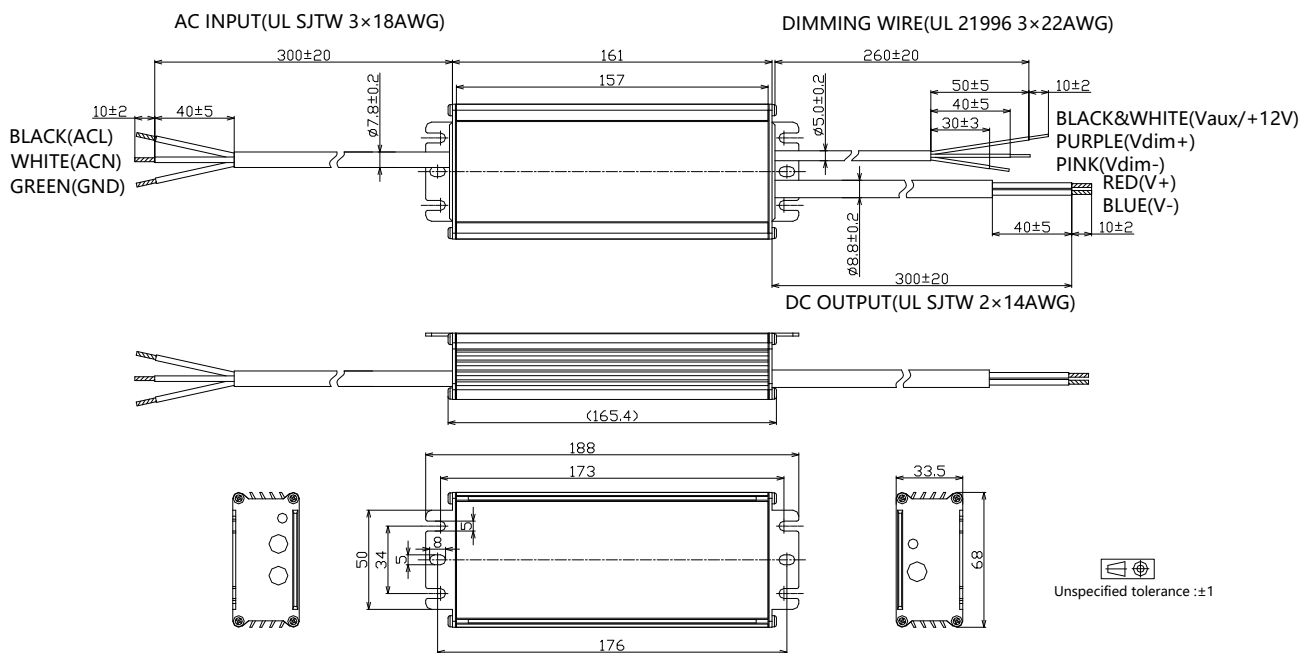


96W, 100-277Vac Input Constant Voltage LED Driver

- BLD-096-V024/V048-ENU (UL Cable)

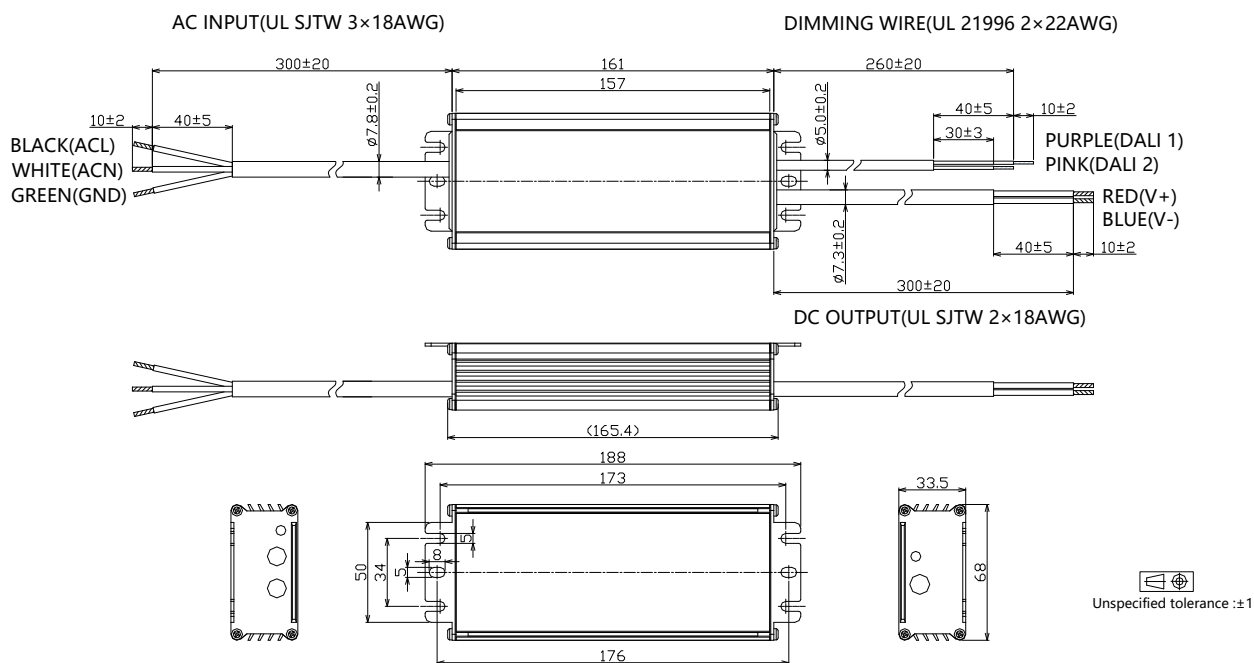


- BLD-096-V012-ENU (UL Cable)

