Product Datasheet

The global certified BLD-400-C is a dual stage extremely wide input smart LED driver with **independent multi-channel** outputs. 10kV surge protection level, 100khour long life and 7-year warranty provide high confidence to luminaire users. All around protections including digital OTP with auto-recovery secure 24hour non-stop operation for luminaires.

☑ Stadium ☑ Flood ☑ Harbor

Features

- Absolute Supply Voltage: 108~305Vac
- Great Surge Immunity 10kV
- 93% Efficiency Max.
- Low Inrush Current
- 100,000Hour Life @ Tc=75℃
- 7 Year Warranty @ Tc<=75℃
- Output Current Programmability
- Live Broadcasting Level Low Ripple
- DMX/RDM/DALI2.0 Dimmable with Independent Control
- Fast Dynamic Response
- DALI Part 150, 250 Support
- DALI Type 6 (SimplySnap Compatible)
- IP67/IP66 Rated Waterproof
- UL Class 2 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	Certification
BLD-400-C10A-XYZ-NNNNS4	108-305Vac	P1: 100W P2: 100W P3: 100W P4: 100W	24-53Vdc	1.8A	2.5A	FCC/CE
BLD-400-C360-XYZ-NNNNS4	108-305Vac	P1: 100W P2: 100W P3: 100W P4: 100W	67-167Vdc	0.6A	0.9A	FCC/CE

XY=	Dimming Method	Programmable	Vaux	Dim-off
AN	DALI2.0/DT6	Cable	24V 150mA	√
MN	DMX512 + RDM	Cable	-	√

Z=	U	V	S	W	D
Input Cable	3 pin UL cable with ground	3 pin UL cable with ground	3 pin VDE cable with ground	3 pin VDE cable with ground	2 pin VDE cable without ground
Output Cable	5 pin UL cable without Ground	6 pin UL cable with ground	5 pin VDE cable without ground	6 pin VDE cable with ground	5 pin VDE cable without ground
Certified Input Voltage Range	UL Listed Class P 120-277Vac	UL Listed Class P 120-277Vac	Class I 120-277Vac	Class I 120-277Vac	Class II 120-277Vac

Technical Data

Input Voltage	108~305Vac
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	3.6Amax@120Vac & Full-Load, 2.0Amax@220Vac & Full-Load
Inrush Current	See Inrush Current Section
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
Current Accuracy	±2%Io
Ripple Current	Ipk-pk: low frequency (<=3kHz) 2%Io max, high frequency (>3kHz) 15%Io max
TLA (Temporal Light Artifacts)	PstLM<0.02, SVM<0.05
Percent Flicker	1% max. Broadcasting level, GB/T-38539-2020
Setup Time	1.2s max
Overshoot	10% Io max & LED Load
Output Over Voltage	120% Vomax, 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	≥320,000 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	309x 90 x 41.5 by mm (body), 336 x 90 x 41.5 by mm (endcaps included)
Net Weight	2000g
Packing	See Package Information Section in the datasheet

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

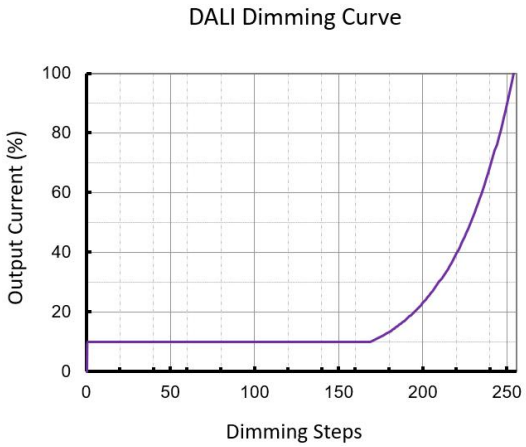
Safety/EMC Compliance

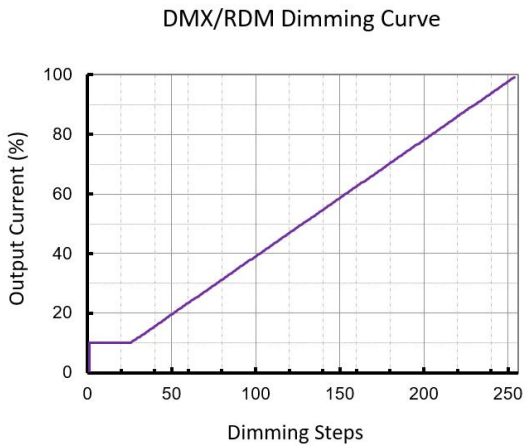
Safety Standard	Description
UL8750	Light emitting diode(LED) equipment for use in lighting products
UL1012	Power units other than class 2
IEC 61347-1	Lamp control gear Part 1: general and safety requirements
IEC 61347-2-13	Lamp control gear Part 2-13: particular requirement for d.c. or a.c. supplied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

