

# NFC Programmable LED Driver

**320W | 100-277Vac Input**

- Supply Voltage: 90-305Vac or 127-420Vdc
- Great Surge Immunity 10kV
- -55°C Cold Ambient Startup (Optional)
- 100,000Hour Life @ Tc=75° C
- Airset™ NFC Programmability
- +/-2% Output Current Accuracy (Programmable Model)
- 0-10V/PWM/Time/DALI /DMX (Optional) Dimmable
- Dim Off with 0.5W Standby Power
- 12V 300mA Auxiliary Power to Power Controllers and Fans (Optional)
- Input Over Voltage Protection (Optional)
- UL Class P, ENEC/CB/CCC SELV Output
- Safety according to EN 61347-1, 61347-2-3, 61347-2-13, 62384



## Application

- Bay lights, Pole lights, Stadium lights

## Model List (See appendix for more details about the operation range)

Model Number	Input Voltage Range	Output Power	Output voltage	Full Power Settable Current Min.	Full Power Settable Current Max.	Certification
BLD-320-C140-XYZ	90 ~ 305 Vac	320W	137-305Vdc	1050mA	1400mA	UL/FCC/CB/ENEC/CCC
BLD-320-C210-XYZ	90 ~ 305 Vac	320W	91-229Vdc	1400mA	2100mA	UL/FCC/CB/ENEC/CCC
BLD-320-C420-XYZ	90 ~ 305 Vac	320W	46-114Vdc	2800mA	4200mA	UL/FCC/CB/ENEC/CCC
BLD-320-C700-XYZ	90 ~ 305 Vac	320W	27-64Vdc	5000mA	7000mA	UL/FCC/CB/ENEC/CCC

XY	Dimming Method	Programmable	12Vaux	Dim-off
NN	-	-	-	-
EN	0-10V	-	✓	✓
TR	Time	✓	-	-
ER	0-10V/PWM/Time	✓	✓	✓
AN	DALI	-	-	✓
AR*	DALI	✓	-	✓
MR	DMX	✓	-	✓

Z = U, UL cable with ground wire

S, VDE cable/Class I

D, VDE cable/Class II

\*= Optional - only on request

## BLD-320-C Series

### Technical Data

Input Voltage	90 305Vac or 127V-420Vdc
Input Frequency	47~63Hz
Power Factor	>0.95@60-100%load, refer to PF vs. Load curve
THD	<15%@60-100%load, refer to THD vs. Load curve
Input Current	2.9Amax@120Vac & Full-Load, 1.5Amax@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 @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
Current Accuracy	±5%lo
Ripple Current	lp-p:5%lo max
Setup Time	1.2s max
Overshoot	10% lo 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 $T_c \geq 105 \pm 10^\circ\text{C}$ ; Auto Recovery When $T_c \leq 70 \pm 10^\circ\text{C}$
Auxiliary Power (Vaux)	12V+/-5%, 300mA max
Operating Temperature	-40°C – +70°C, 10%RH, 100%RH (See Derating Curve for more details)
Storage Temperature	-40°C – +85°C 5%RH 100%RH
MTBF	≥280,000 hours, 75°C case temperature (MIL-HDBK-217F)
Lifetime	≥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	8.82x3.54x1.63 by inch (body), 9.88x3.54x1.63 by inch (endcaps included) 224 x 90 x 41.5 by mm (body), 251 x 90 x 41.5 by mm (endcaps included)
Net Weight	1600g
Packing	10pcs/Carton/19kg, 500x370x335mm

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.