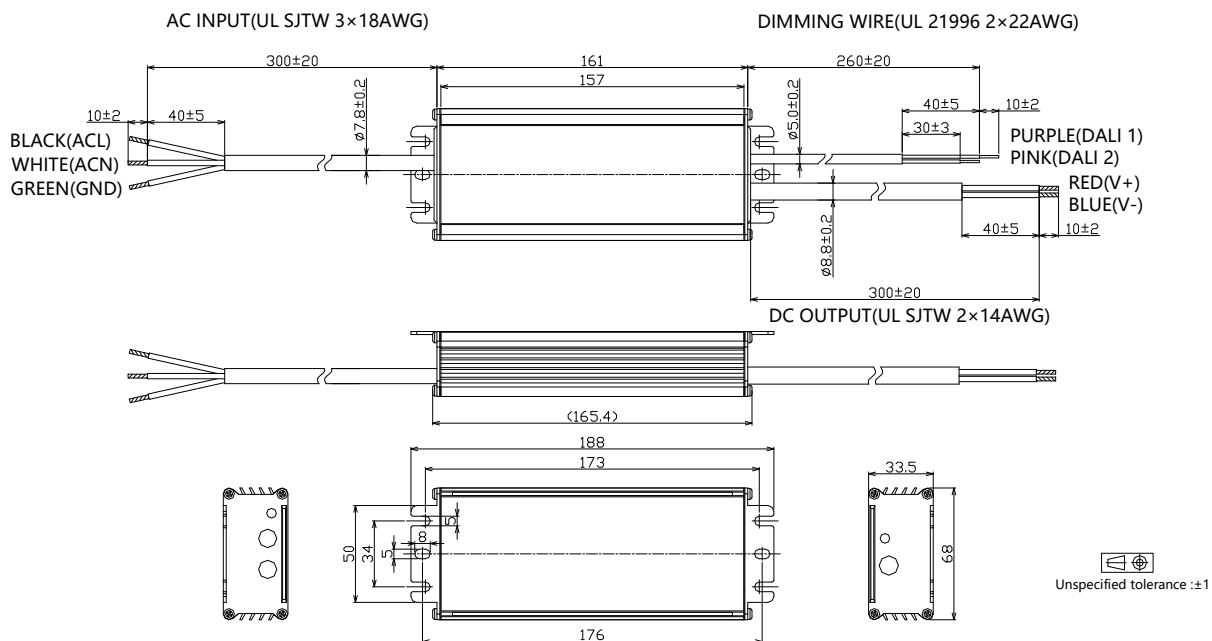


96W, 100-277Vac Input Constant Voltage LED Driver

- BLD-096-V024/V048-ANU (UL Cable)

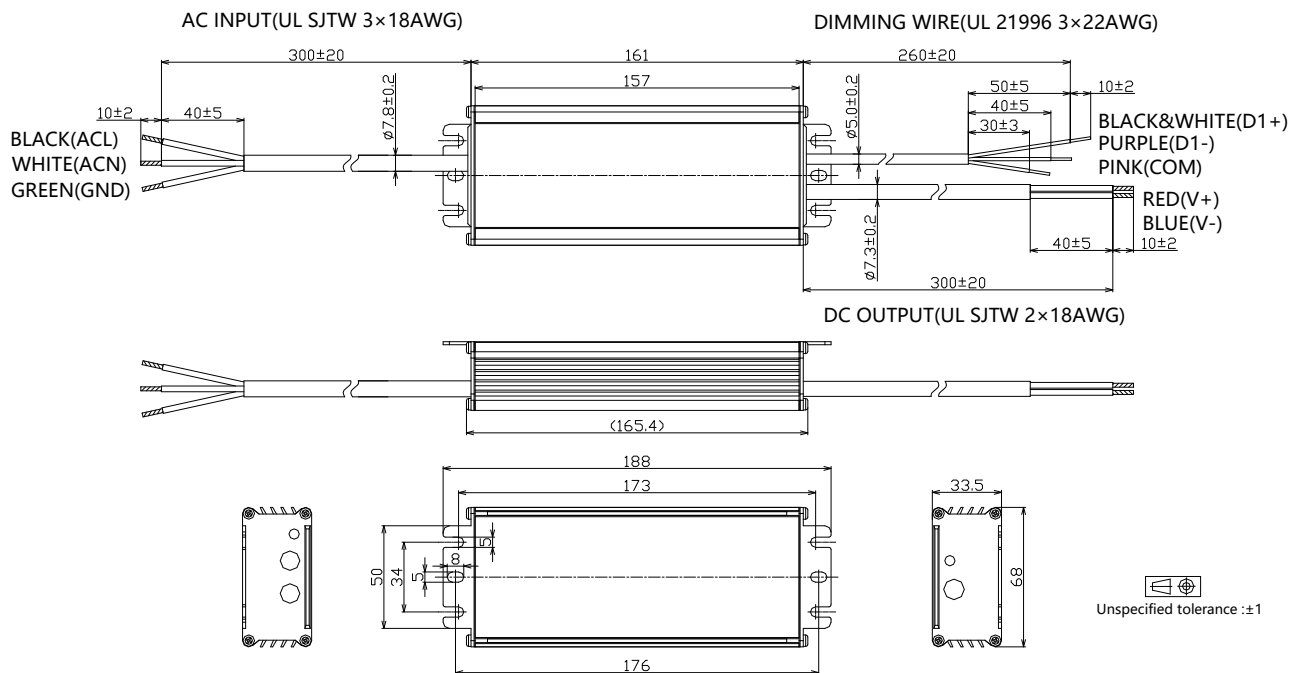


- BLD-096-V012-ANU (UL Cable)

