

Features & Benefits

Universal ac input voltage(120-277VAC and 120-347VAC)

Field or factory installation

Dry, damp and wet location design for indoor and outdoor installations

Built-in APFC

Isolated 0-10v dimming, dim down to 0.1%

Complies with leading-edge/trailing-edge dimmer

Wide load range from 10% to 100%(triac dimming)

Flicker free, excellent camera compatibility, spec-grade smoothness

All-Round Protection: SCP, OVP, OTP, OPP(CC/CV mode, especially suitable for LED strip)

Constant voltage PWM style output

Class2, Class P

Operating temperature: -40°C~+55°C

Comply with IEEE1789(≥1% dimming), UL8750

Model List

Model Name	Rated Input Voltage	Max Output Power(Total)	Output Current(Total)	Rated Output Voltage	Efficiency	Dimension
CVJ-A1-060S012X-VT	120-277VAC 120-347VAC	60W max.	0-5000mA	12VDC	89%	218*71.7*35 mm 8.6×2.8×1.4 in.
CVJ-A1-060S024X-VT	120-277VAC 120-347VAC	60W max.	0-2500mA	24VDC	89%	218*71.7*35 mm 8.6×2.8×1.4 in.
CVJ-A1-060S036X-VT	120-277VAC 120-347VAC	60W max.	0-1667mA	36VDC	89%	218*71.7*35 mm 8.6×2.8×1.4 in.
CVJ-A1-060S048X-VT	120-277VAC 120-347VAC	60W max.	0-1250mA	48VDC	89%	218*71.7*35 mm 8.6×2.8×1.4 in.

Optional Function

Input voltage: 120-277VAC or 120-347VAC

Aux power, 12V/50mA

Approvals

TRIAC 0/1-10 V  CLASS P

Model name code

CVJ-A1	-	060	S	XXX	X	-	VT
①		②	③	④	⑤		⑥

①	Series	Constant Voltage Series
②	Output power	Maximum output power: 60W
③	Output Channel	Single channel
④	Output Voltage(max)	012=12V 024=24V 036=36V 048=48V
⑤	Input voltage	U=120-277VAC M=120-347VAC
⑥	Dimming Control	Triac&0-10V

Specification:

Parameters	Symbols	Test Conditions / Comment							Min	Typ	Max	Units		
INPUT														
Input Voltage	V _{IN}	CVJ-A1-060SXXU-VT							108		305	V _{AC}		
		CVJ-A1-060SXXM-VT							108		382	V _{AC}		
Rated Input Voltage	V _{IN RATED}	CVJ-A1-060SXXU-VT							120		277	V _{AC}		
		CVJ-A1-060SXXM-VT							120		347	V _{AC}		
Input Frequency	f _{line}								47	50/60	63	Hz		
Input Current	I _{IN,120}	Full Load, V _{IN} = 120V _{AC}									1.0	A		
	I _{IN,277}	Full Load, V _{IN} = 277V _{AC}									0.45	A		
	I _{IN,347}	Full Load, V _{IN} = 347V _{AC}									0.35	A		
Inrush Current	I _{INRUSH}	Cold Start, V _{IN} = 347V _{AC}									75	A		
Leakage Current	I _{Leakage}	V _{IN} = 347V _{AC} , 60Hz									0.75	mA		
Number of Drivers per MCB(Circuit Breaker)	MCB type	B10	C10	D10	B13	C13	D13	B16	C16	D16	B20	C20	D20	
	120V _{AC}	6	7	8	8	10	11	10	12	14	13	15	17	
	277V _{AC}	3	6	12	5	8	16	6	10	20	7	12	25	
	347V _{AC}	3	6	12	4	7	15	5	9	19	7	12	24	
		Input Voltage			Inrush Current			t(us)10%-10%						
		120VAC			27.4A			260						
		277VAC			61.8A			324						
		347VAC			74.0A			366						

