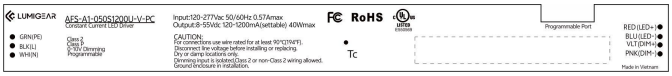
AFS-A1-050S1200U-V-PC

50W Programmable, 1% dimming, 0~10V, Constant Current Series



Features & Benefits

Universal ac input voltage(120-277VAC)

Linear form factor, metal sheet case(white), side feed

Isolated 0-10v dimming interface, dim down to true 1.2 mA

Low standby power: <0.5W@120VAC

Suitable for indoor use

Flicker free, excellent camera compatibility, spec-grade smoothness

USB programmable feature:

Output current, dim to off, min dimming level

OTP point of driver, luminous decay compensation,

End-of-life indicator, fade in time, over load protection point

Dimming curve: Log/linear/square dim curves

Class2, Class P

Operating temperature: -30℃~+50℃

Comply with IEEE1789, UL8750, Category A ring wave 2.5kV

Model List

Model Name	Rated Input Voltage	Max Output Power(Total)	Output Current(Total)	Rated Output Voltage	Efficiency	Dimension
AFS-A1-050S2000U-V-PC	120-277VAC	50W max.	120-1200mA	10-55VDC	88%	258.5*18.7*16.5mm 10.1×0.7×0.6 in.

Optional Function

Aux power: 12V/50mA

Approvals

0/1-10 V c UL us LISTED CLASS P

Model name code

AFS-A1 - 050 S 1200 U – V – PC

① ② ③ ④ ⑤ ⑥ ⑦

①	Series	Architecture FlexFit Series
②	Output power	Maximum output power: 50W
③	Output Channel	Single channel
④	Output current(max)	Maximum output power: 1200mA
⑤	Input voltage	120-277VAC
⑥	Dimming Control	0-10V
⑦	Programmable	USB-PC

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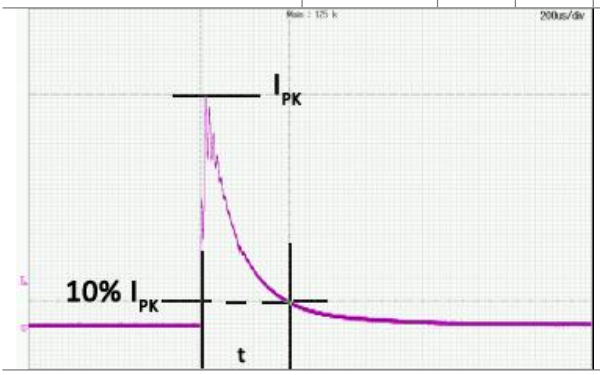
Specification:

Parameters	Symbols	Test Conditions / Comment	Min	Typ	Max	Units
INPUT						
Input Voltage	V_{IN}		108		305	V_{AC}
Rated Input Voltage	$V_{IN\ RATED}$		120		277	V_{AC}
Input Frequency	f_{line}		47	50/60	63	Hz
Input Current	I_{IN}	Full Load, V_{IN} = 120V_{AC}			0.57	A
Inrush Current	I_{INRUSH}	Cold Start, V_{IN} = 277V_{AC}			50	A
Leakage Current	$I_{Leakage}$	V_{IN} = 277$V_{AC,}$ 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}	13	15	17	17	19	22	21	24	28	26	30	35
277V_{AC}	11	18	37	14	24	48	17	29	59	22	37	74



Input Voltage	Inrush Current	t(us)10%-10%
120VAC	19.32A	116
277VAC	46.93A	120
347VAC	NA	NA

General Characteristics

Power Factor	PF	20-100% load, V_{IN} = 120V_{AC}	0.95			PF
		55-100% load, V_{IN} = 277V_{AC}	0.9			
Total Harmonic Distortion	THD	20-100% load, V_{IN} = 120V_{AC}			20	%
		55-100% load, V_{IN} = 277V_{AC}			20	%
Efficiency	η	Vout=55V, Iout=900mA, V_{IN} =120V_{AC}, steady state	86	87		%
		Vout=55V, Iout=900mA, V_{IN} =277V_{AC}, steady state	87	88		%
Turn On Delay Time	T_{on_delay}	Cold Start, 350-1200mA			0.5	S
		Cold Start, 120-349mA			1	S

PF CURVE, TBD

THD CURVE, TBD

OUTPUT

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Programmable Output Current	I_{OUT}		120		1200	mA
Output current tolerance	t	I_{OUT}=350-1200mA			5	%
		I_{OUT}=120-349mA			7	%
Output Current Range	I_{OUT}	Amplitude Control.	1.2		1200	mA
Output Voltage	V_{OUT}		8		55	V
Output Power	P_{OUT}	See "Operating window"			50	W
Line Regulation	$V_{OUT-LINE}$				3	%
Load Regulation	$I_{OUT-LOAD}$	V_{OUT} from MIN. to MAX.			5	%
Ripple Current	$I_{OUT-RIPPLE}$	Full Load, $(I_{omax}-I_{omin})/(I_{omax}+I_{omin})$			10	%
Output Current Overshoot	$I_{OVERSHOOT}$	Turning Power ON			10	%

EFF.@120V, TBD	EFF.@277V, TBD
OPA, TBD	

Programming

User can program the driver via terminal block.

