

Constant Voltage LED Driver

50W | 100-277Vac Input

- Supply Voltage: 90-305Vac or 127-420Vdc
- Great Surge Immunity 10kV
- PWM Output Frequency >1kHz
- 100,000 Hour Life @ Tc=75° C
- 0-10V / PWM / DALI (optional) Dimmable
- 2% Minimum Dimming Output
- Dim Off with 0.5W Standby
- 12 V 300 mA 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



Application

- Strip lights, Landscape lights, Bay lights, Street lights, Tunnel lights, Flood lights

Model List

Model Number	Input Voltage Range	Output Power	Output voltage	Output Current Min	Output Current Max	Certification
BLD-050-V012-XYZ	90 ~ 305 Vac	50W	12V	0	4.2A	UL/FCC/CB/ENEC/CCC
BLD-050-V024-XYZ	90 ~ 305 Vac	50W	24V	0	2.1A	UL/FCC/CB/ENEC/CCC
BLD-050-V048-XYZ	90 ~ 305 Vac	50W	48V	0	1.1A	UL/FCC/CB/ENEC/CCC

XY	Dimming Method	Programmable	12Vaux	Dim-off
NN	-	-	-	-
DN	0-10V	-	-	✓
EN	0-10V	-	✓	✓
AN	DALI	-	-	✓

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

BLD-050-V Series

Technical Data

Input Voltage	90~305Vac or 127V-420Vdc
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	0.58 Amax@120Vac & Full-Load, 0.31Amax@220Vac & Full-Load
Inrush Current	65A peak, 1.2ms duration, <0.25A2s@230Vac, Cold Start 70A peak, 1.3ms duration, <0. 5A2s@277Vac, Cold Start
Leakage Current	1mA max @277Vac 60Hz, UL8750,0.75mAmax @075Vac 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
Current Accuracy	±3%Vo
Setup Time	1.2s max
Overshoot	10% Vo, max.
Output Over Voltage	120% Io, 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 $T_c \leq 70 \pm 10^\circ\text{C}$
Operating Temperature	-40°C – +70°C, 10%RH, 100%RH
Storage Temperature	-40°C – +85°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. 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)
	131.0x67.5x33.5 by mm (body), 158.0x67.5x33.5 by mm (endcaps included)
Net Weight	650g
Packing	25pcs/Carton/17.3kg, 490x370x230mm

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

* marked items are optional and contact with sales people to get the functions.

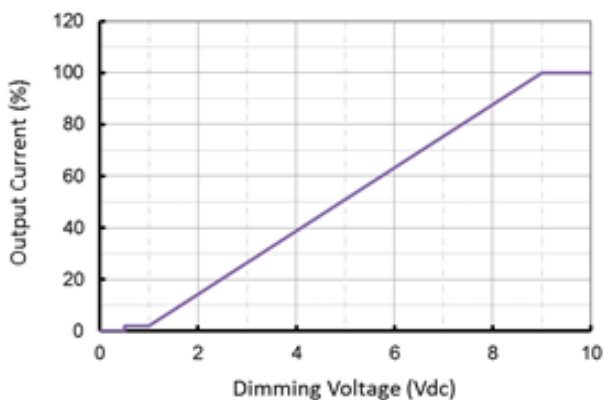
BLD-050-V Series

Dimming

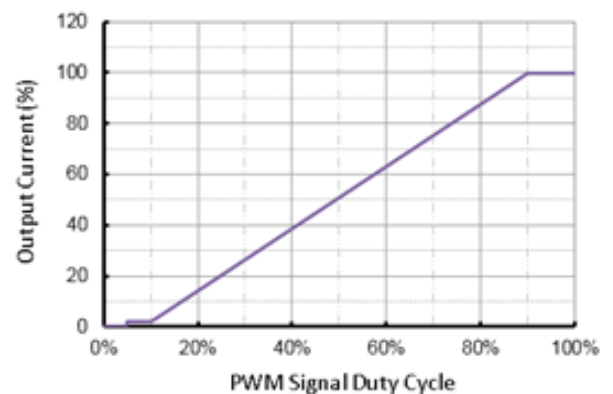
Parameter	Min.	Typ.	Max.
Vdim Sourcing Current	200uA	300uA	450uA
Vdim Allowed Input Voltage	-20 V		20 V
0-10V Dimming Range	2% (Vdim=1V)	Linear	100% (Vdim=9~10V)
PWM Dimming Range	2% (Duty=10%)	Linear	100% (Duty=90-100%)
Dim off threshold	0.4V or 4%	0.5V or 5%	0.6V or 6%
Dim on threshold	0.6V or 6%	0.7V or 7%	0.8V or 8%
PWM High	3V		10V
PWM Low	0V		0.6V
PWM Frequency	300Hz		2kHz
External PWM Controller Current Sinking Capability	300uA		
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

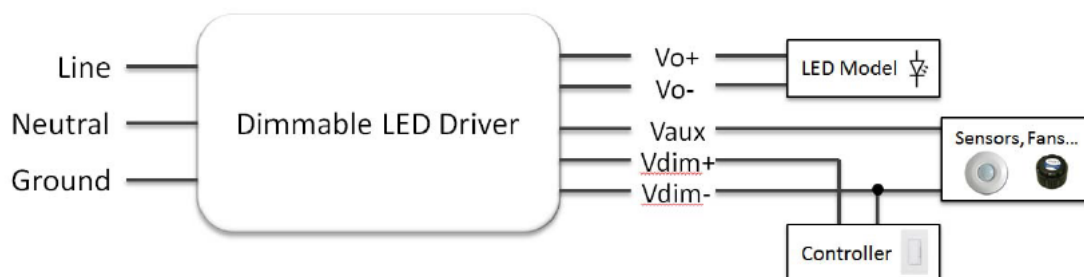
0-10V Dimming Curve



PWM Dimming Curve



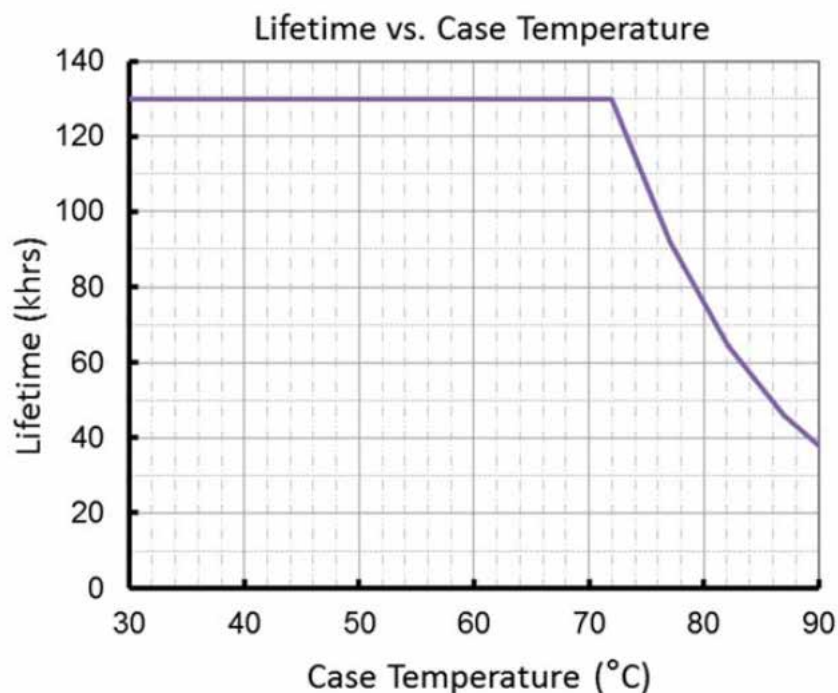
Dimming Wiring



Safety/EMC Compliance

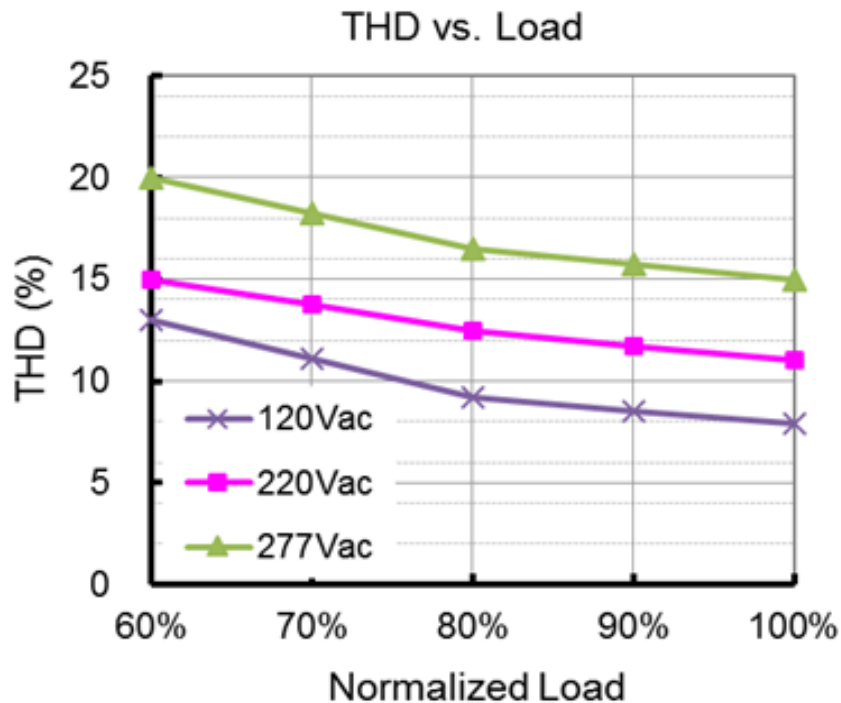
Safety Standard	Description
UL8750	Light emitting diode(LED) equipment for use in lighting products
UL1310	Class 2 power units
IEC 61347-1	Lamp control gear Part 1: general and safety requirements
IEC 61347-2-13	Lamp control gear Part 2-13: particular requirement for d.c. or a.c. supplied electronic 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

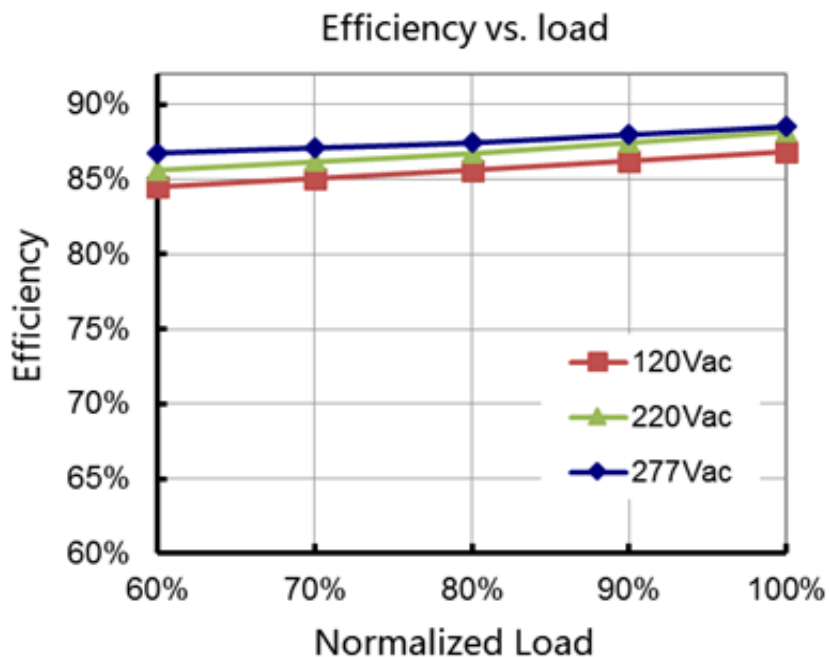


(End of Life: Maximum Failure Rate=10%)