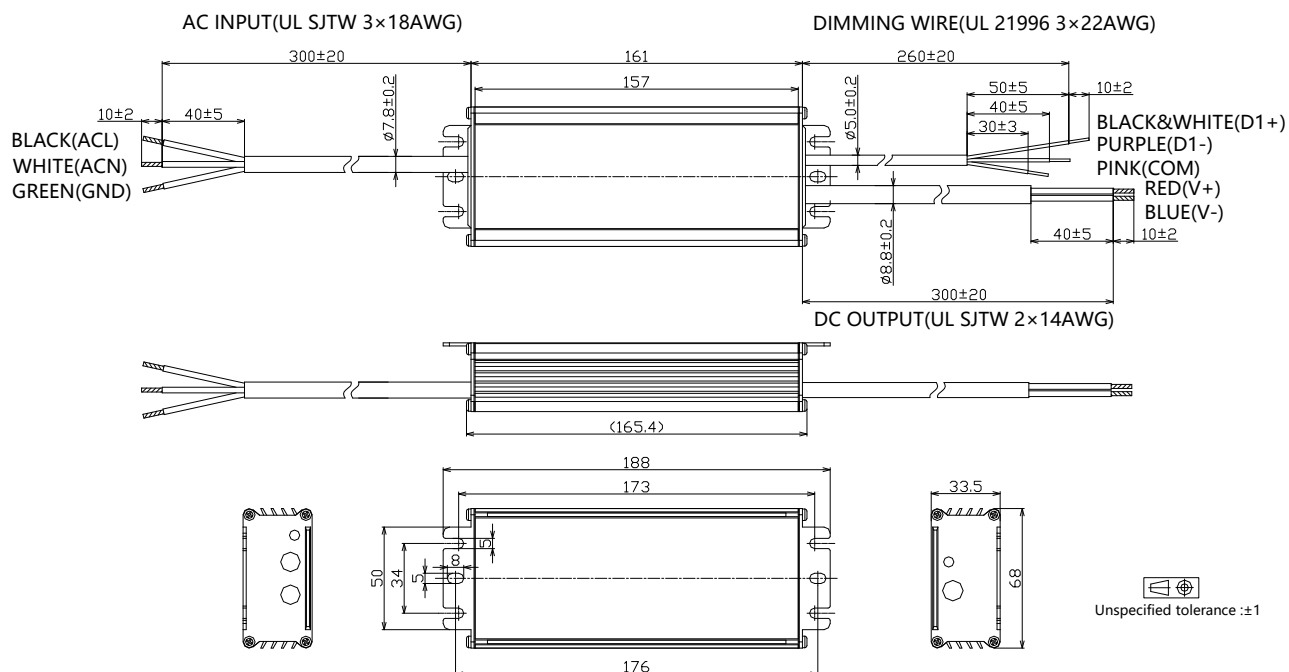


96W, 100-277Vac Input Constant Voltage LED Driver

- BLD-096-V024/V048-MRU (UL Cable)

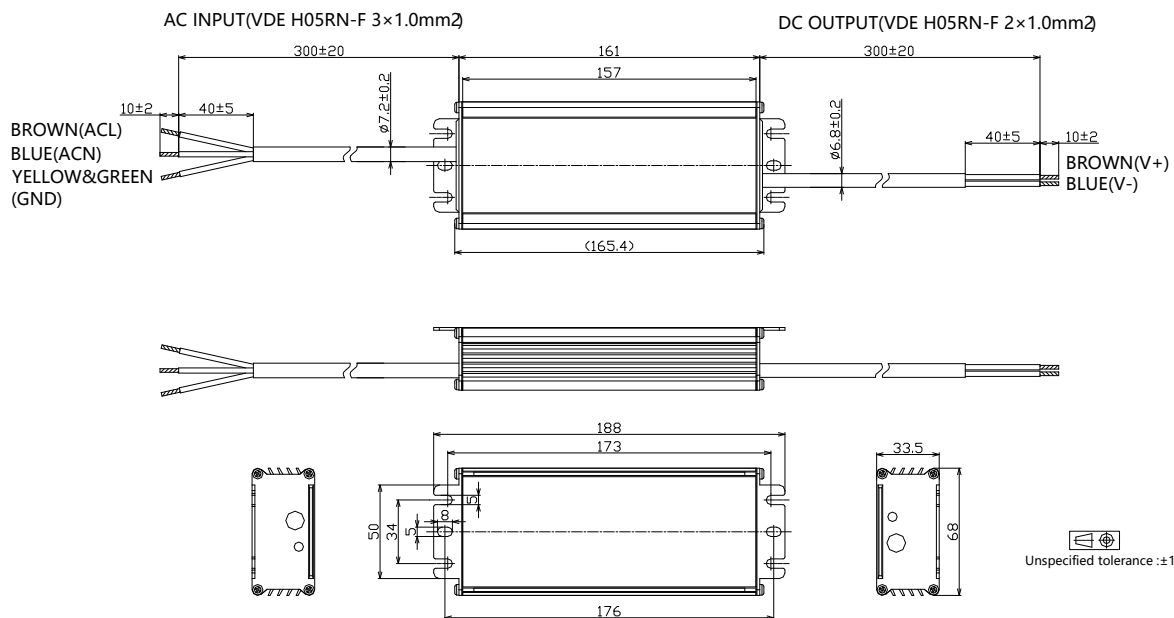


- BLD-096-V012-MRU (UL Cable)