**Safety/EMC Compliance**

<b>Safety Standard</b>	<b>Description</b>
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**

<b>Parameter</b>	<b>Min.</b>	<b>Typ.</b>	<b>Max.</b>
Vdim Sourcing Current	200uA	300uA	450uA
Vdim Allowed Input Voltage	-20 V		20 V
0-10V Dimming Range	10% (Vdim=1V)	Linear	100% (Vdim=9~10V)
PWM Dimming Range	10% (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

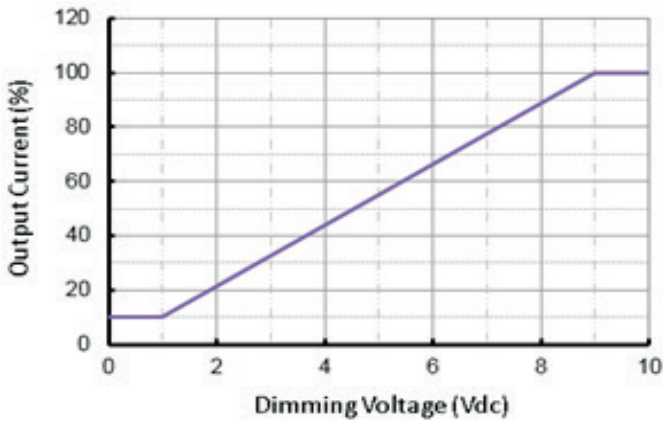
The default DALI model is programmable, contact sales for non-programmable and cost effective models.

