

Features & Benefits

- Universal AC Input Voltage(120-277VAC)
- High Power Density Design
- Comply with phase cut dimming and isolated 0-10V dimming, dim down to true 1%
- Silicon potted for good thermal performance
- Suitable for indoor use
- Flicker free, excellent camera compatibility
- UL Class2, Class P
- Combination Wave 2KV, Ringwave 2.5KV
- Operating temperature: -25°C~+50°C
- Comply with IEEE1789, UL8750

Programmable features:

- ◆ Output current(1mA step)
- ◆ Dim to off, Min Dimming Level
- ◆ Programmable conduction angles with turn-on & turn-off for TRIAC & ELV
- ◆ Dimming curve: Selectable Linear / Logarithmic
- ◆ OTP mode: Foldback mode, Linear decrease mode
- ◆ Dimming fade time(Soft start)
- ◆ Over load protection

Model List

Model Name	Rated Input Voltage	Max Output Power(Total)	Output Current(Total)	Rated Output Voltage	Efficiency	Dimension
AFI-R1-015S0700U-VT-PC	120-277VAC	15W max.	150-700mA	5-42VDC	88%	D58*H27mm/ D2.2*H1 in.
AFI-R1-030S1200U-VT-PC	120-277VAC	30W max.	300-1200mA	5-42VDC	89%	D58*H27mm/ D2.2*H1 in.

Approvals

TRIAC 0/1-10 V  CLASS P

Model name code

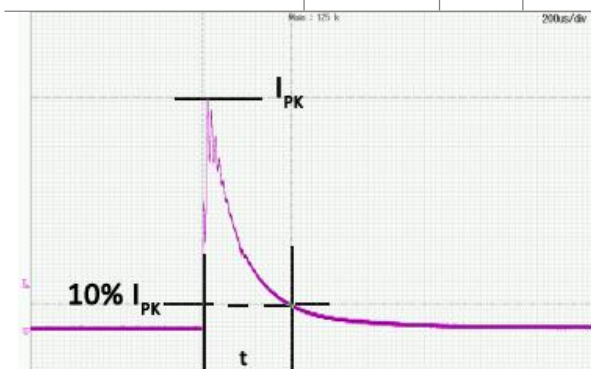
AFI-R1	-	030S	1200	U	-	VT	-	PC
①		②	③	④		⑤		⑥
①	Series		AFI Series					
②	Output power		Maximum output power:30W					
③	Output current(max)		Maximum output current:1200mA					
④	Input voltage		120-277VAC					
⑤	Dimming Control		Triac&0-10V					
⑥	Programmable		USB-PC					

Specification:

Parameters	Symbols	Test Conditions / Comment	Min	Typ	Max	Units
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INPUT

Input Voltage	V _{IN}								108		305	V _{AC}	
Rated Input Voltage	V _{IN RATED}								120		277	V _{AC}	
	V _{IN RATED, TRIAC}	Phase Cut Dimming								120		V _{AC}	
Input Frequency	f _{line}								47	50/60	63	Hz	
Input Current	I _{IN}	15W, Full Load, V _{IN} = 120V _{AC}									0.18	A	
		30W, Full Load, V _{IN} = 120V _{AC}									0.36	A	
Inrush Current	I _{INRUSH}	Cold Start, V _{IN} = 277V _{AC}									18	A	
Leakage Current	I _{Leakage}	V _{IN} = 277V _{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}	16	18	21	21	24	28	26	30	34	32	37	43
	277V _{AC}	15	25	50	19	32	65	24	40	81	30	50	101



Input Voltage	Inrush Current	t(μs)10%-10%
120VAC	8.0A	254
277VAC	15.8A	208
347VAC	NA	NA

General Characteristics

Power Factor	PF	30-100% load, $V_{IN} = 120V_{AC}$	0.9			PF
		50-100% load, $V_{IN} = 277V_{AC}$	0.9			
Total Harmonic Distortion	THD	30-100% load, $V_{IN} = 120V_{AC}$			20	%
		50-100% load, $V_{IN} = 277V_{AC}$			20	%
Turn On Delay Time	T_{on_delay}	Cold Start, Without Dimmer			0.5	S
Efficiency	η_{120V_15W}	Full load, $V_{IN} = 120V_{AC}$, $I_{OUT} = 350mA$, Steady state	85	87		%
	η_{277V_15W}	Full load, $V_{IN} = 277V_{AC}$, $I_{OUT} = 350mA$, Steady state	86	88		%
	η_{120V_30W}	Full load, $V_{IN} = 120V_{AC}$, $I_{OUT} = 700mA$, Steady state	86	88		%
	η_{277V_30W}	Full load, $V_{IN} = 277V_{AC}$, $I_{OUT} = 700mA$, Steady state	87	89		%