THD vs. Load



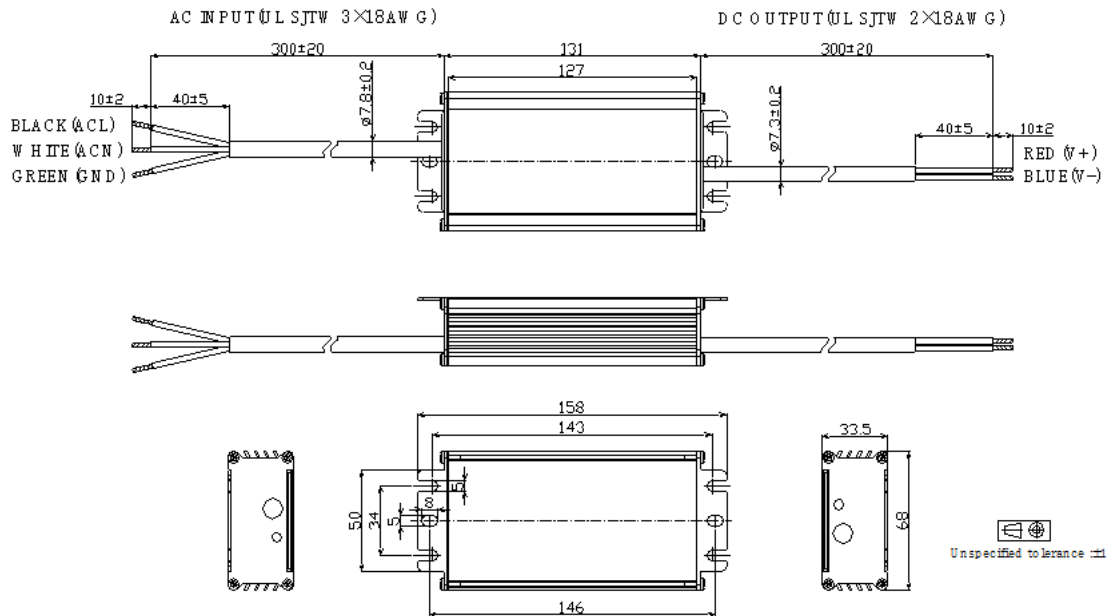
■ Efficiency vs. Load (24V Model)