# BLD-320-C Series

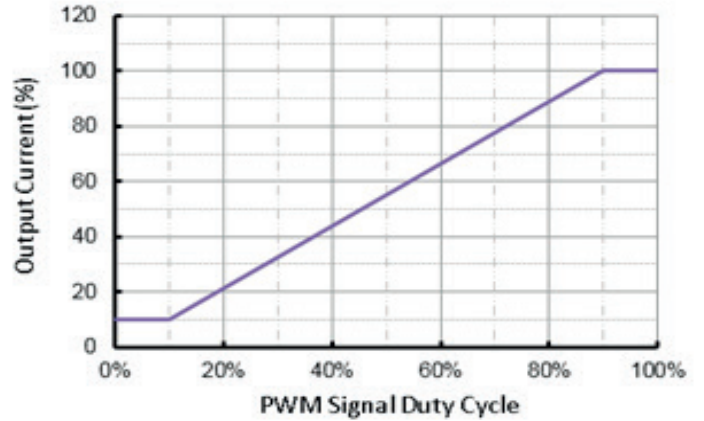
## Dimming Curve

### a- Without dim-off

0-10V Dimming Curve

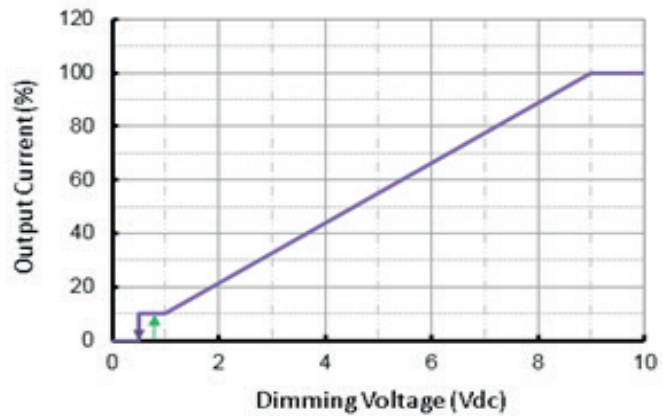


PWM Dimming Curve