DALI Interface Standard	IEC62386, part 101,102,207,150,250		
DA1,DA2 High Level	9.5	16	22.5
DA1,DA2 Low Level	-6.5	0	6.5
DA1,DA2 Current	0		2mA
Default Memory Bank 1 CCT Value (Address 0x22 Definition)	CH1: Red, 0x01, CH2: Green, 0x02, CH3: Blue, 0x03, CH4: White, 0x05 (SimplySnap Compatible)		
DMX+ & DMX- Voltage	-6V		6V
DMX to Ground Resistance	25Mohm		
Logic 0/1 (DMX+ to DMX-) Threshold		0.2V	
Communication Baud Rate		250kbps	
Fast Dimming On-Off Transition		50ms	
Fast Dimming 10-100% Io Transition		30ms	
Flashing Speed	-	-	44fps

- DALI and DMX dimming curves



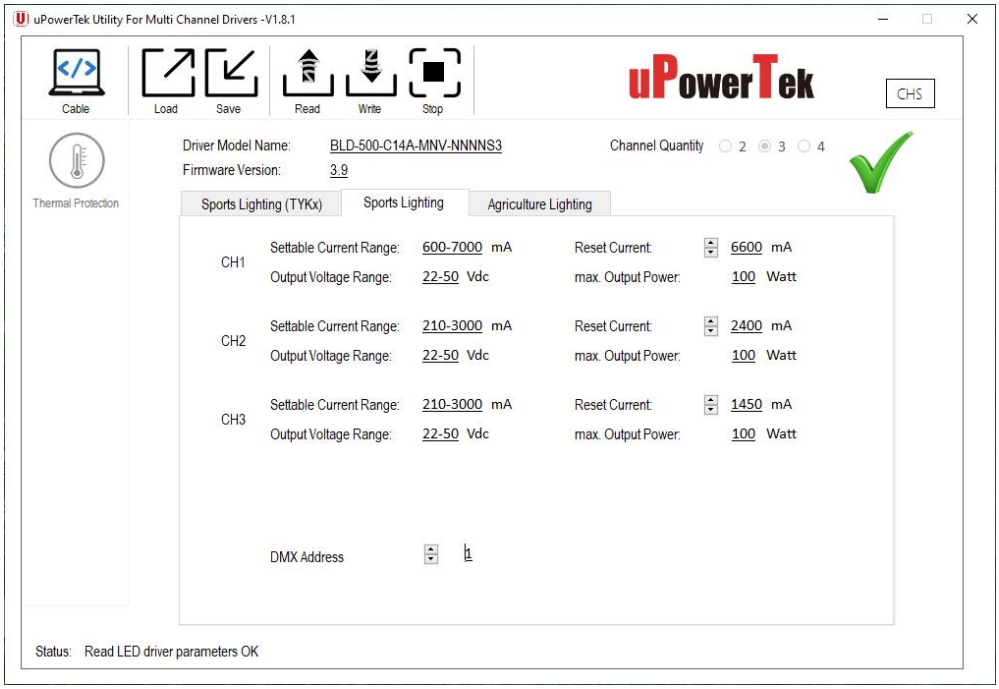


Note: Both DALI and DMX dimming curves can be customized to be linear or logarithmic as default.

Programming

- **Programmable Functions**

  uPowerTek LED drivers offer a range of configurable functions to meet specific lighting requirements. The Output Current, Dimming Mode and DMX addressing can be set as basic programming functions. .

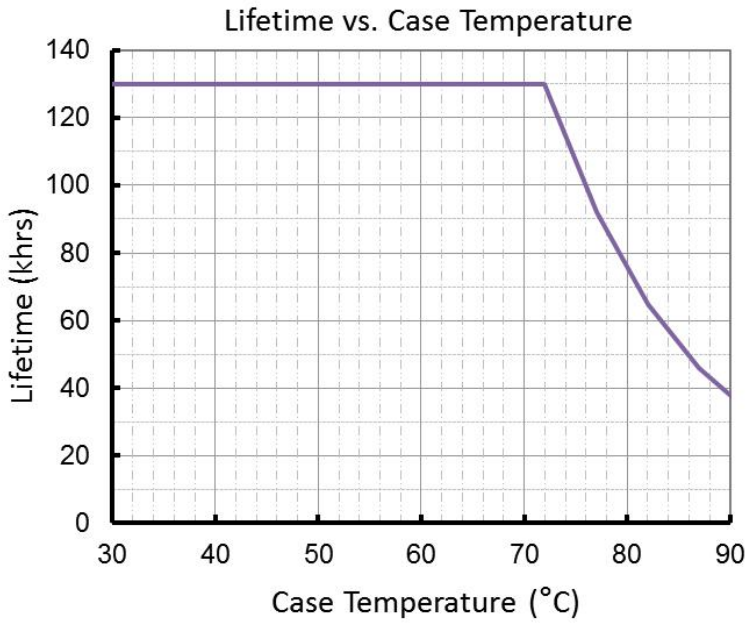


uPowreTek Programming Software Interface

- **Connection Guide**

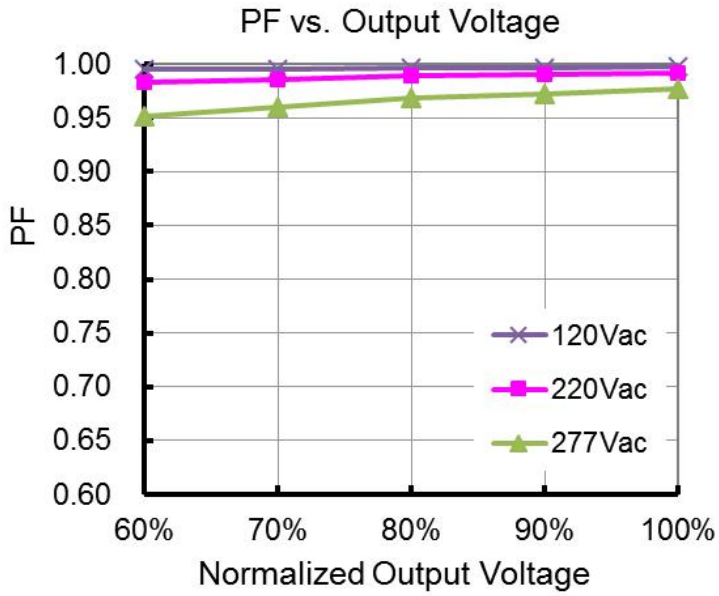
  This guide provides simple connection diagrams to help users understand the programming system. For more detailed operating instructions, including step-by-step procedures and additional configurations, please visit our website. You can download the comprehensive user manual and necessary software from the following link: https://www.upowertek.com/download-2/.

Lifetime vs. Case Temperature

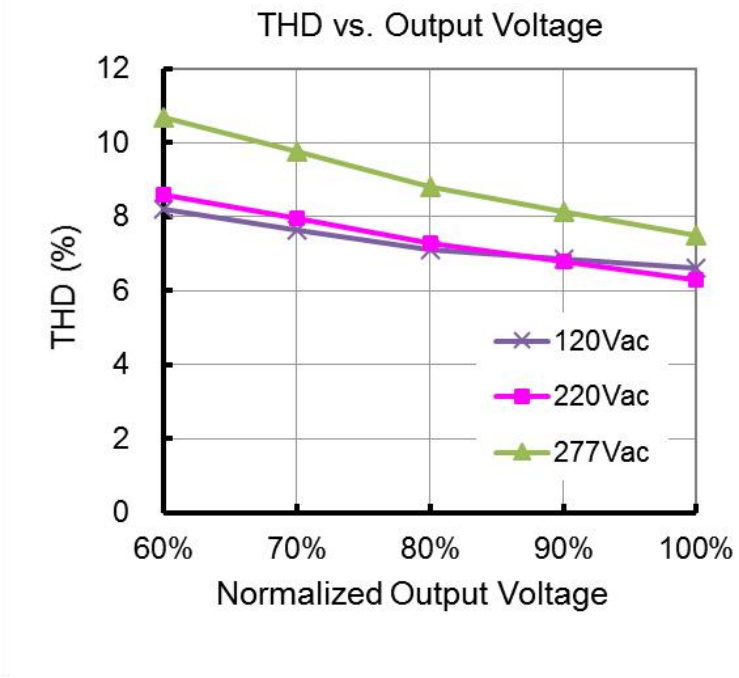


(End of Life: Maximum Failure Rate=10%)