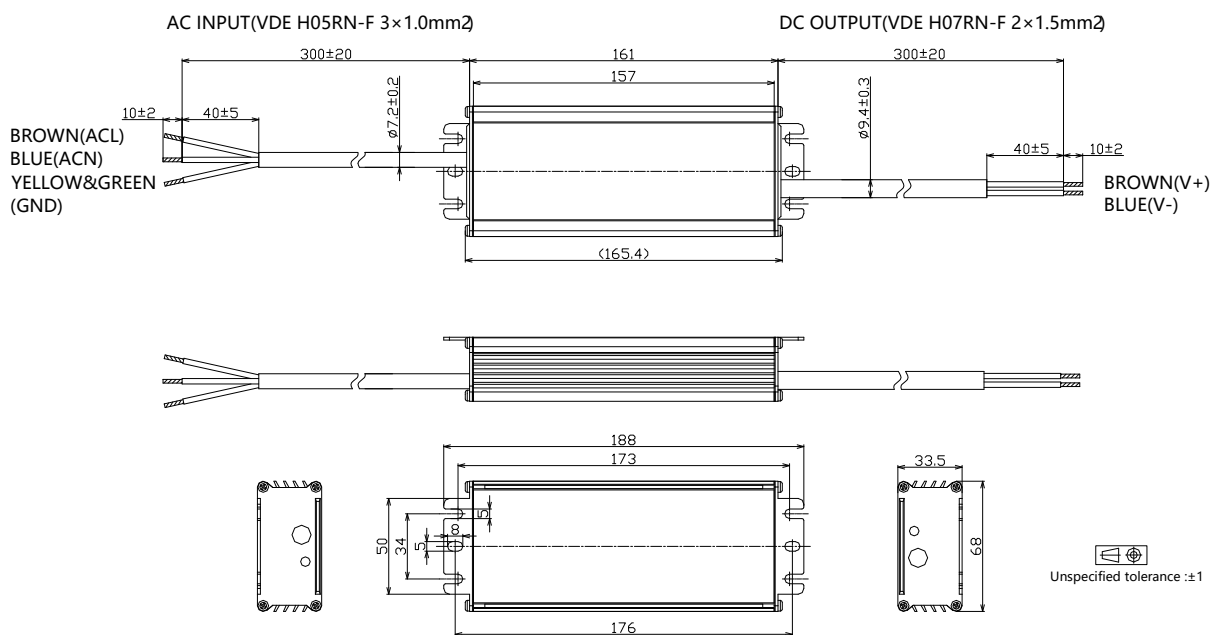


96W, 100-277Vac Input Constant Voltage LED Driver

- BLD-096-V024/V048-NNS (VDE Cable)

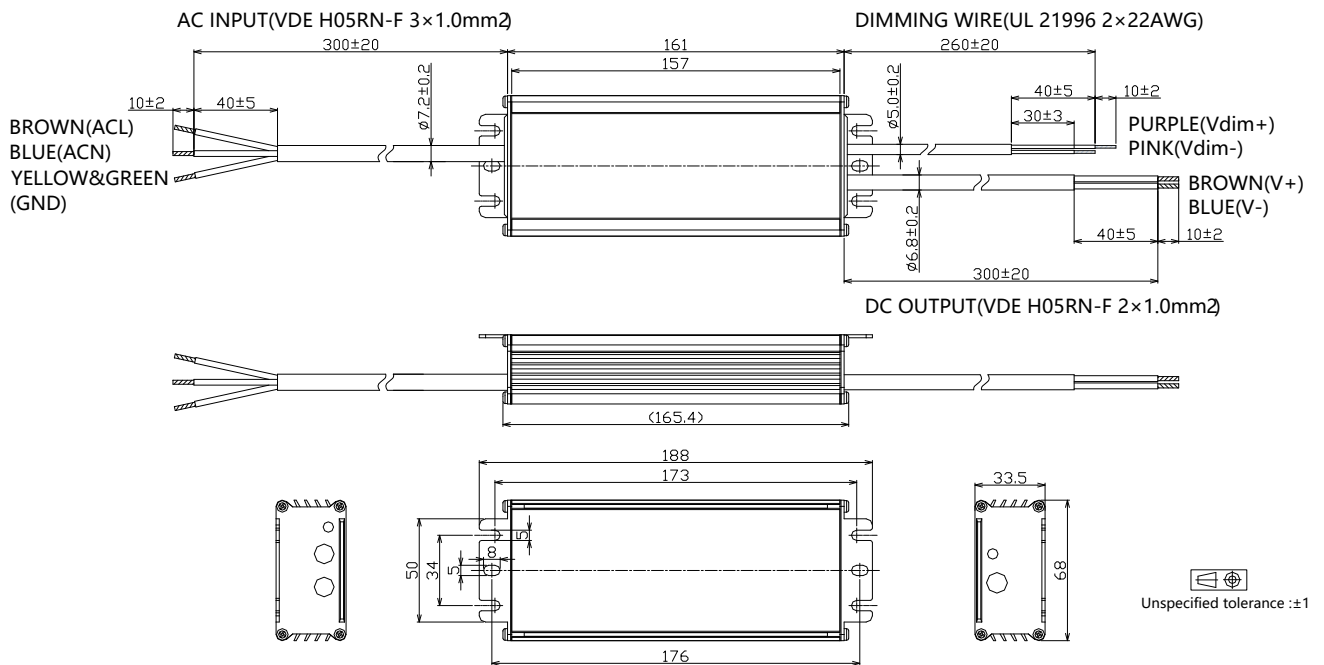


- BLD-096-V012-NNS (VDE Cable)

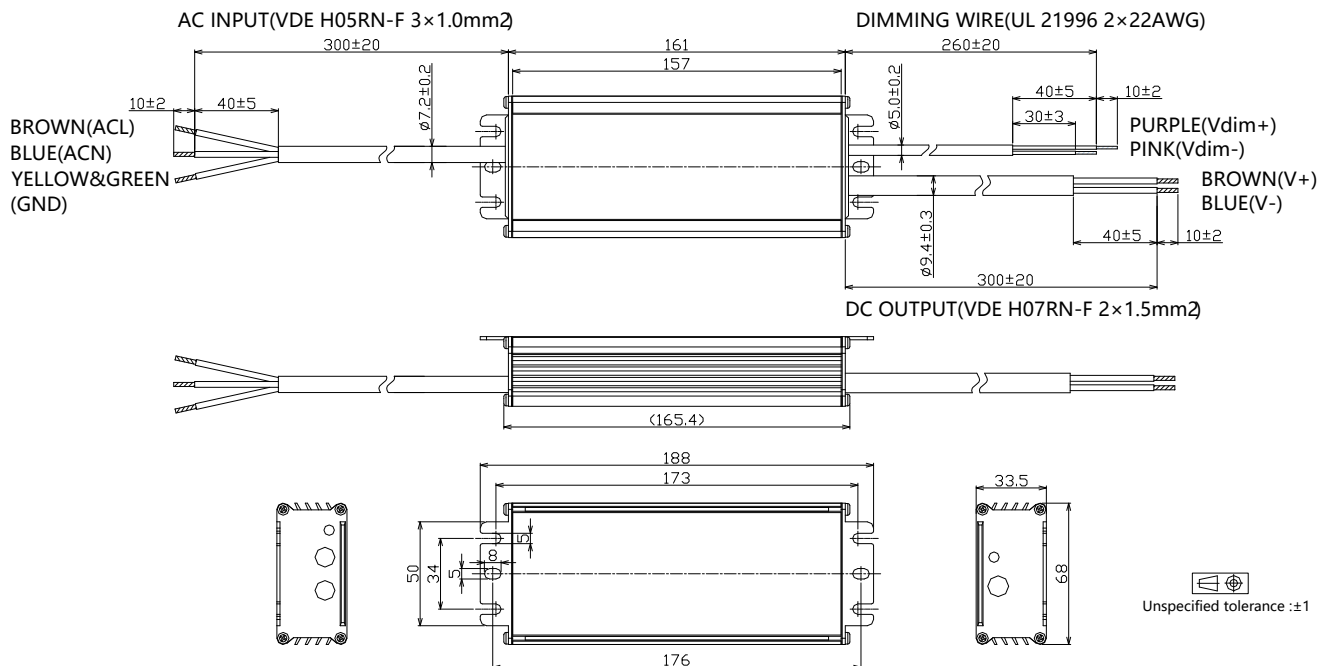


96W, 100-277Vac Input Constant Voltage LED Driver

- BLD-096-V024/V048-DNS (VDE Cable)

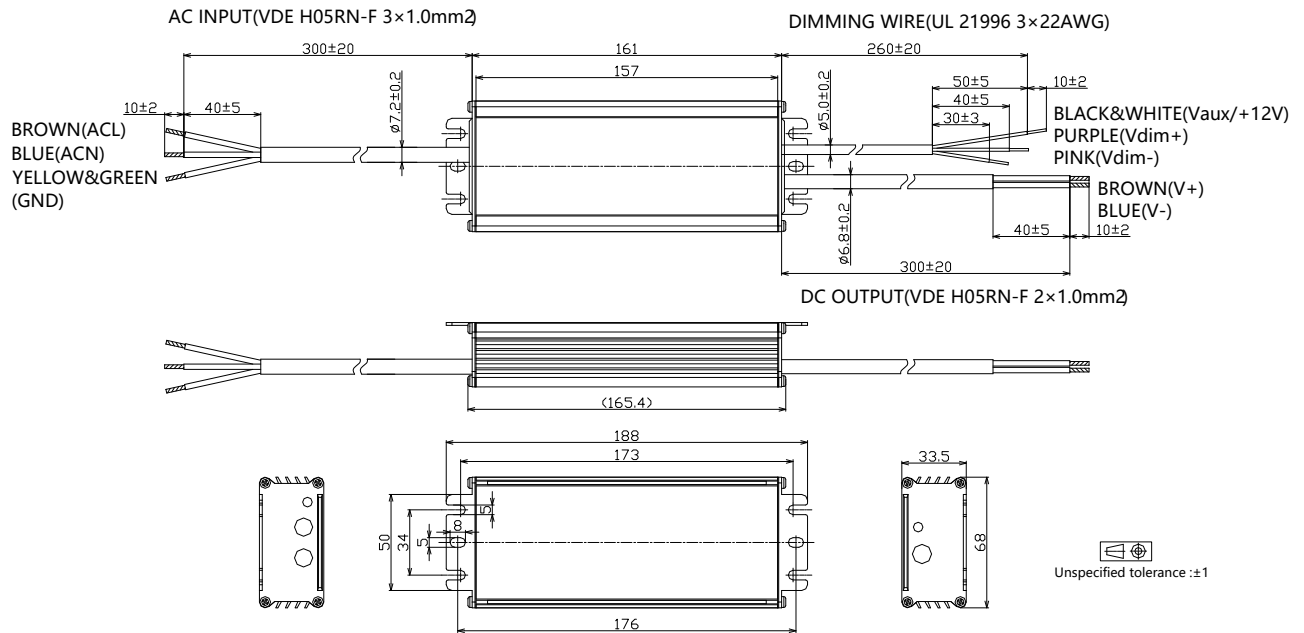


- BLD-096-V012-DNS (VDE Cable)

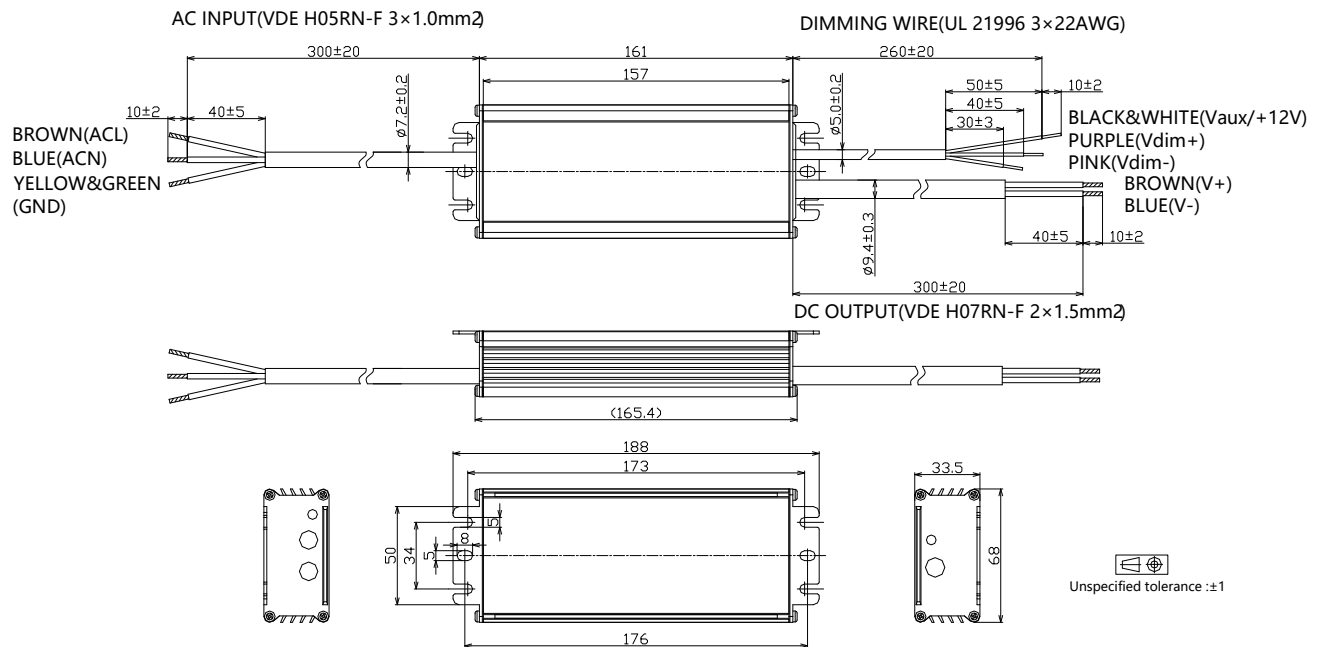


96W, 100-277Vac Input Constant Voltage LED Driver

- BLD-096-V024/V048-ENS (VDE Cable)

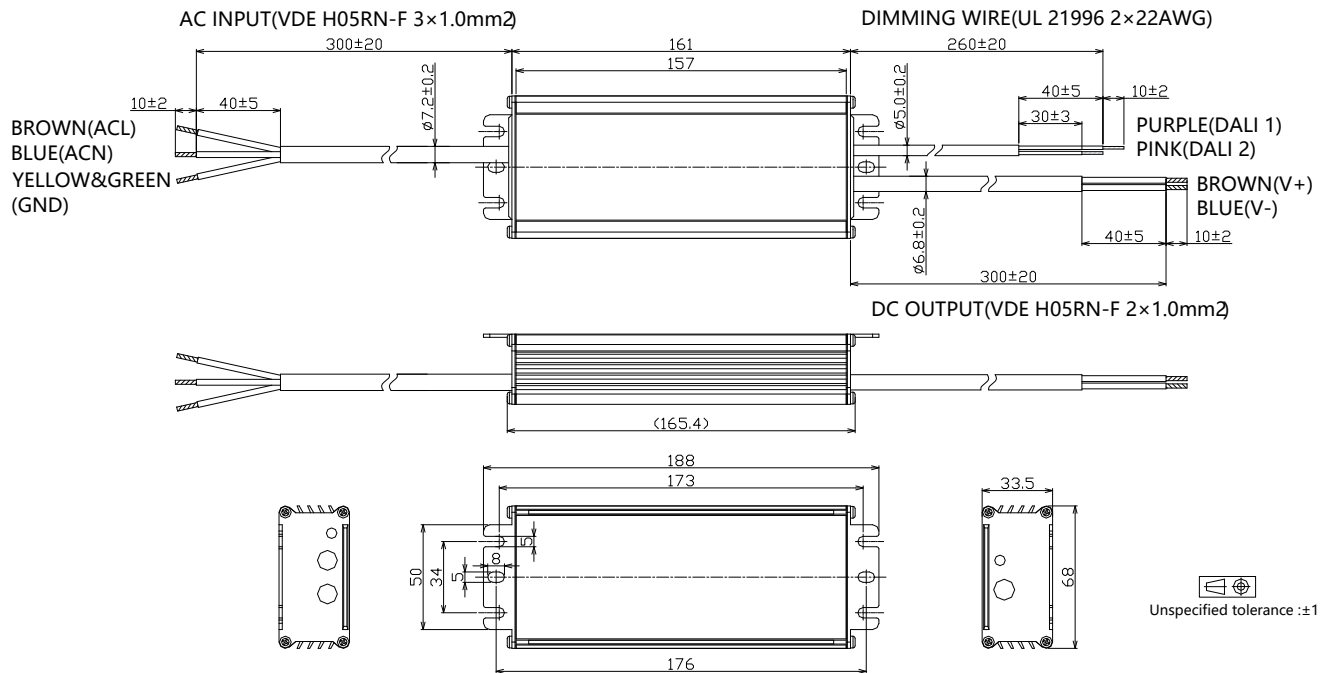


- BLD-096-V012-ENS (VDE Cable)

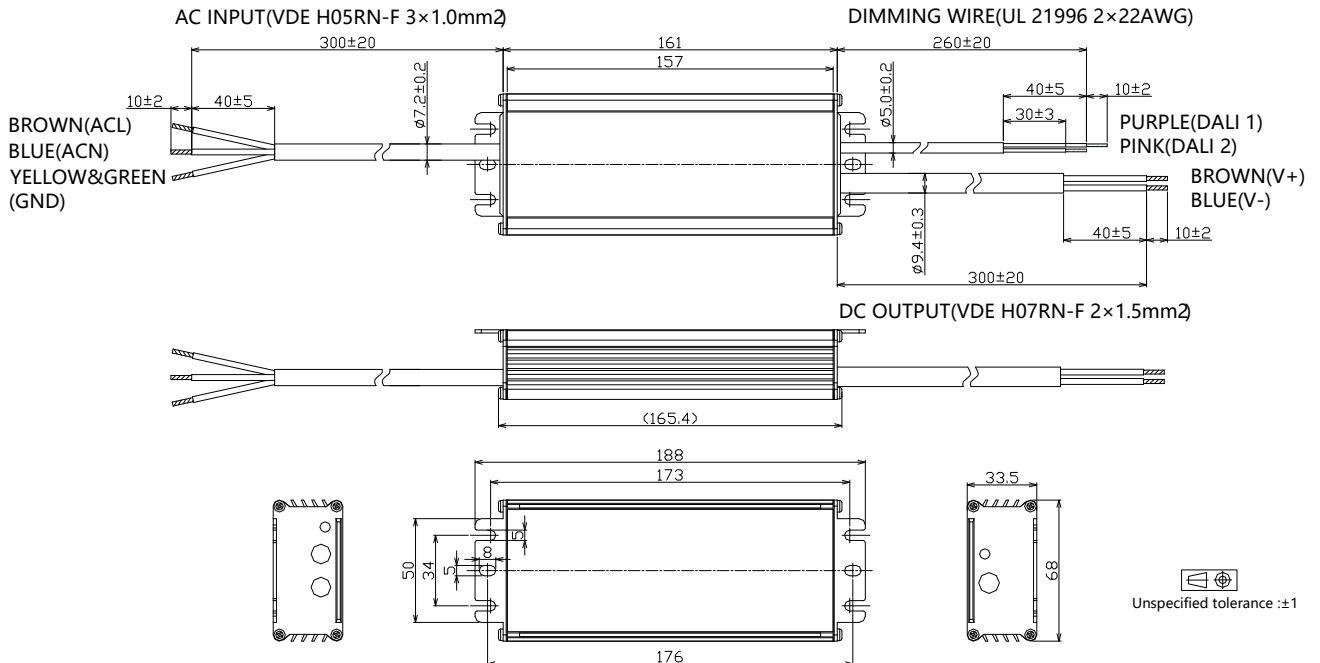


96W, 100-277Vac Input Constant Voltage LED Driver

- BLD-096-V024/V048-ANS (VDE Cable)