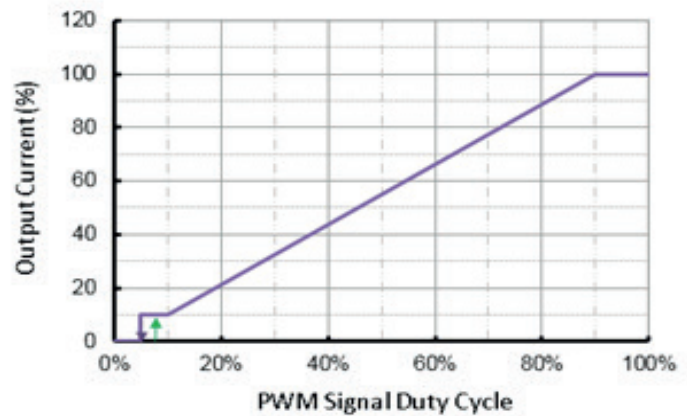


### b. With dim-off

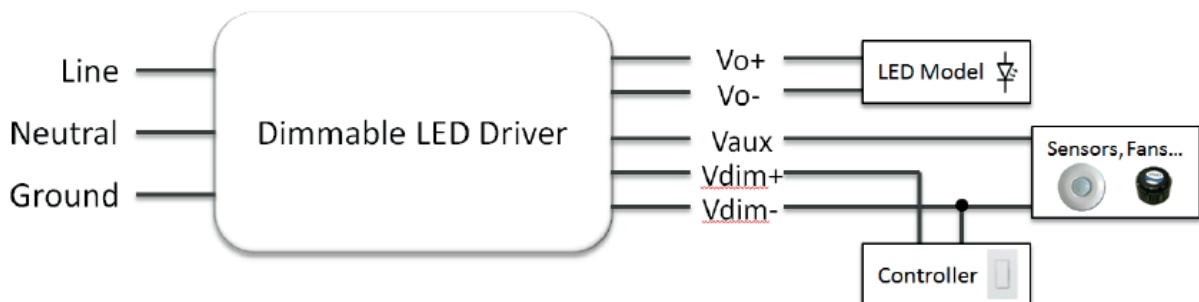
0-10V Dimming Curve



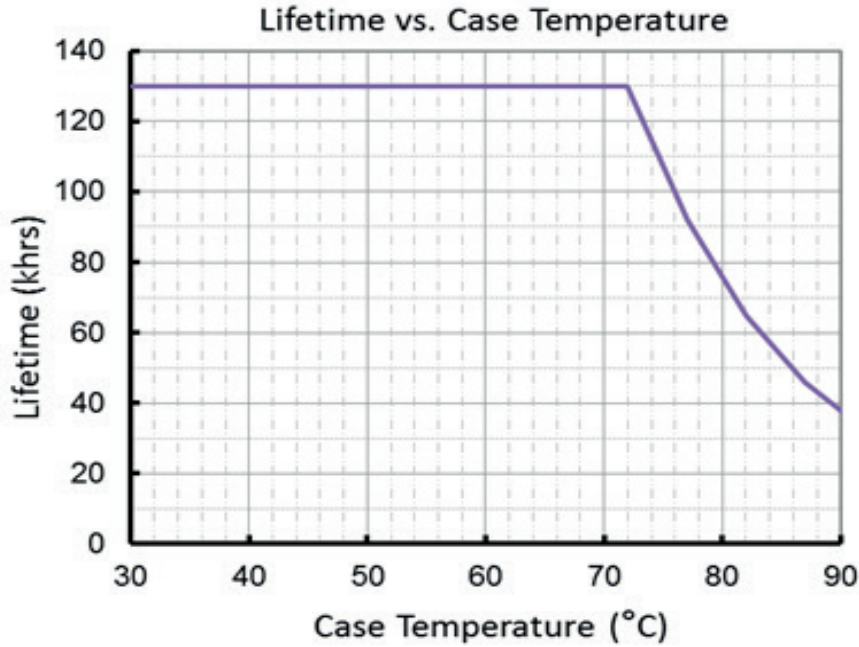
PWM Dimming Curve



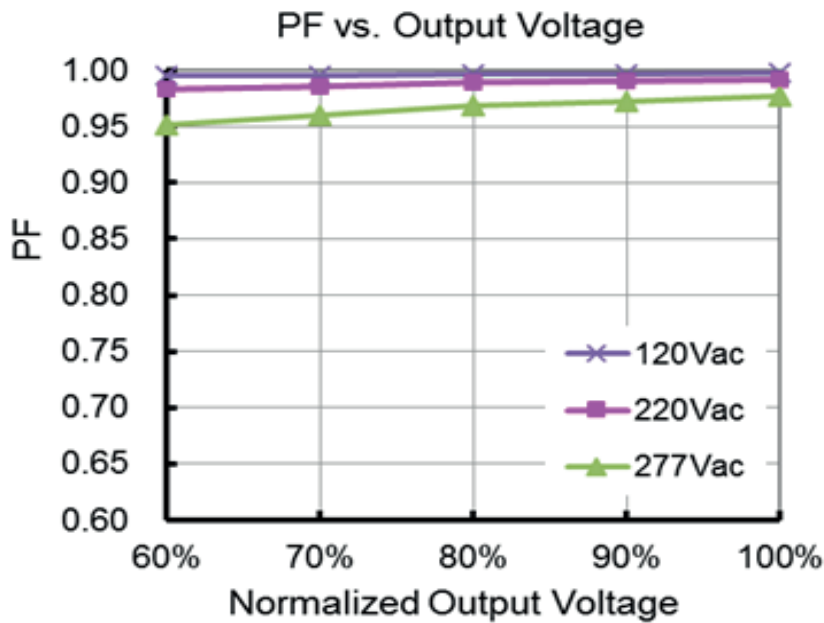
## Dimming Wiring



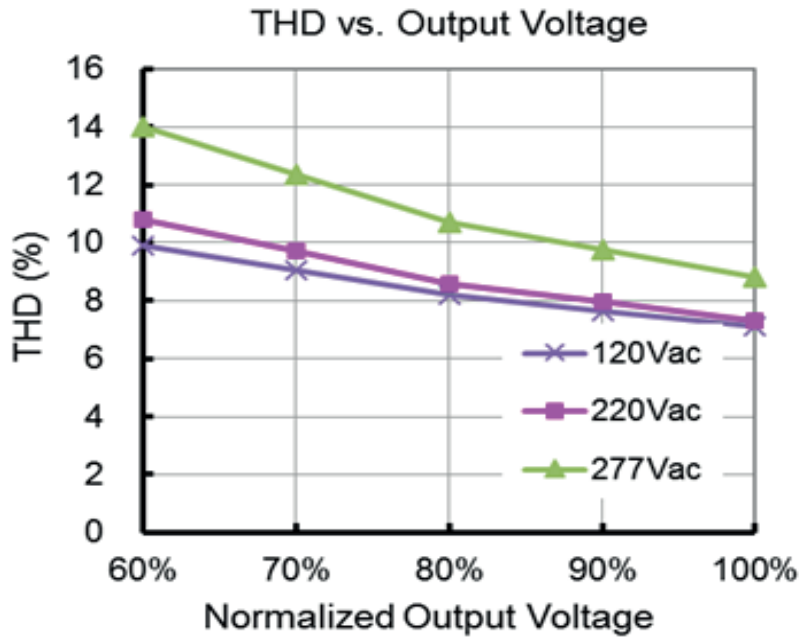
### Lifetime vs. Case Temperature



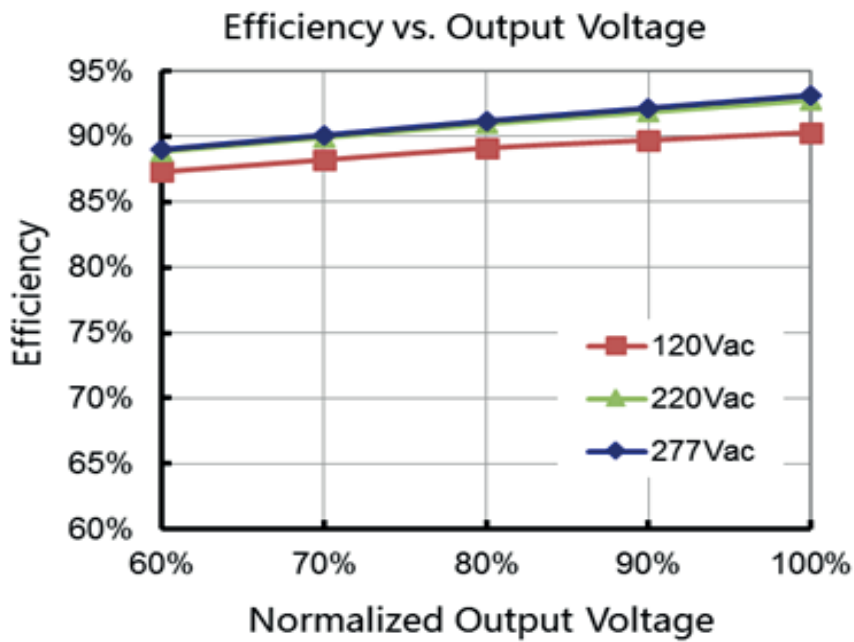
### Power Factor vs. Load



**THD vs. Load**



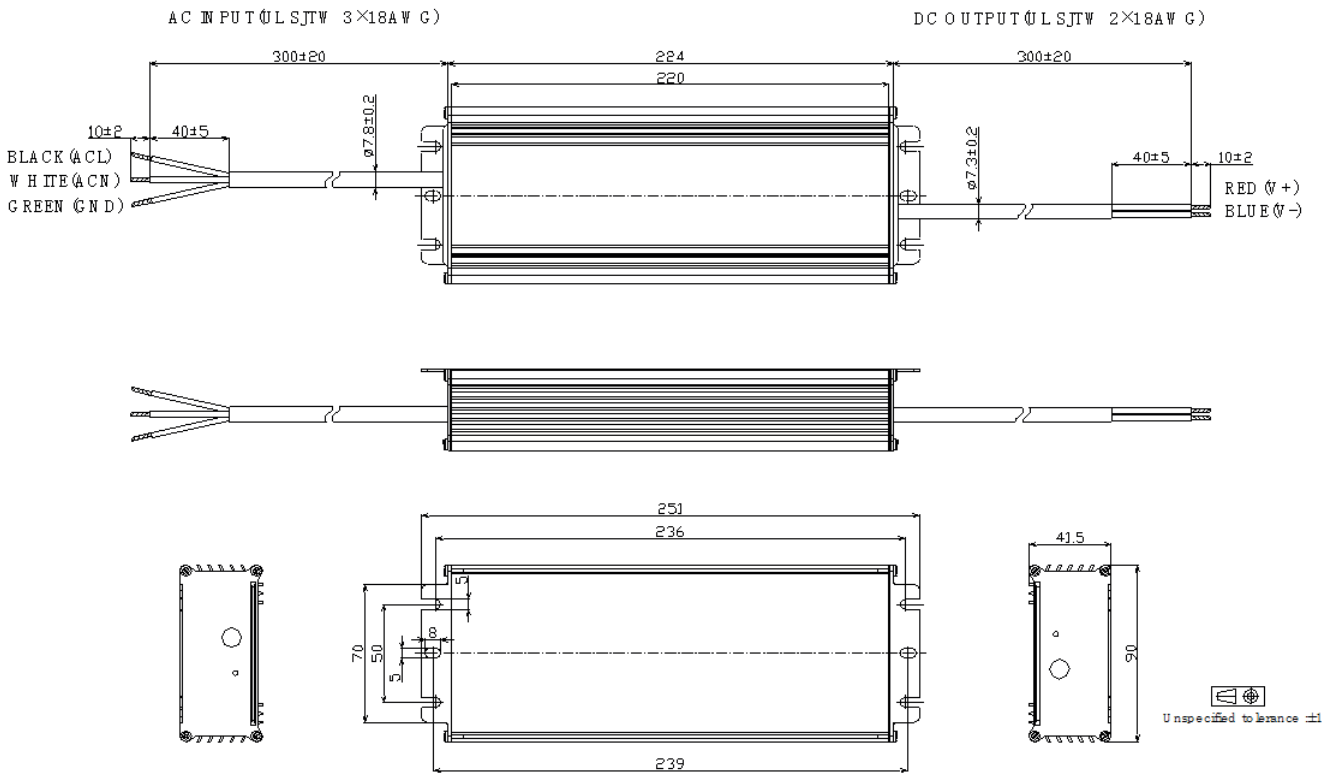
**Efficiency vs. Load (2.1A Model)**



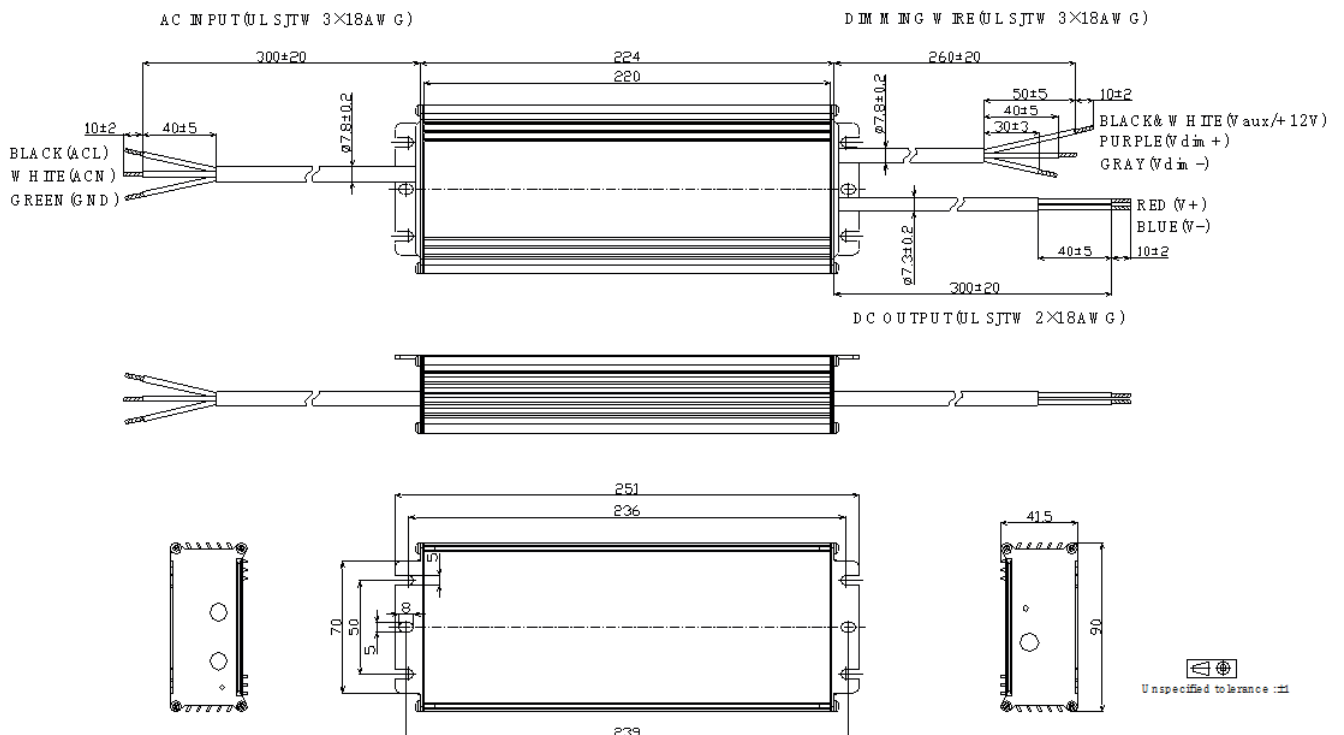
# BLD-320-C Series

## Mechanical Design

- BLD-320-Cxxx-NN/TRU (UL Cable)