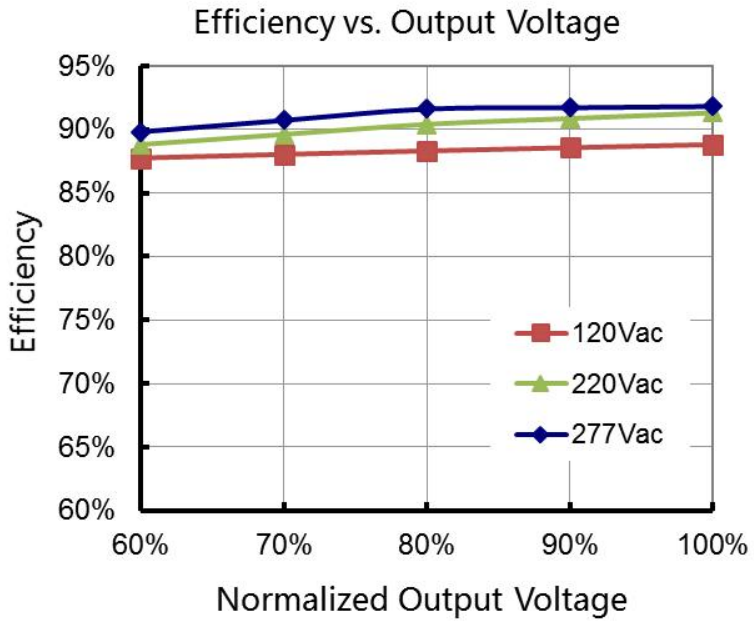
Power Factor vs. Load



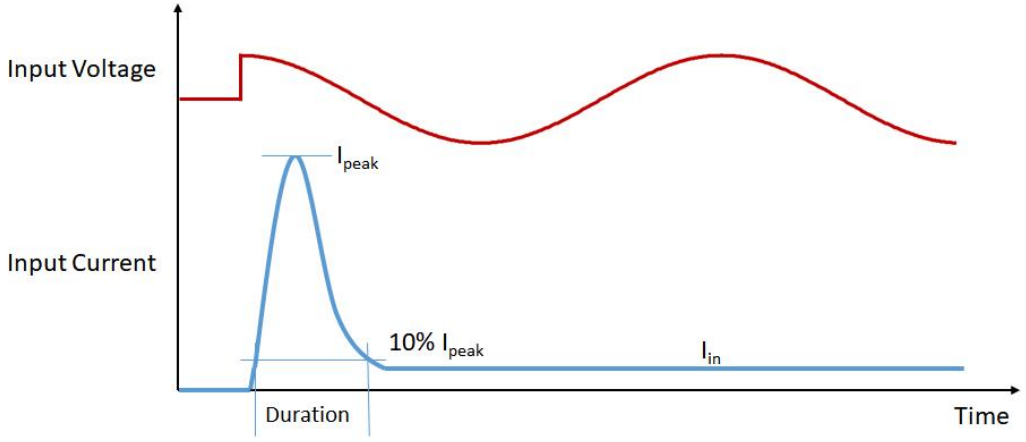
■ THD vs. Load



■ Efficiency vs. Load



Inrush Current



Input Voltage	I_{peak}	Duration
120Vac	18.0A	5.32mS
220Vac	30.8A	5.24mS
277Vac	42.2A	5.08mS