- Output current(1mA Step)
- Dim to off
- Min Dimming Level
- OTP point of driver
- Luminous decay compensation
- End-of-life indicator
- Fade in time
- Over load protection point
- Dimming curve: Log/linear/square

Interface- Terminal block	Programming software	"LUMIGEAR Programming Tool"
	Programming tool	"Lumigear tool box"

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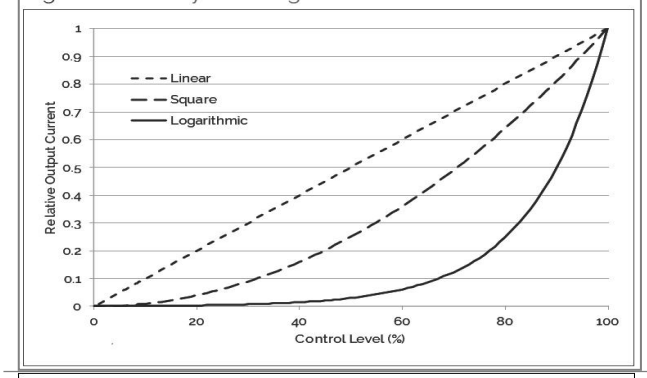
	Operating voltage			5	5.5	V

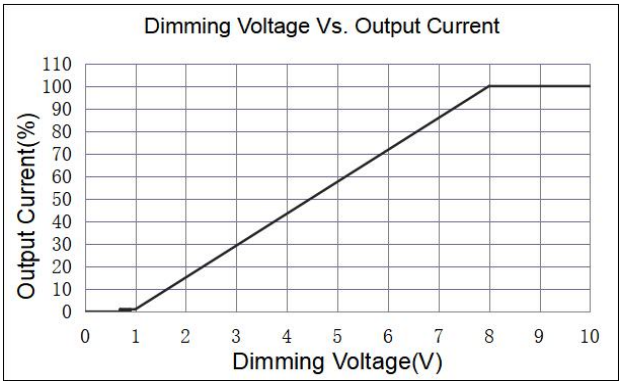
0~10V or Resistor Dimming

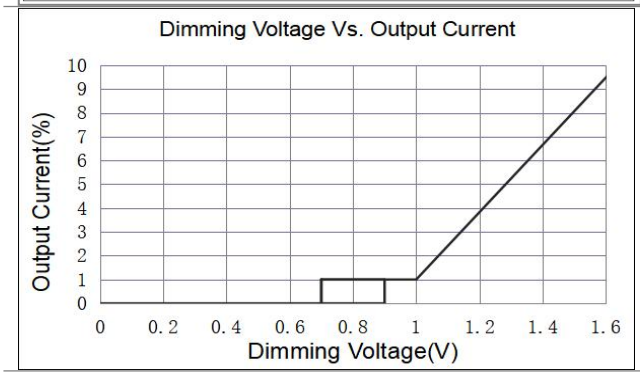
The 0~10V or resistor dimming can be used to dim the output Current via a standard commercial wall dimmer (0~10V_{DC}) or an external control voltage source (0~10V_{DC}) or external resistor.

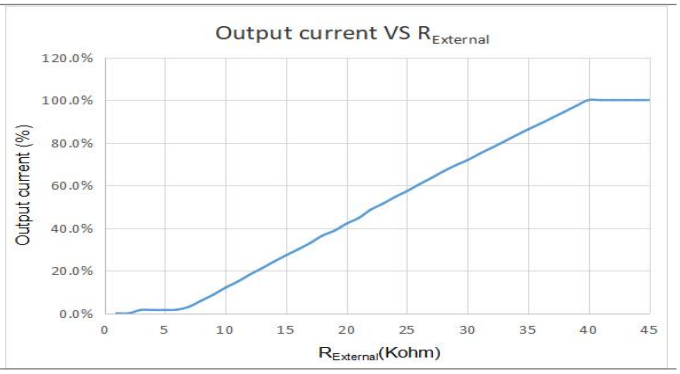
Dimming Curve	Log/linear/square dim curves, Default Linear. please see "Dimming curve".					
Absolute Maximum Voltage on 0~10V Pin	V_{DIM}		0		300	V
Source Current on 0~10V Dimming Pin	I_{DIM}			200		uA
Light On	V_{DIM-on}	Programmable		0.9		V
Light Off	$V_{DIM-off}$	Programmable		0.7		V
Clamp Voltage	$V_{DIM-Clamp}$	Programmable		1		V
Dimming Voltage for Full Bright	$V_{DIM-MAX}$	Programmable		8		V
Leakage Voltage	V_{Leak_rms}	Voltage between DIM- and Ground			20	V_{AC}
Standby power	$P_{STANDBY}$	Light Off, V_{IN}=120V			0.5	W