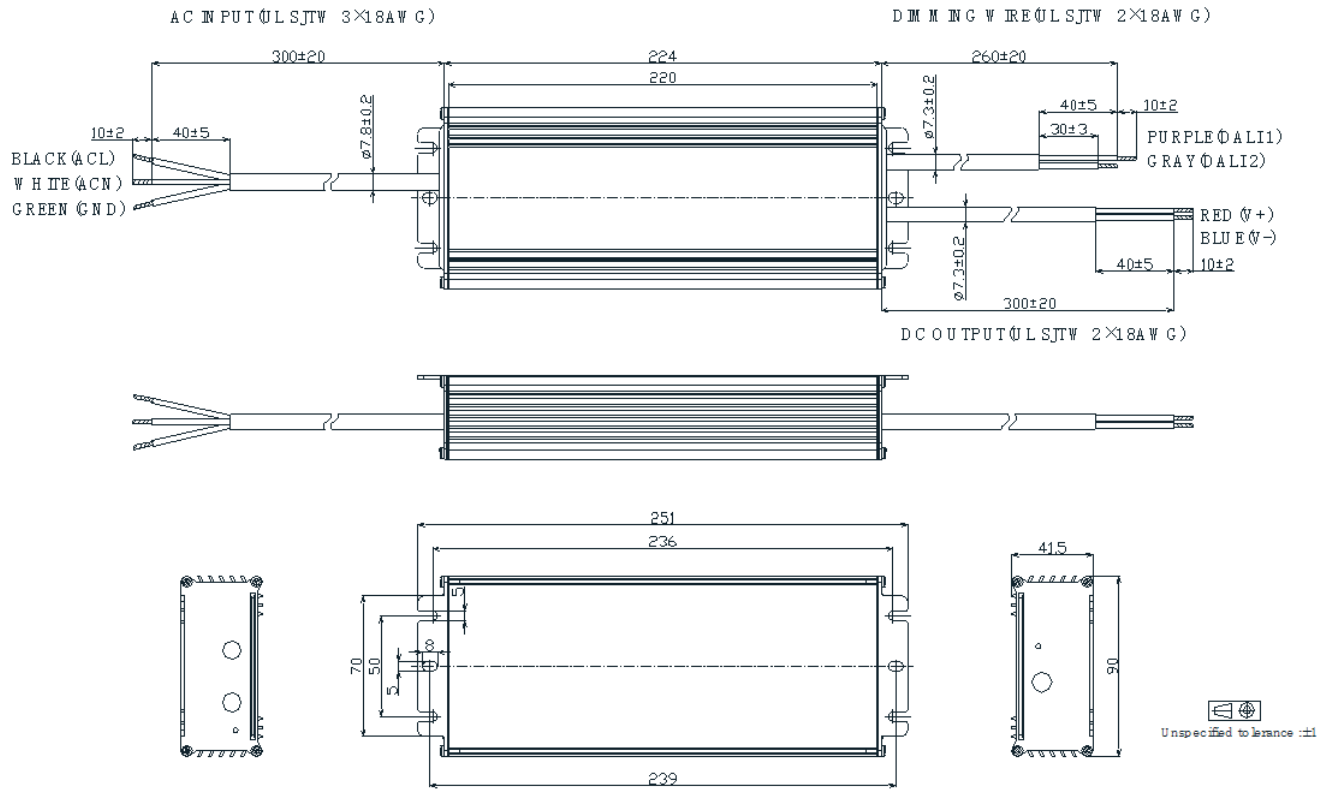


- BLD-320-Cxxx-ERU (UL Cable)