General Characteristics

Power Factor	PF	CVJ-A1-060SXXXX-VT, 30~100% load, $V_{IN} = 120V_{AC}$	0.9			PF
		CVJ-A1-060SXXXX-VT, 65~100% load, $V_{IN} = 277V_{AC}$	0.9			
		CVJ-A1-060SXXXX-VT, 75~100% load, $V_{IN} = 347V_{AC}$	0.9			
Total Harmonic Distortion	THD	CVJ-A1-060SXXXX-VT, 30~100% load, $V_{IN} = 120V_{AC}$			20	%
		CVJ-A1-060SXXXX-VT, 65~100% load, $V_{IN} = 277V_{AC}$			20	
		CVJ-A1-060SXXXX-VT, 75~100% load, $V_{IN} = 347V_{AC}$			20	
Efficiency	η	Full load, $V_{IN} = 120V_{AC}$, $V_{OUT} = 12V$, steady state	85	86		%
		Full load, $V_{IN} = 277V_{AC}$ (U type), $V_{IN} = 347V_{AC}$ (M type), $V_{OUT} = 12V$, Steady state	86	87		
		Full load, $V_{IN} = 120V_{AC}$, $V_{OUT} = 24V$, Steady state	85	86		
		Full load, $V_{IN} = 277V_{AC}$ (U type), $V_{IN} = 347V_{AC}$ (M type), $V_{OUT} = 24V$, Steady state	87	88		

		Full load, $V_{IN}=120V_{AC}$, $V_{OUT}=36V$, Steady state	86	87		
		Full load, $V_{IN}=277V_{AC}$ (U type), $V_{IN}=347V_{AC}$ (M type), $V_{OUT}=36V$, Steady state	88	89		
		Full load, $V_{IN}=120V_{AC}$, $V_{OUT}=48V$, Steady state	86	87		
		Full load, $V_{IN}=277V_{AC}$ (U type), $V_{IN}=347V_{AC}$ (M type), $V_{OUT}=48V$, Steady state	88	89		
Turn On Delay Time	T_{on_delay}	Cold Start, No dimmer			0.5	S

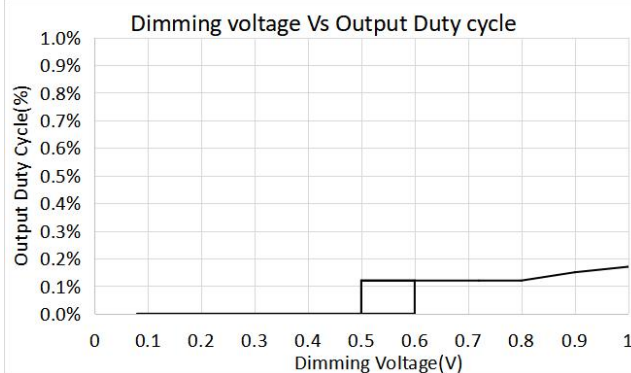
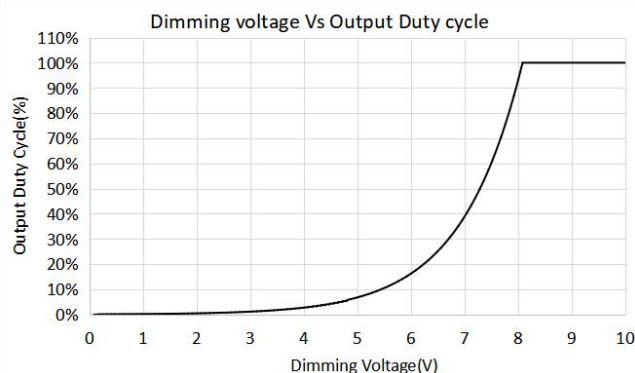
OUTPUT

Output Voltage Tolerance	t_{OUT}	No Dimming			3	%
No Load Output Voltage Tolerance	t_{NO_LOAD}	No Load, No Dimming			1.5	%
Output Current	I_{OUT}	CVJ-A1-060S012X-VT	0		5000	mA
		CVJ-A1-060S024X-VT	0		2500	mA
		CVJ-A1-060S036X-VT	0		1667	mA
		CVJ-A1-060S048X-VT	0		1250	mA
Output Power	P_{OUT}				60	W
Line Regulation	$V_{OUT-LINE}$				1	%
Ripple Voltage	$V_{OUT-LINE}$	Full Load, (pk-to-pk)/Average			5	%
Output Voltage Overshoot	$V_{OVERSHOOT}$	Turning Power ON			10	%

0~10V or Resistor Dimming(Optional)

The 0~10V or resistor dimming can be used to dim the output voltage via a standard commercial wall dimmer (0~10VDC) or an external control voltage source (0~10VDC) or external resistor. The unit can be compatible with both sink and source current dimmers.

Dimming Curve	Linear. please see "Dimming curve".					
Absolute Maximum Voltage on 0~10V Pin	V_{DIM}		0		50	V
Source Current on 0~10V Dimming Pin	I_{DIM}			200		uA
Light On	V_{DIM-on}			0.6		V
Light Off	$V_{DIM-off}$			0.5		V
Dimming Voltage for Full Bright	$V_{DIM-MAX}$		8			V
Leakage Voltage	V_{Leak_rms}	Voltage between DIM- and Ground			20	V_{AC}



Triac Dimming(Optional)

The unit is compatible With Leading-edge and Trailing-edge Dimmer.