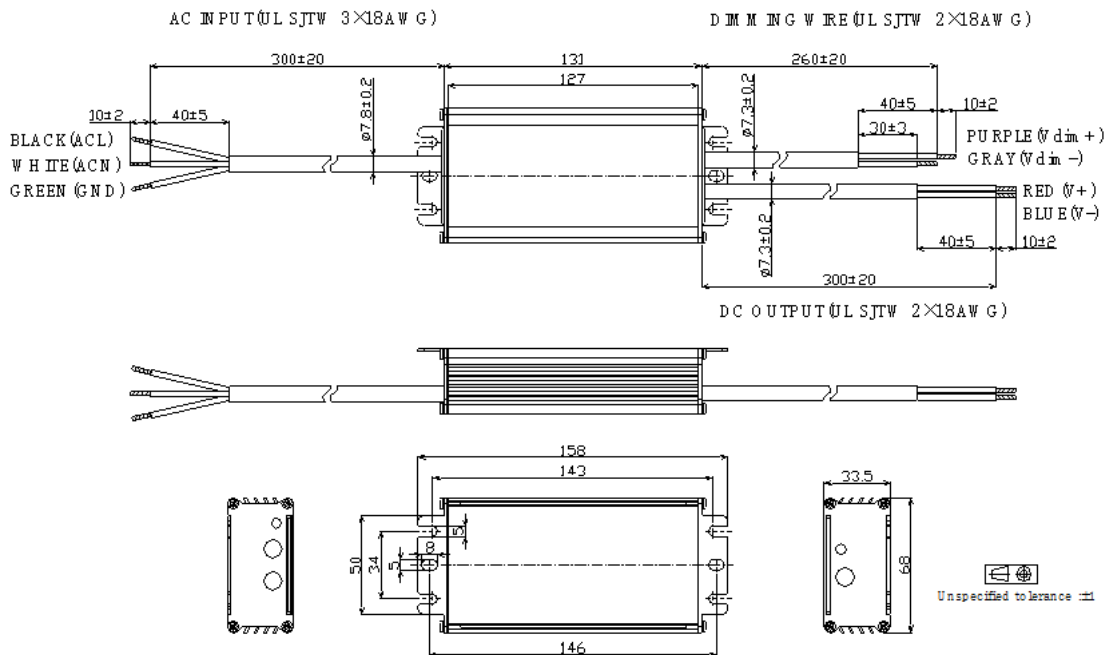
BLD-050-V Series

Mechanical Design

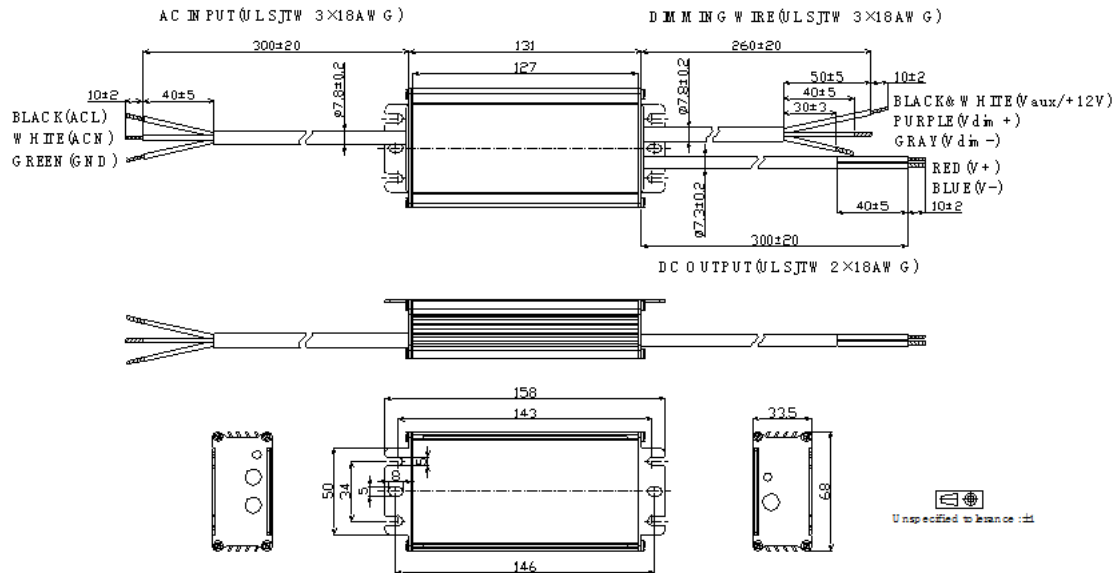
- BLD-050-Vxxx-NNU (UL Cable)



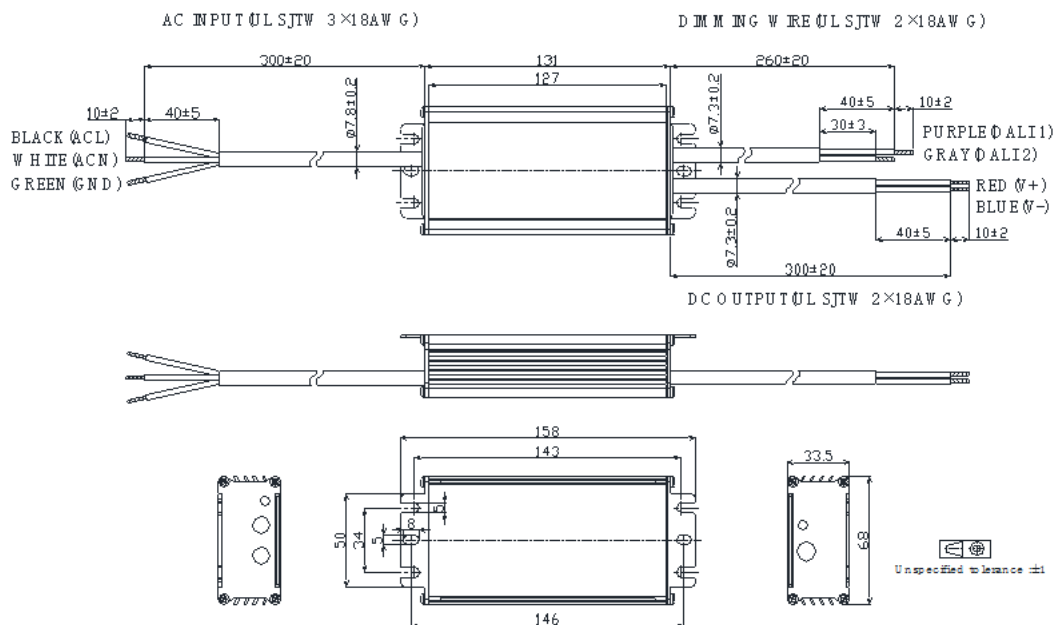
- BLD-050-Vxxx-DNU (UL Cable)