OUTPUT

Output Current Tolerance	t	$I_{OUT} = (40-100\%)I_{MAX}$			5	%
Output Current Range	I_{OUT_15W}	015	1.5		700	mA
	I_{OUT_30W}	030	3		1200	mA
Output Voltage	V_{OUT}		5		42	V
Line Regulation	$V_{OUT-LINE}$	$I_{OUT} = (40-100\%)I_{MAX}$			5	%

Load Regulation	$I_{OUT-LOAD}$	$I_{OUT}=(40-100\%)I_{MAX}$			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	%

Programming

NO.	Item	Default Setting
1	Output current(1mA step)	See"Model list" for each model
2	Dim to off(0-10V)	Enable
3	Min Dimming Level	1%
4	0-10V Dimming curve: Linear / Logarithmic/customer dim curves	See "0~10V or Resistor Dimming" section
5	Over Temperature Protection: Foldback mode, Linear decrease mode	See "Protection" section
6	Over load protection	See "Protection" section
7	Fade time	10mS
8	Conduction angles with turn-on & turn-off & full brightness for TRIAC & ELV	See"Triac Dimming" section
Programming Interface	PGT-USB-TPAC-A	
Programming Cables	PGT-USB-AUDIO	

0~10V or Resistor Dimming

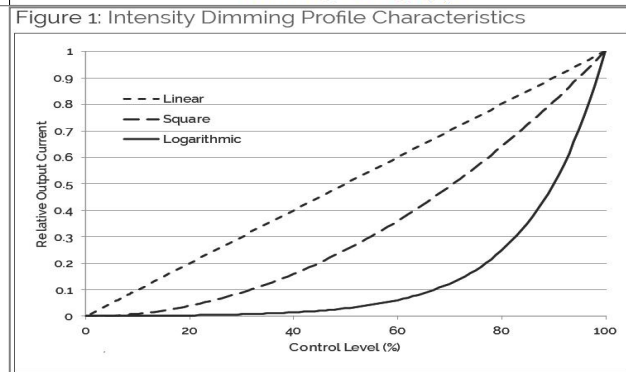
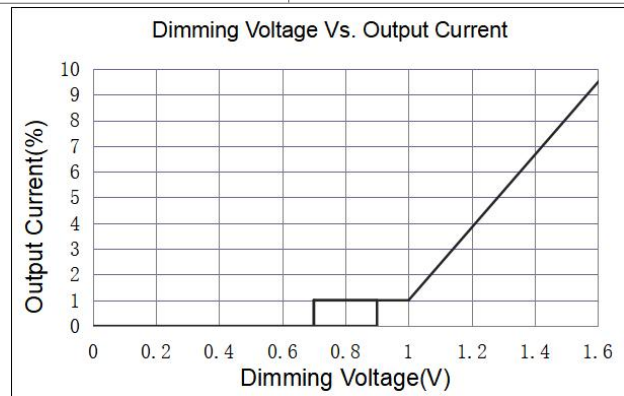
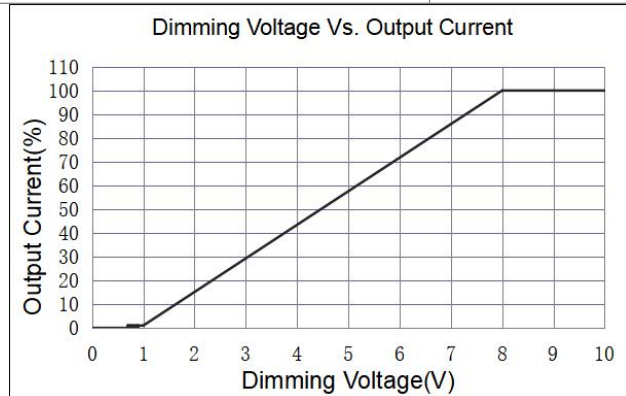
The 0~10V or resistor dimming can be used to dim the output current via a standard commercial wall dimmer (0~10V_{DC}) or an external control voltage source (0~10V_{DC}) or external resistor.