Figure 1: Intensity Dimming Profile Characteristics









Auxiliary source (Optional)

Max.power	P_{AUX}				1.2	W
Output Voltage	V_{AUX}		11	12	13	Vdc
Over load Protection	P_{OLP_AUX}	CC/CV mode			1.5	W

Protection

Over Voltage Protection	V_{OVP}	Recover automatically after fault conditions is removed.			60	V

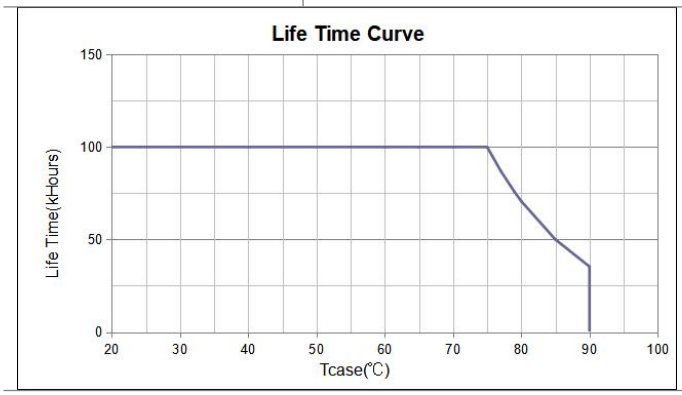
Over load protection	P_{OLP}	Programmable. The output current will decrease when output power reach P_{OLP}	20		50	W
OLP tolerance	t_{OLP}		100		110	%
Over Temp. Protection	T_{OTP}	Current foldback at hotspot greater than T_{OTP}		90		℃
Short Circuit Protection	The unit will recover automatically after fault conditions is removed.					

Environment

Storage Temperature	$T_{Storage}$	Humidity: 5% RH to 95% RH	-40	-	+85	℃
Ambient Operating Temperature	T_a		-30	-	+50	℃
Max. Case Temperature	T_c	Hot spot on case			90	℃
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 and damp UL approved					

Others

Life Time	T_{Life}	Full Load, 85℃ case temperature, V_{IN} = 120/277V_{AC}	50			kHrs
MTBF	T_{MTBF}	Full Load, 25℃ ambient temperature V_{IN} = 120/277V_{AC}	200			kHrs
Net Weight	W_{NET}			TBD		g
Warranty	5 Years Warranty at T_c ≤85℃					
Flicker	IEEE 1789,Title 24					