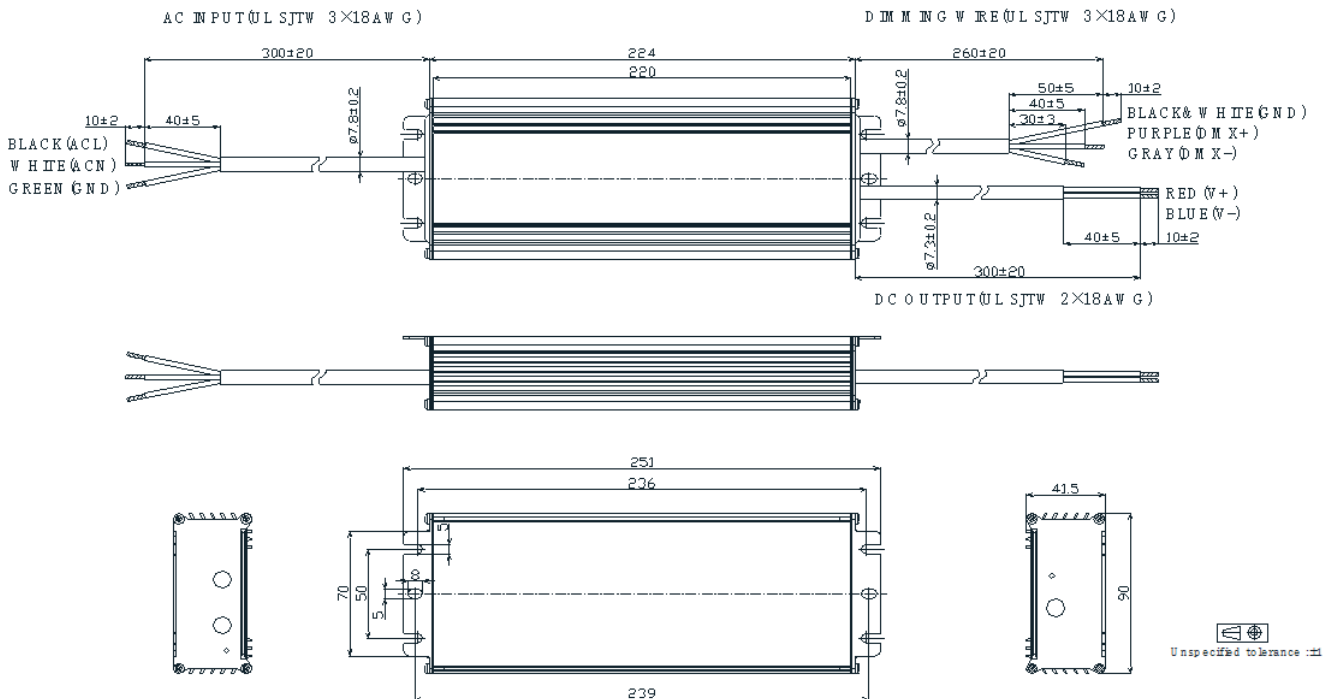


## BLD-320-C Series

### - BLD-320-Cxxx-ANU (UL Cable)



### - BLD-320-Cxxx-MRU (UL Cable)









## BLD-320-C Series

### Appendix – Operation Range

Model	Typical Set Output Current (mA)	Max Output Power (W)	Output Voltage Min (V)	Output Voltage Max(V)	Minimum Dimming Current (mA)
-C140	1400	320	137	229	140
	1300	320	148	246	130
	1200	320	160	267	120
	1100	320	175	291	110
	1050	320	183	305	105
	1000	305	183	305	105
	950	290	183	305	105
	900	274	183	305	105
	850	259	183	305	105
	800	244	183	305	105
	750	229	183	305	105
	700	213	183	305	105
	...	...	...	...	...
	105	32	183	305	105

Model	Typical Set Output Current (mA)	Max Output Power (W)	Output Voltage Min (V)	Output Voltage Max(V)	Minimum Dimming Current (mA)
-C210	2100	320	91	152	210
	2000	320	96	160	200
	1900	320	101	168	190
	1800	320	107	178	180
	1700	320	113	188	170
	1600	320	120	200	160
	1500	320	128	213	150
	1400	320	137	229	140
	1300	297	137	229	140
	1200	274	137	229	140
	1100	251	137	229	140
	1000	229	137	229	140
	...	...	...	...	...
	140	32	137	229	140

## BLD-320-C Series

Model	Typical Set Output Current (mA)	Max Output Power (W)	Output Voltage Min (V)	Output Voltage Max(V)	Minimum Dimming Current (mA)
-C420	4200	320	46	76	420
	4100	320	47	78	410
	4000	320	48	80	400
	3900	320	49	82	390
	3800	320	51	84	380
	3700	320	52	86	370
	3600	320	53	89	360
	3500	320	55	91	350
	3400	320	56	94	340
	3300	320	58	97	330
	3200	320	60	100	320
	3100	320	62	103	310
	3000	320	64	107	300
	2900	320	66	110	290
	2800	320	69	114	280
	2700	309	69	114	280
	...	...	...	...	...
	280	32	69	114	280

Model	Typical Set Output Current (mA)	Max Output Power (W)	Output Voltage Min (V)	Output Voltage Max(V)	Minimum Dimming Current (mA)
-C700	7000	320	27	46	700
	6800	320	28	47	680
	6600	320	29	48	660
	6400	320	30	50	640
	6200	320	31	52	620
	6000	320	32	53	600
	5800	320	33	55	580
	5600	320	34	57	560
	5400	320	36	59	540
	5200	320	37	62	520
	5000	320	38	64	500
	4800	307	38	64	500
	4600	294	38	64	500
	4400	282	38	64	500
	4200	269	38	64	500
	4000	256	38	64	500
	...	...	...	...	...
	500	32	38	64	500