- MCB Suggestion

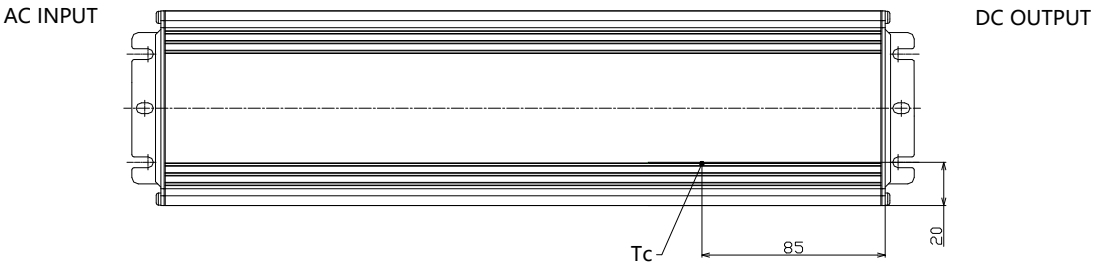
Type	B10	B16	B25	B32	C10	C16	C25	C32	D10	D16	D25	D32
Driver Quantity	1	2	3	4	2	3	5	7	3	5	8	10

Note: Calculated with MCB S200 series manufactured by ABB at 220Vac Input condition

Dielectric Strength

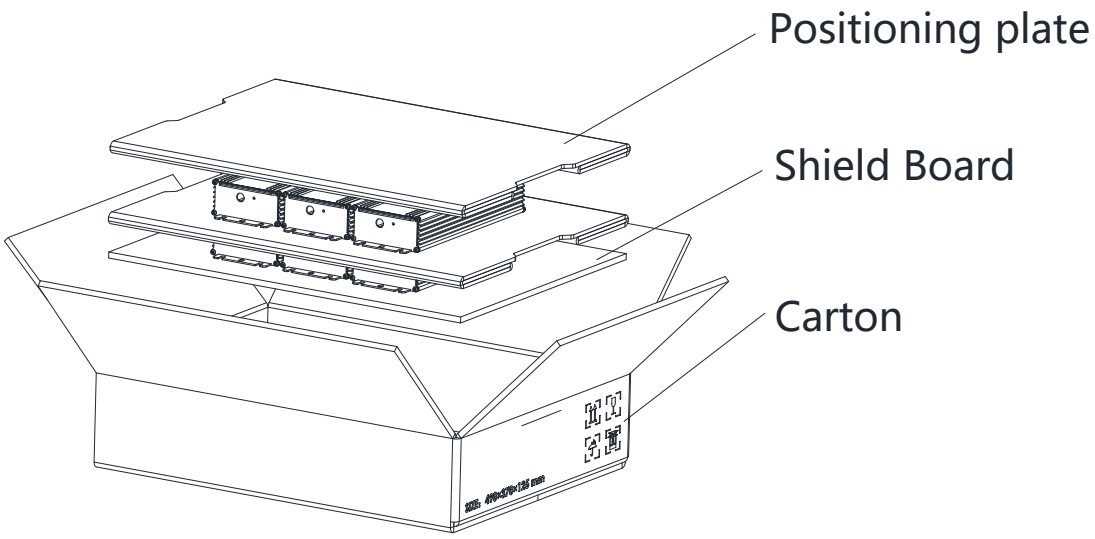
Unit: Vac	Input	Output	Dimming	Case
Input	-	3750	3750	1554
Output	3750	-	1554	1554
Dimming	3750	1554	-	1554
Case	1554	1554	1554	-

Tc Point



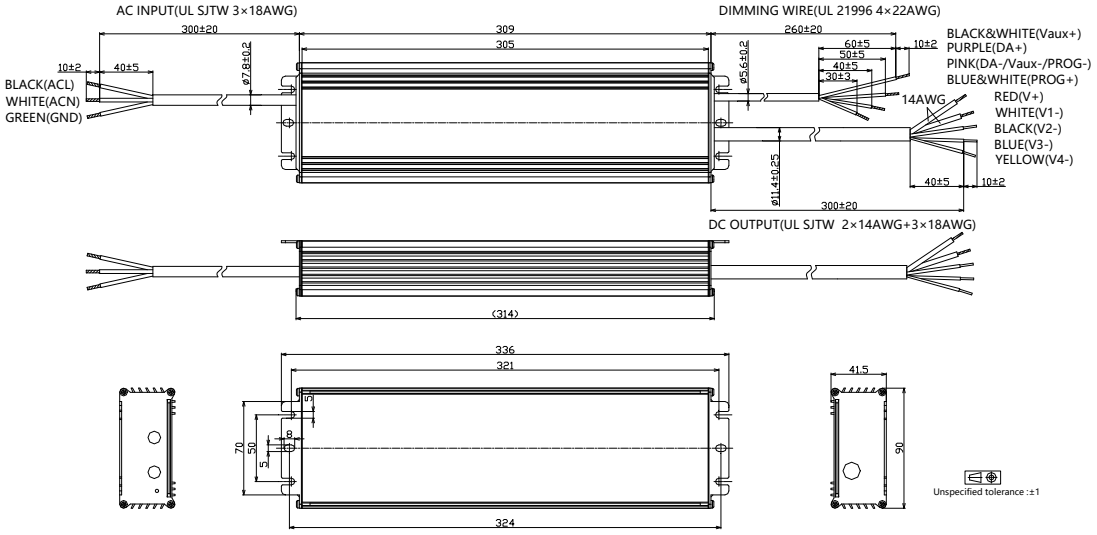
Packaging Information

Typical Carton Dimension(L×W×H)	490×370×125 mm
Positioning plate	2pcs/carton
Shield Board	1pcs/carton
LED Drivers/LED	6pcs/carton
Net Weight	12.0 kg/carton
Gross Weight	12.9 kg/carton

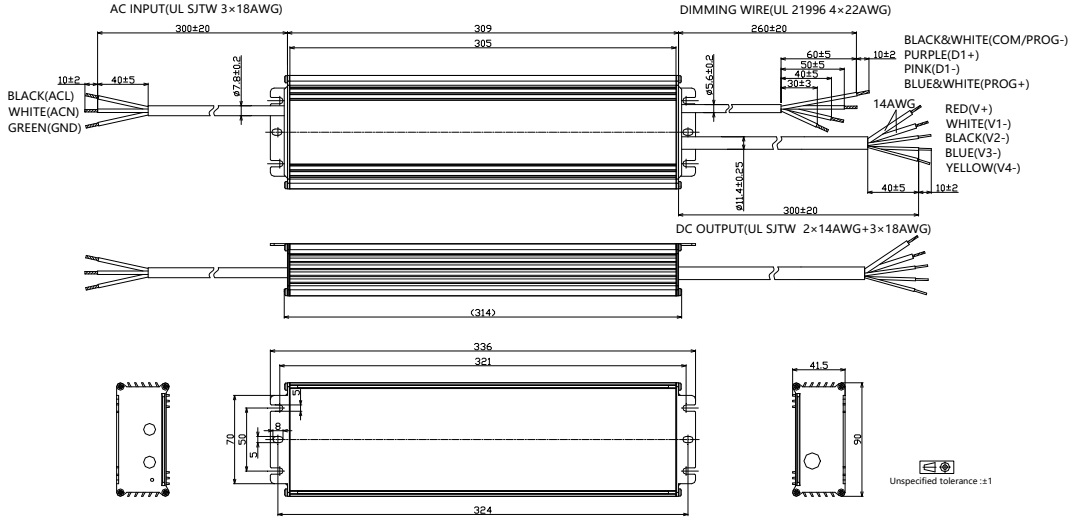


Mechanical Design

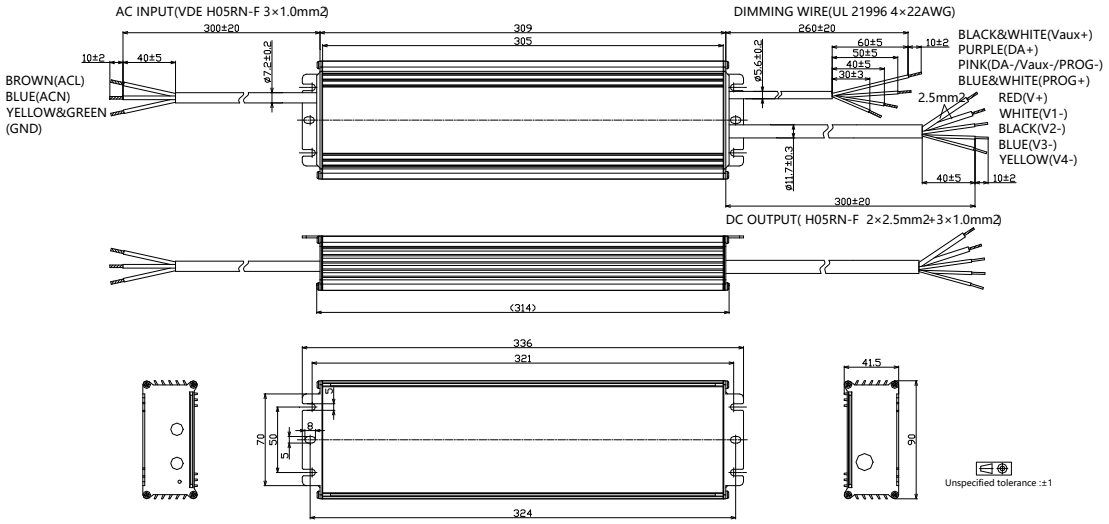
- BLD-400-Cxxx-ANU-NNNNS4



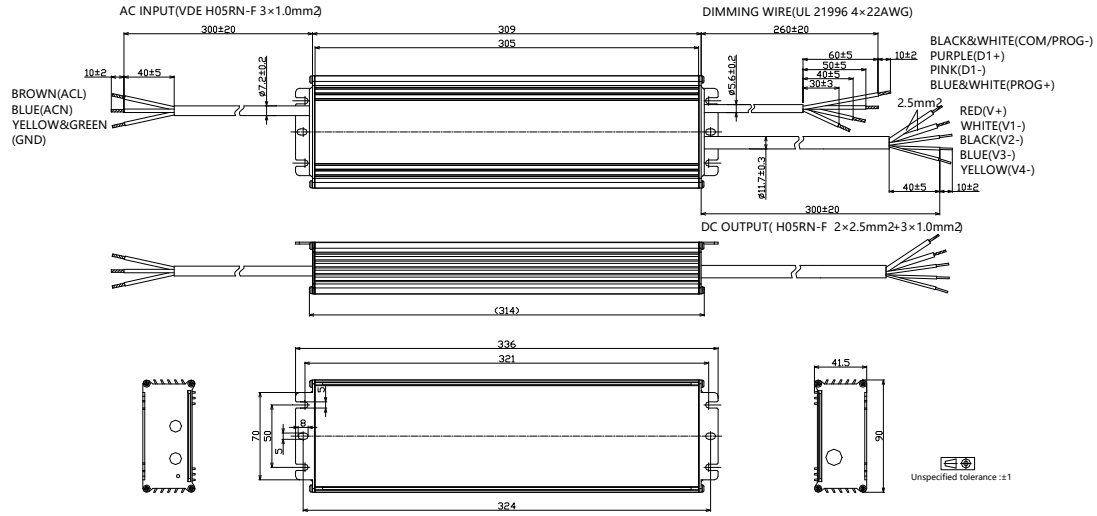
- BLD-400-Cxxx-MNU-NNNNS4



- BLD-400-Cxxx-ANS-NNNNS4



- BLD-400-Cxxx-MNS-NNNNS4



Output Operation Range

Model	Typical Set Output Current (mA)	Max Output Power (W) /Each Channel	Output Voltage Min (V)	Output Voltage Max(V)	Minimum Dimming Current (mA)
C10A	2500	400/100	24	40	250
	2400	400/100	25	42	240
	2300	400/100	26	43	230
	2200	400/100	27	45	220
	2100	400/100	29	48	210
	2000	400/100	30	50	200
	1900	400/100	32	53	190
	1800	380/95	32	53	190
	1700	356/89	32	53	190
	1600	332/84	32	53	190
	…	…	…	…	…
	190	40/10	32	53	190

Model	Typical Set Output Current (mA)	Max Output Power (W) /Each Channel	Output Voltage Min (V)	Output Voltage Max(V)	Minimum Dimming Current (mA)
C360	900	400/100	67	111	90
	850	400/100	71	118	85
	800	400/100	75	125	80
	750	400/100	80	133	75
	700	400/100	86	143	70
	650	400/100	92	154	65
	600	400/100	100	167	60
	550	368/92	100	167	60
	500	332/83	100	167	60
	450	300/75	100	167	60
	…	…	…	…	…
	60	40/10	100	167	60

Revision History

Revision	Date	Contents
A	2024-11-16	1. Product release