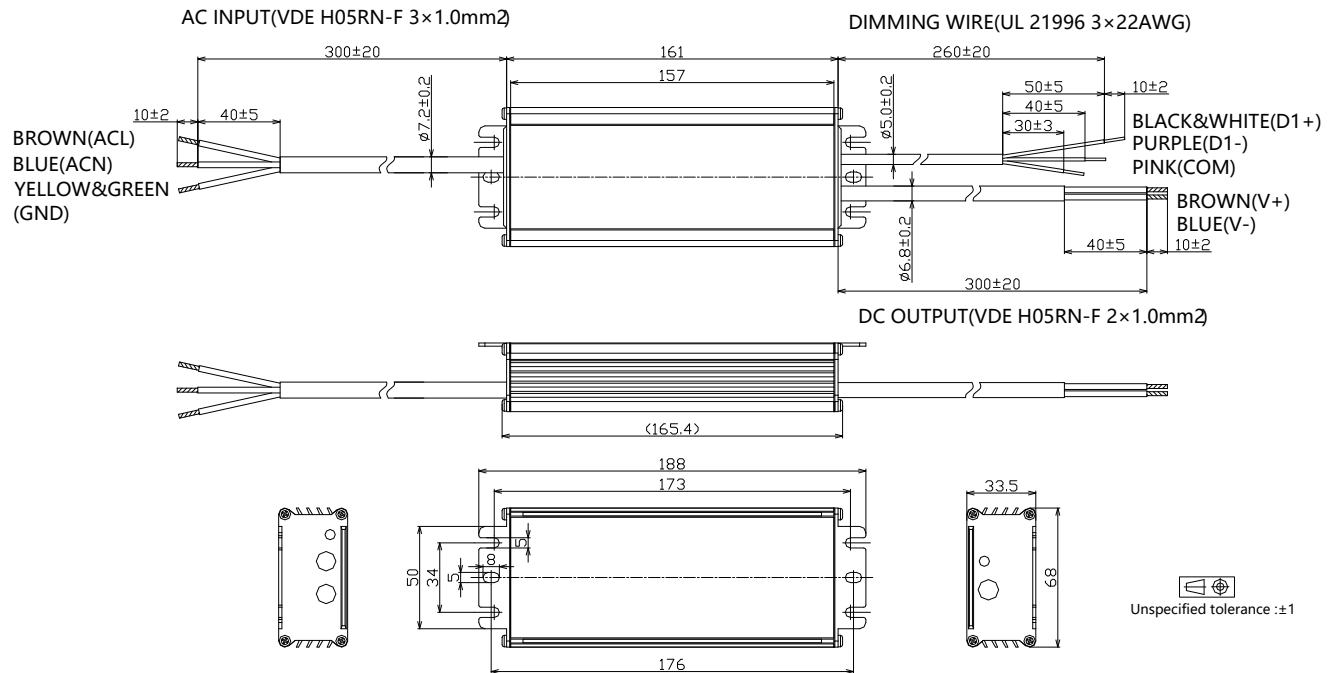


- BLD-096-V012-ANS (VDE Cable)

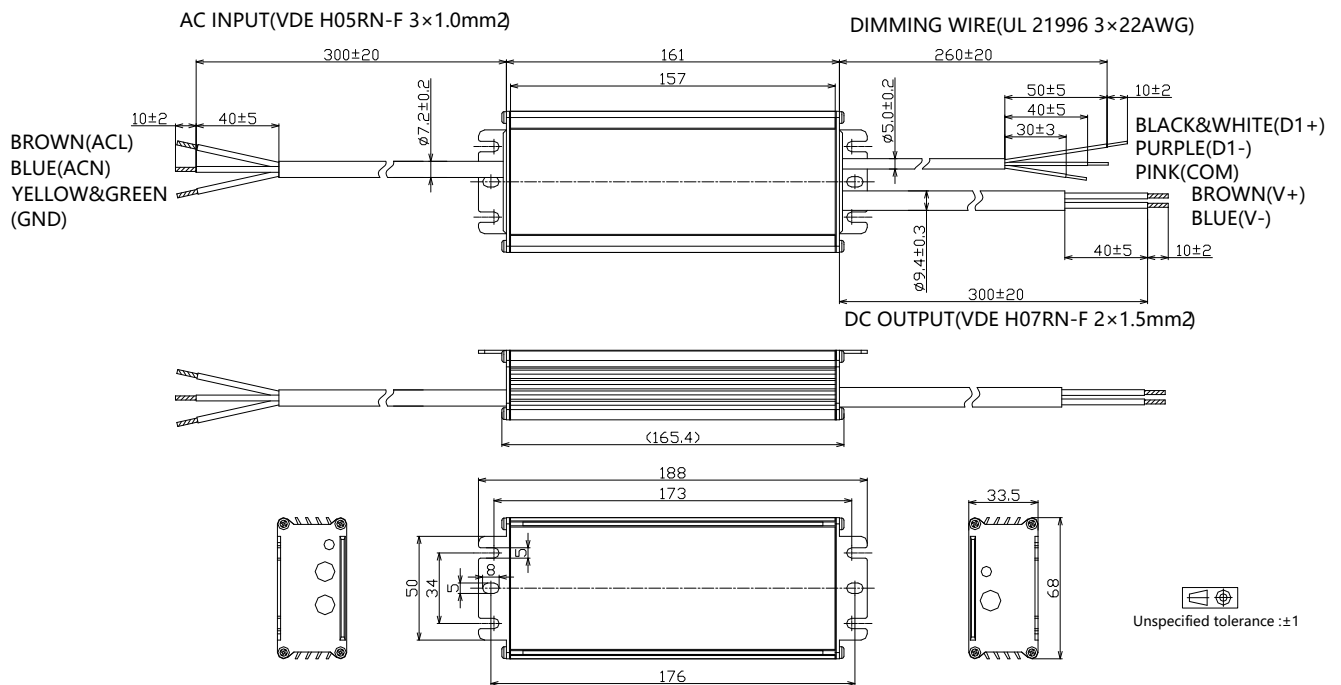


96W, 100-277Vac Input Constant Voltage LED Driver

- BLD-096-V024/V048-MRS (VDE Cable)



- BLD-096-V012-MRS (VDE Cable)



■ Revision History

Revision	Date	Contents
G	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