Dimming Curve	Selectable: Log/linear/customer, Default setting is linear curve. please see "Dimming curve".					
Absolute Maximum Voltage on 0~10V Pin	V_{DIM}				300	V_{AC}
Source Current on 0~10V Dimming Pin	I_{DIM}			200		μA
Light On	V_{DIM-on}	Programmable		0.9		V
Light Off	$V_{DIM-off}$	Programmable		0.7		V
Clamp at Min.dimming level	$V_{DIM-Clamp}$	Programmable		1		V
Dimming Voltage for Full Bright	$V_{DIM-MAX}$	Programmable		8		V
Standby power	$P_{STANDBY}$	Light Off			0.6	W

Compatible Dimmers

NO.	Item	Default Setting
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1	Leviton	DS710
2	Leviton	IP710
3	Lutron	NTSTV-DV
4	Lutron	NFTV
5	Lutron	DVTV-WH



Triac Dimming

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

Input Voltage	$V_{IN-TRIAC\ DIM}$		120	V_{AC}
Suggest Load Range	$P_{Suggest}$	$V_{IN} = 120 V_{AC}$	50	100 %
Conduction angles with turn-on & turn-off & full brightness for TRIAC & ELV	VON_TRIA C	Turn-on	16	VAC
	VOFF_TRIA C	Turn-off	15	VAC
	VMIN_TRIA C	Light Minimum	30	VAC
	VFull_TRIA C	Light Maximum	110	VAC

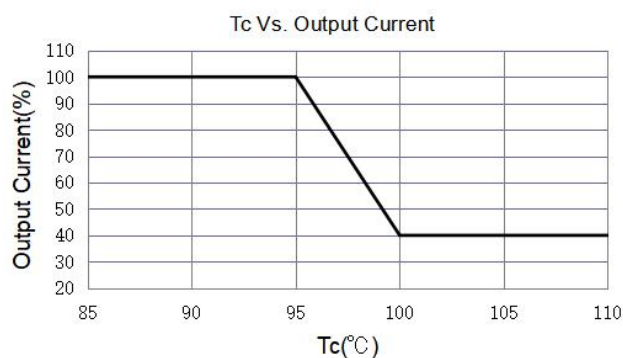
Compatible Phase Cut Dimmers

1	Acuity	INC Forward	Sensor Switch WPD WH
2	Lutron	INC Forward	Diva DVCL-153P
3	Lutron	INC Forward	Caseta PD-6WCL
4	Lutron	ELV Reverse	Diva DVELV-300P
5	Leviton	ELV Reverse	Illumatech IPE04
6	Acuity	PA	Fresco LMPM 2D 2L

7	Acuity	PA	nLight NPP PCD EFP
8	Acuity	PA	nLight RPP PCD EFP G1

Protection

Over Voltage Protection	V_{OVP}	The unit will recover automatically after fault conditions is removed.		60		V
Over Temp. Protection	T_{OTP}	Programmable Current decrease linearly when hotspot greater than T_{OTP} please see OTP curve		95		°C
Over load protection	POLP	Programmable. Output current will decrease when output power reach POLP	20		50	W
OLP tolerance	tOLP		100		110	%
Short Circuit Protection	The unit will recover automatically after fault conditions is removed.					

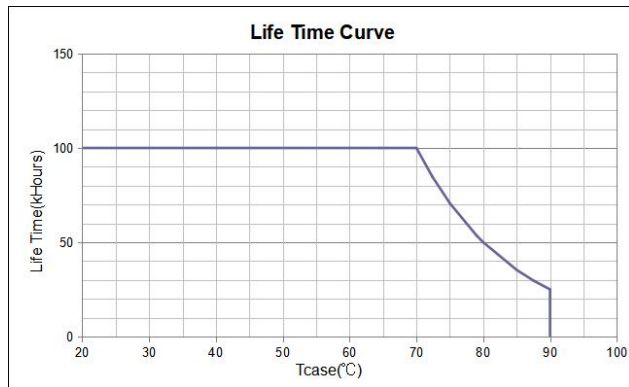


Environment

Storage Temperature	$T_{Storage}$	Humidity: 5% RH to 95% RH	-40	-	+85	°C
Ambient Operating Temperature	T_a		-25	-	+50	°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 meter			24	dBA
Cooling	Convection Cooling					
IP Rating	Dry and damp 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}			135		g
Warranty	5 Years Warranty at $T_c \leq 85^\circ\text{C}$					
Flicker	IEEE 1789, title 24					



Safety Compliance

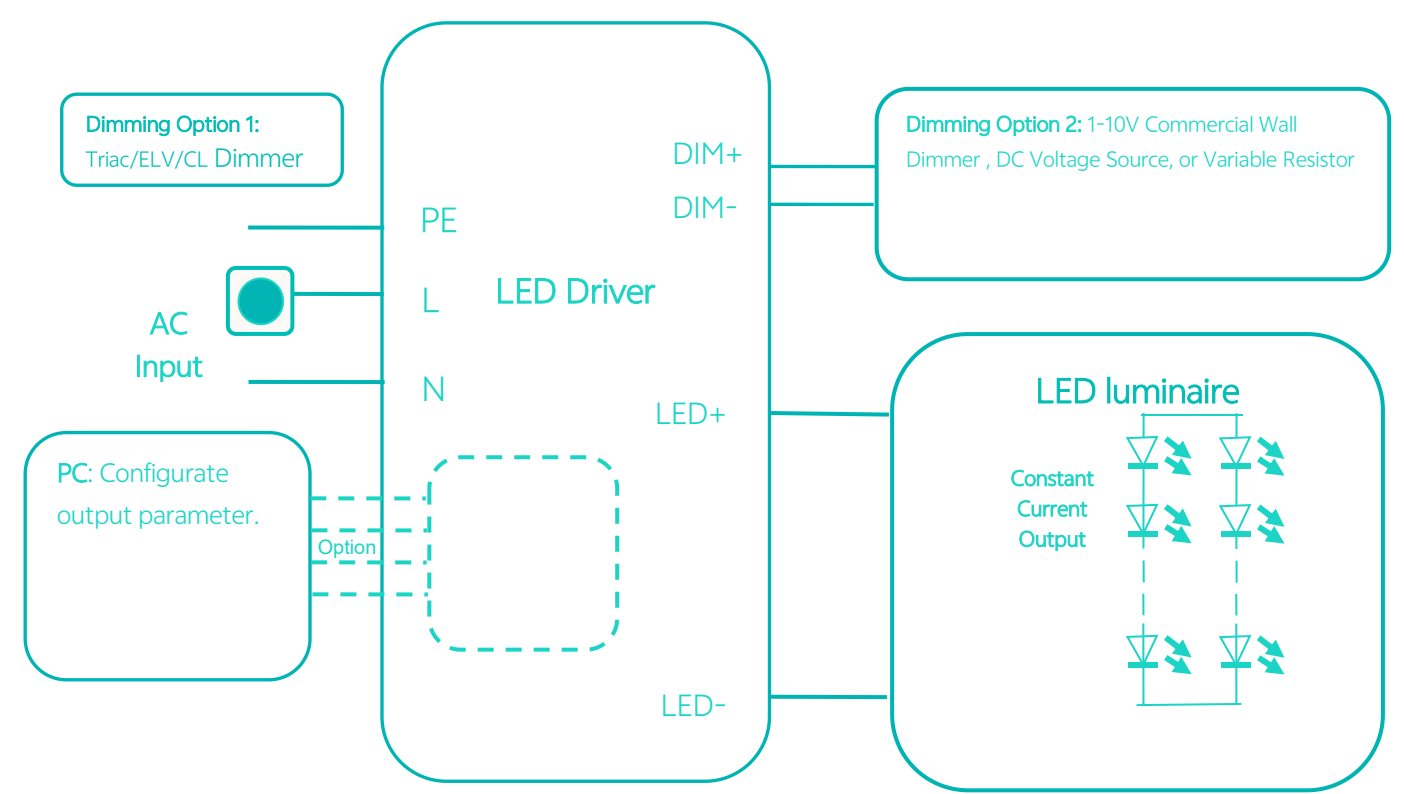
CUL/UL	UL8750, CAN/CSA-C22.2 No. 250.13
Isolation	2xU+1KV: Input - Output
	2xU+1KV: Input - 0-10V/Control
	500Vc: Output - 0-10V/Control
	500V: Output/0-10V/Control- Enclosure

Electromagnetic Compliance

EMC Requirements	Standard	Conditions
EMI Emissions	FCC Title 47 Part 15	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/IEEE C62.41-2002	± 2kV Common and Differential Mode, test at 2 Ω, 5 strikes/1minute interval (40 total strikes)
	ANSI/IEEE 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 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	TBD	TBD	TBD

Mechanical Drawing:(D58*H27mm/D2.2*H1 in.)

Dimensions(Unit:mm)

Default tolerance:±1mm