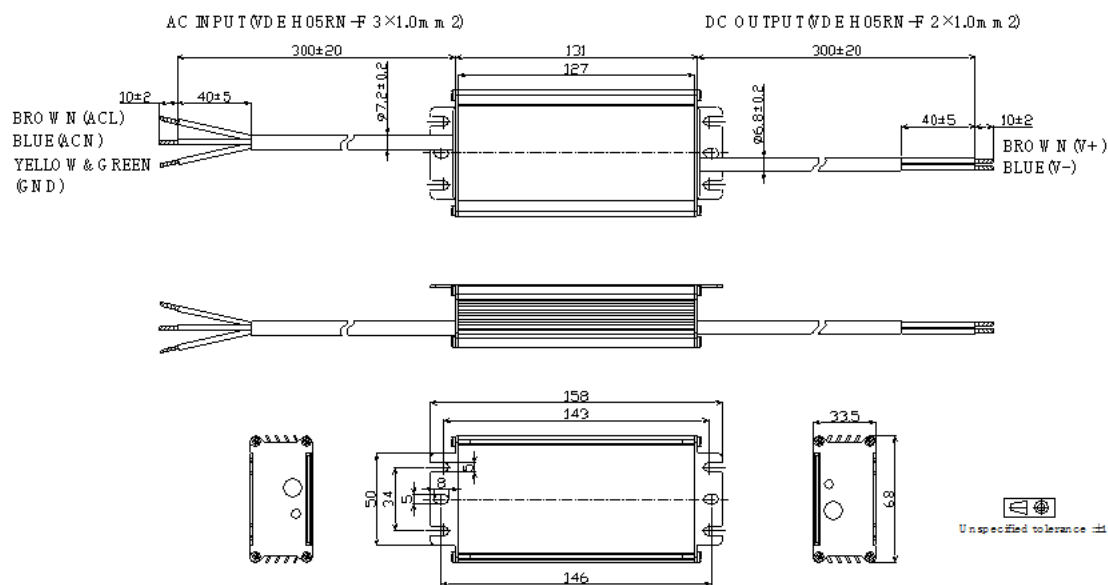
- BLD-050-Vxxx-ENU (UL Cable)



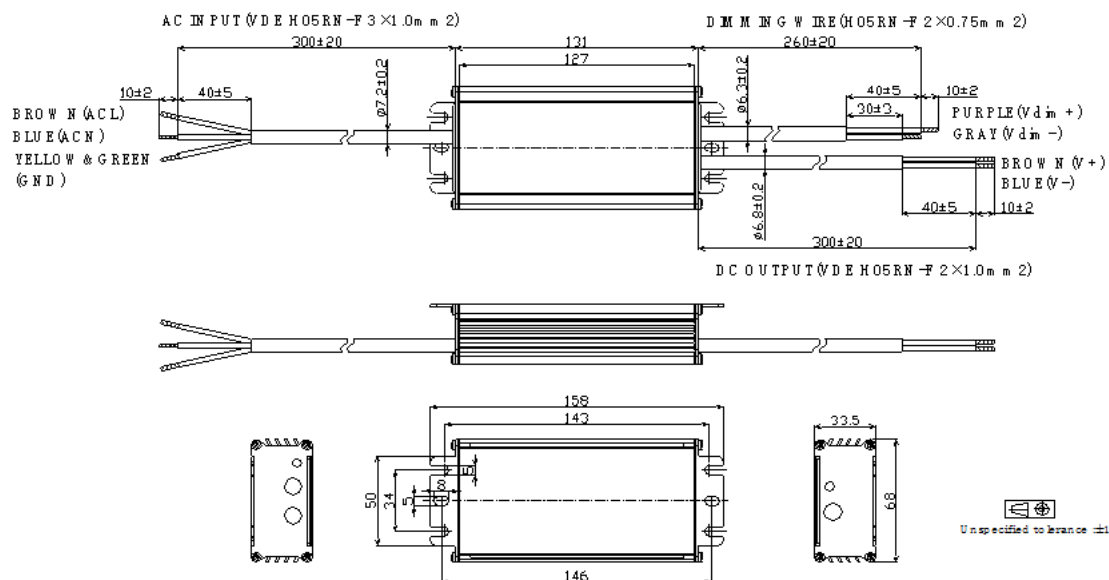
- BLD-050-Vxxx-ANU (UL Cable)



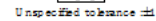
- BLD-050-Vxxx-NNS (VDE Cable)



- BLD-050-Vxxx-DNS (VDE Cable)



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