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Safety Compliance

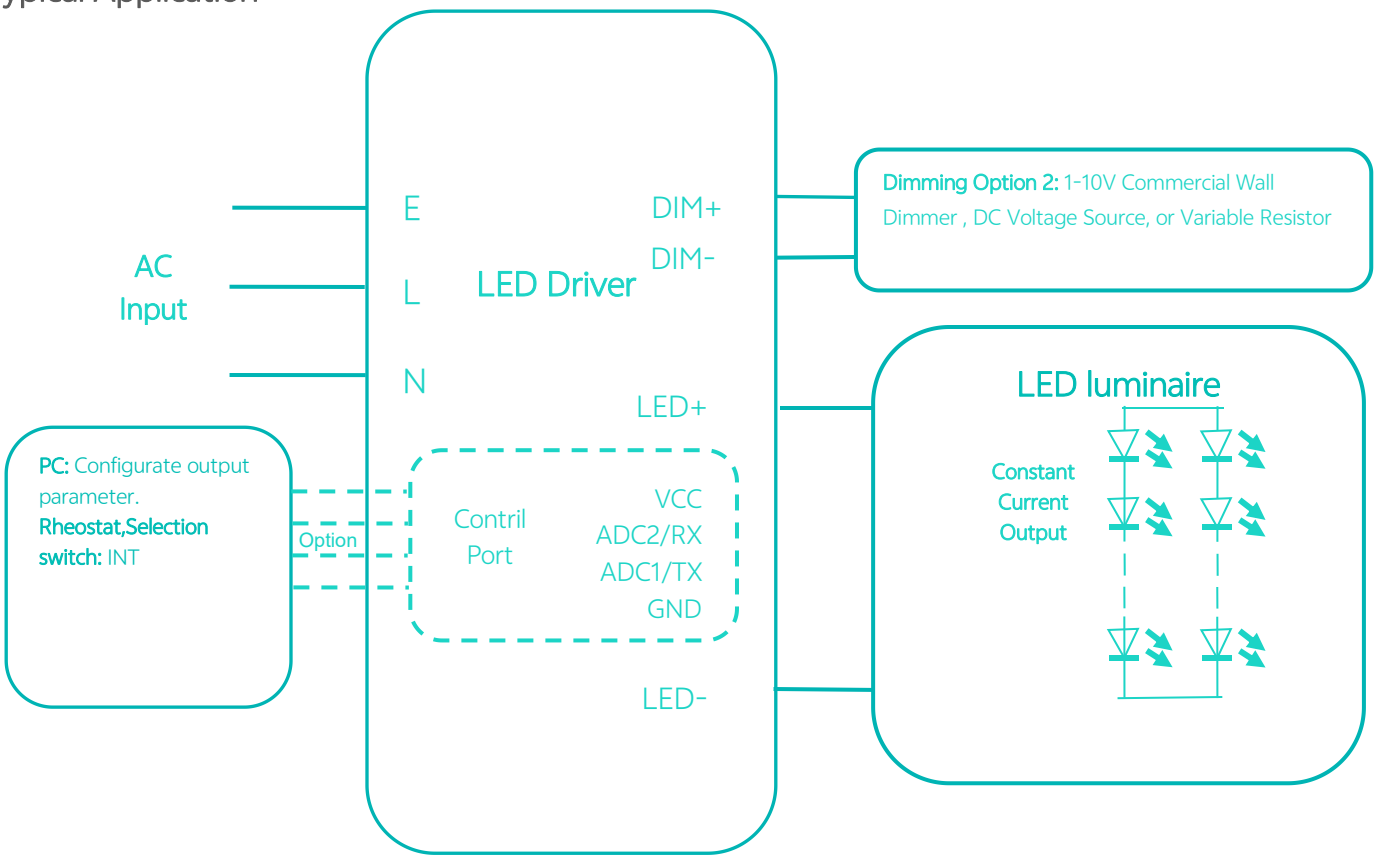
CUL/UL	UL8750, CAN/CSA-C22.2 No. 250.13

Electromagnetic Compliance

EMC Requirements	Standard	Conditions
EMI Emissions	FCC Title 47 Part 15B	Class B at $120V_{AC}$, Class A at $277V_{AC}$
Voltage Fluctuations and Flicker	IEC61000-3-3	
Immunity Compliance	IEC 61000-4-2	±8kV air Discharge, ±6kV Contact Discharge
	ANSI C62.41-2002	± 2kV Common and Differential Mode, test at 2 Ω, 5 strikes/1minute interval (40 total strikes)
	ANSI C62.41.1-2002	2.5kV Ring Wave, test at 30Ω 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	± 2kV Direct couple to Line input, 5kHz repitition 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℃ and rated voltage.

Typical Application



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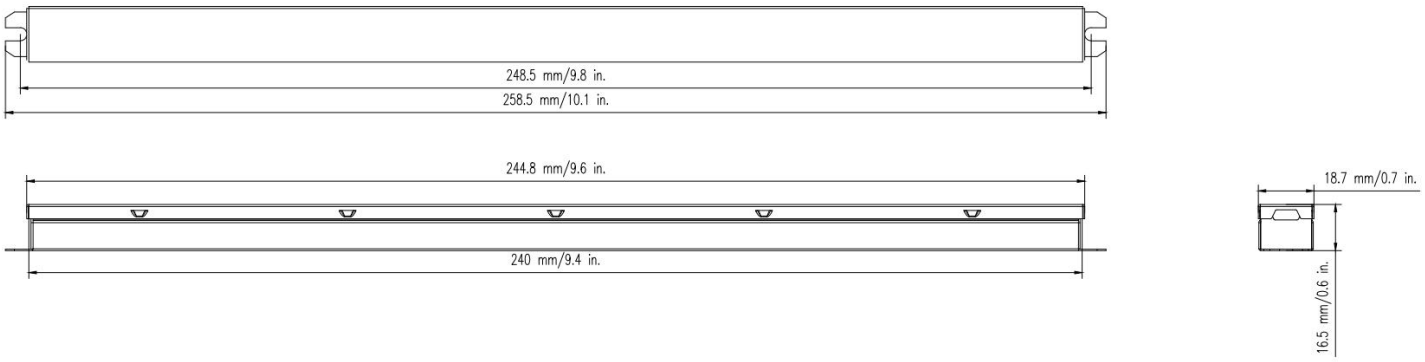
Packaging

Driver quantity (pcs)	Layer	Weight (kg)	Outer dimensions of Carton L*W*H(mm)
TBD	TBD	TBD	330 X 300 X 230

Mechanical Drawing:



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