Input Voltage	$V_{IN-TRIAC\ DIM}$			120		V_{AC}
Dim Output Voltage	$V_{OUT-TRIAC}$	PWM Output	0	-	100	% of V_{OUT}
Suggest Load Range	$P_{suggest}$	$V_{IN} = 120 V_{AC}$	10		100	%

Auxiliary source (Optional)

Voltage range	V_{AUX}	Standard product	11.4	12	12.6	Vdc
Current range	I_{AUX}	$V_{AUX}=12V$			50	mA
Output Power	P_{AUX}				0.6	W
Voltage tolerance	t_{AUX}				8	%

Protection

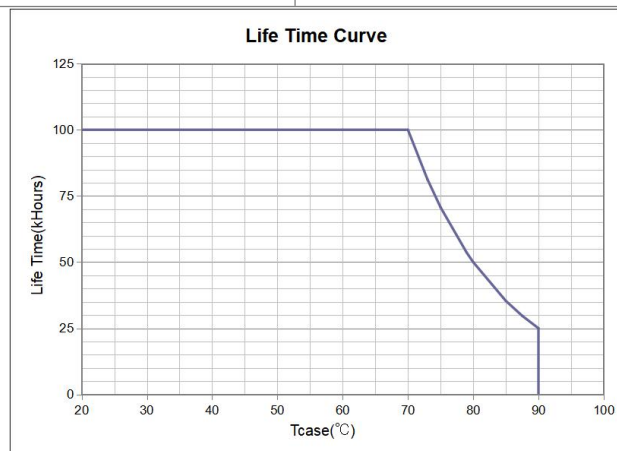
Over Voltage Protection	V_{OVP}	CVJ-A1-060S012X-VT, Latch mode.	14		18	V
		CVJ-A1-060S024X-VT, Latch mode.	28		36	V
		CVJ-A1-060S036X-VT, Latch mode.	40		47	V
		CVJ-A1-060S048X-VT, Latch mode.	56		63	V
Over Current Protection	I_{OCP}	CVJ-A1-060S012X-VT, Hiccup mode.	5000		5600	mA
		CVJ-A1-060S024X-VT, Hiccup mode.	2500		2810	mA
		CVJ-A1-060S036X-VT, Hiccup mode.	1667		1900	mA
		CVJ-A1-060S048X-VT, Hiccup mode.	1250		1400	mA
Over Temperature Protection	T_{OTP}	If the case temperature exceeds OTP point, the output voltage of the driver is automatically reduced.	90	95	100	°C
Over Power Protection	CC/CV mode.					
Short Circuit Protection	The unit can recover automatically after fault conditions is removed.					

Environment

Storage Temperature	$T_{Storage}$	Humidity: 5% RH to 95% RH	-40	-	+85	°C
Ambient Operating Temperature	T_a		-40	-	+55	°C
Max. Case Temperature	T_c	Hot spot on case			90	°C
Operating Relative Humidity	H_a	Non-Condensing	10		90	%
Acoustic Noise		Measured from 1 m w/o dimmer.			24	dBA
Cooling	Convection Cooling					
IP Rating	Dry, damp and wet location UL approved					

Others

Life Time	T_{Life}	Full Load, 80°C case temperature,	50			kHrs
MTBF	T_{MTBF}	Full Load, 25°C ambient temperature	200			kHrs
Net Weight	W_{NET}			450		g
Warranty	5 Years Warranty at $T_c \leq 80^\circ\text{C}$					
Flicker	IEEE 1789 ($\geq 1\%$ dimming), Title 24					



Safety Compliance

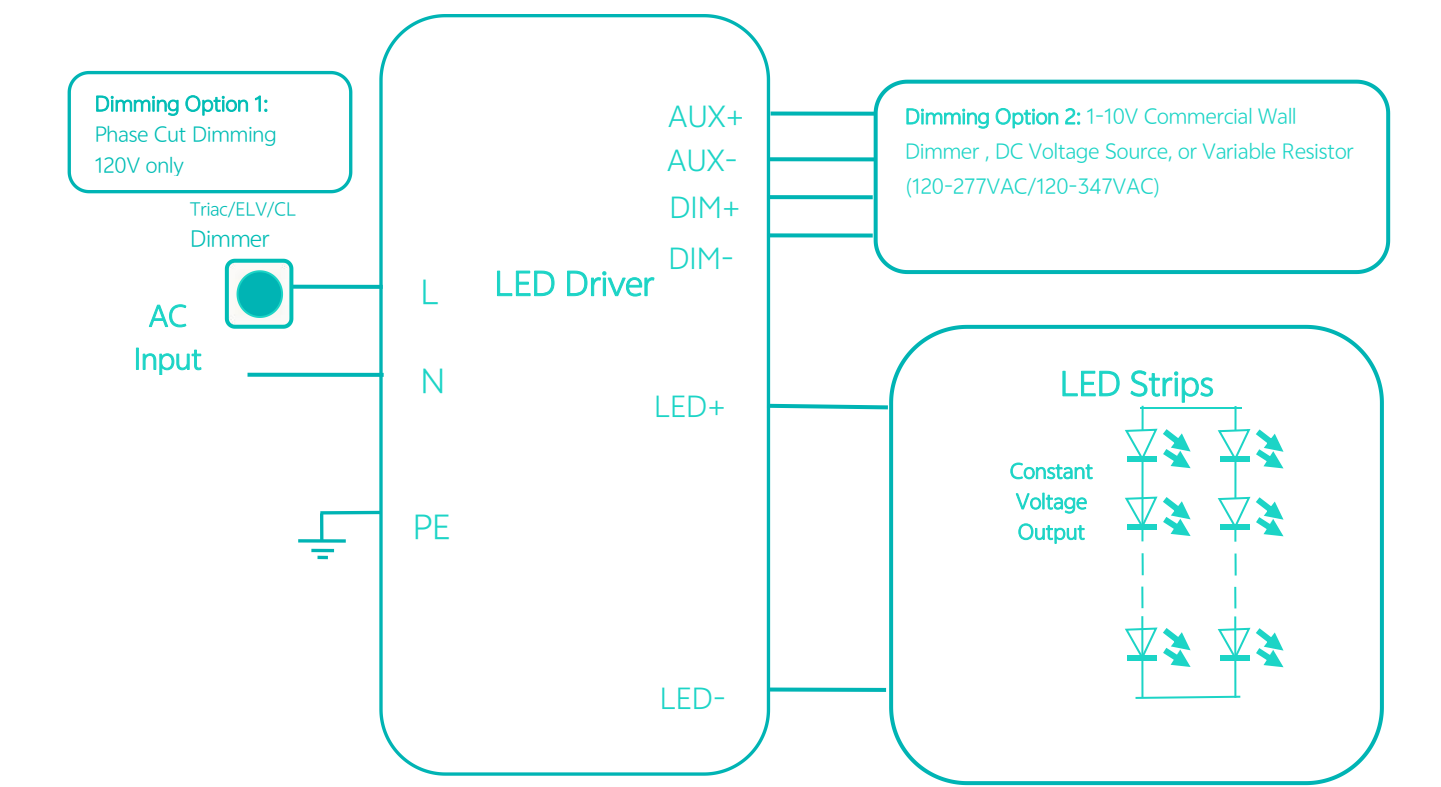
CUL/UL	UL8750, CAN/CSA-C22.2 No. 250.13
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Electromagnetic Compliance

EMC Requirements	Standard	Conditions
EMI Emissions	FCC Title 47 Part 15B	Class B at 120VAC, Class A at 277VAC & 347VAC
Voltage Fluctuations and Flicker	IEC61000-3-3	
Immunity Compliance	IEC 61000-4-2	$\pm 8\text{kV}$ air Discharge, $\pm 6\text{kV}$ Contact Discharge
	IEC 61000-4-5 or ANSI/IEEE C62.41-2002	$\pm 4\text{kV}$ Common Mode($12\ \Omega$), $\pm 2\text{kV}$ Differential Mode($2\ \Omega$), 5 strikes/1minute interval (40 total strikes)
	ANSI/IEEE C62.41.1-2002	2.5kV Ring Wave, test at $30\ \Omega$ 7 Strikes/1 minute interval, Common and Differential mode, 56 total strikes
	IEC 61000-4-11	>95% dip, .5 period; 30% dip, 25 periods; 95% reduction, 250 periods
	IEC 61000-4-4	$\pm 2\text{kV}$ Direct couple to Line input, 5kHz repetition rate, 15mS duration, 300mS period. 7 coupling paths, 1 minute per path (14 total combinations)

Note: Unless otherwise specified, all the above parameters are measured at ambient temperature of 25°C and rated voltage.

Typical Application



Packaging

Driver quantity (pcs)	Layer	Weight (kg)	Outer dimensions of Carton L*W*H(mm)
TBD			330 X 305 X 210

Mechanical Drawing:

