VEGA 75W - 320W FPD IP67



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Highlights & Features

- Constant current design
- Universal AC input voltage from 99-305Vac
- High efficiency up to 95%
- Wide operating temperature range -40°C ~ +60°C
- With IP67 protection for most outdoor applications
- Built-in Active PFC and conforms to harmonic current IEC/EN 61000-3-2. Class C
- Adjustable constant current level through program tool
- Common mode 6kV and differential mode 6kV surge
- Suitable for Dry / Damp / Wet location
- 5 years warranty

Safety Standards











General Description

TCI LED drivers come in different series to suit different application needs. The VEGA 75W - 320W FPD IP67 series features program. output current level. All the models come in full corrosion resistance aluminum casing and major international safety certifications. VEGA 75W - 320W FPD IP67 series offers the capability to achieve different level of LED brightness via built-in 1-10V dimming function to meet various application and energy optimization needs. The products are designed and rigorously tested to work with various indoor and outdoor LED lighting conditions. Featuring high surge immunity (CM: 6kV, DM: 6kV) and complying to IP67 make TCI VEGA 75W -320W FPD IP67 series an essential part of an energy efficient LED lighting power solution for both indoor and outdoor applications.

Model Information

Model Number	Input Voltage Range	Output Voltage	Program Output Current Range	Constant Power Current Range
VEGA 75/500-1400 FPD IP67 / 127804	110-277Vac Typical (99-305Vac) Range 110-277Vac (for North America) 220-240Vac (for European Union/Europe)	36-107Vdc	500 – 1400mA	700 – 1400mA
VEGA 100/600-1400 FPD IP67 / 127805		47-143Vdc	600 – 1400mA	700 – 1400mA
VEGA 150/600-1400 FPD IP67 / 127806		72-214Vdc	600 – 1400mA	700 – 1400mA
VEGA 200/600-1400 FPD IP67 / 127807		75-190Vdc	600 – 1400mA	1050 – 1400mA
VEGA 250/600-1400 FPD IP67 / 127808		90-238Vdc	600 – 1400mA	1050 – 1400mA
VEGA 320/600-1400 FPD IP67 / 127807		90-225Vdc	700 – 2100mA	1400 – 2100mA



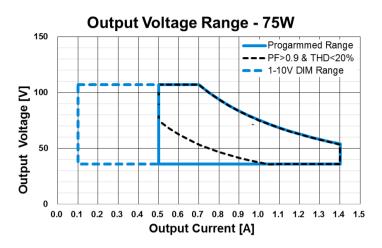
VEGA 75W - 320W FPD IP67

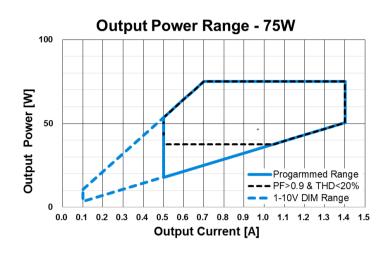
Model Number		VEGA 75/500-1400 FPD IP67	VEGA 100/600-1400 FPD IP67	VEGA 150/600-1400 FPD IP67	VEGA 200/600-1400 FPD IP67	VEGA 250/600-1400 FPD IP67	VEGA 320/700-2100 FPD IP67		
Input Ratings / Characteristics									
Nominal Input Voltage		110-277Vac (99-305Vac)							
Nominal Input Frequen	ісу	50-60Hz (47-64Hz)							
Power Factor		Full Load: >0.98@110/120Vac, >0.95@230Vac, >0.92@277Vac; >70% Load: >0.90@110/120/230Vac; >50% Load: >0.90@277Vac;							
Total Harmonic Distort	ion	THD<20% with load ≥ 50% at 110/120/230Vac input and load ≥ 75% at 277Vac input							
Max. Input Current	110Vac	0.78A	1.04A	1.67A	2.1A	2.6A	3.23A		
Efficiency at 100%	120Vac	90%@0.7A	90.5%@0.7A	91.5%@0.7A	93%@1.05A	93.0%@1.05	93%@1.4A		
Load (Typical), Tested after 30	230Vac	92%@0.7A	92.5%@0.7A	93.0%@0.7A	94%@1.05A	94.5%@1.05	94.5%@1.4A		
minutes warm up.	277Vac	92%@0.7A	93.0%@0.7A	93.0%@0.7A	94%@1.05A	94.5%@1.05	94.5%@1.4A		
Inrush Current	120Vac	40A/250uS	40A/250uS	60A/250uS	120A/200uS	140A/150uS	90A/250uS		
(Apk / 50%-us) (Cold Start)	230Vac	65A/250uS	65A/250uS	110A/250uS	180A/200uS	280A/150uS	180A/250uS		
	277Vac	80A/250uS	80A/250uS	130A/250uS	220A/200uS	320A/150uS	220A/250uS		
Max. No.of drivers	B16	8	8	5	4	2	3		
MCB at 230Vac	C16	14	12	8	6	4	5		
Leakage Current		<0.7mA peak @ 277Vac							
Standby Power		<0.5W @ Dim to off, 230Vac & 277Vac							
Input Over-voltage		Can survive input over-voltage stress of 320VAC for 48 hours and 350VAC for 2 hours							
Output Ratings / Cl	haracteris	stics							
Output Power		75W	100W	150W	200W	250W	320W		
Output Voltage		36-107Vdc	47-143Vdc	72-214Vdc	75-190Vdc	90-238Vdc	90-225Vdc		
Max. No Load Output \	√oltage	120Vrms	150Vrms	250Vrms	230Vrms	250Vrms	250Vrms		
Adjustable Output Curr	rent	500-1400mA	600-1400mA	600-1400mA	600-1400mA	600-1400mA	700-2100mA		
(AOC)		With steps of 1 mA, configurable via software							
Minimum Output Current		100mA (Min dim level)							
Current Accuracy		± 5% (@ Typical output current range)							
Line / Load Regulation		± 1% (@ 110-277Vac input) / ± 3% (@ Min-Max output voltage)							
Output Current LF Ripple		5% (ripple = peak-average/average) at full load							
Start-up Time		500ms max. @ 110-277Vac (full load)							
Hold-up Time		16ms typ. @ 110-277Vac (full load)							

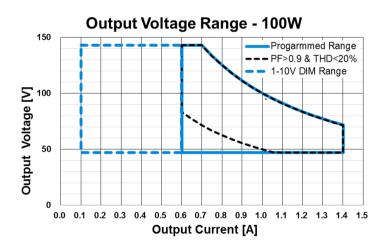


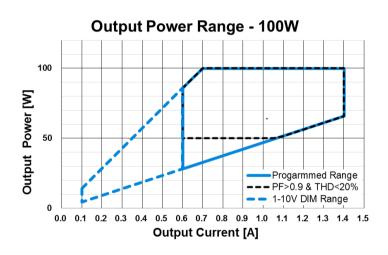
VEGA 75W - 320W FPD IP67

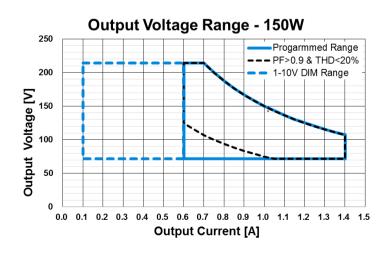
Operational Window

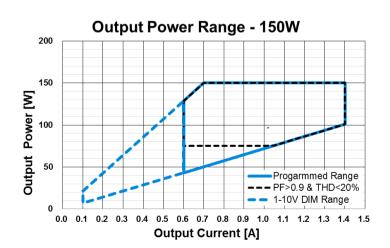








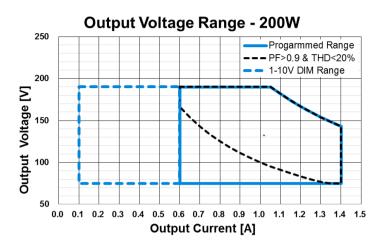


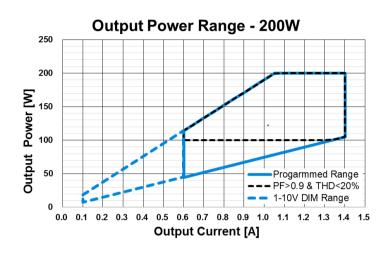


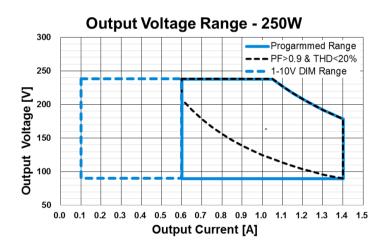


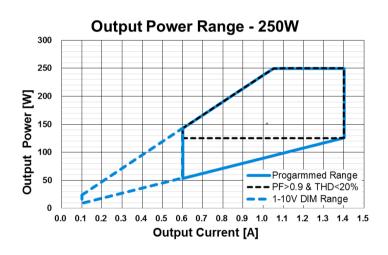
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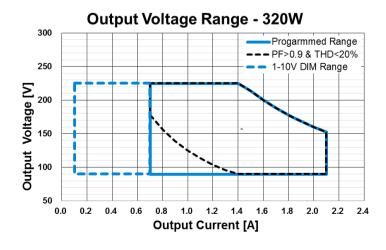
Operational Window

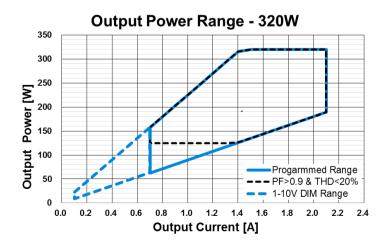














VEGA 75W - 320W FPD IP67

Model Number		VEGA 75/500-1400 FPD IP67	VEGA 100/600-1400 FPD IP67	VEGA 150/600-1400 FPD IP67	VEGA 200/600-1400 FPD IP67	VEGA 250/600-1400 FPD IP67	VEGA 320/700-2100 FPD IP67		
Mechanical									
Casing		Aluminum colo	or : Natural						
Dimensions (L.)	v W v D) mm	Aluminum, color : Natural 174*68*37							
Unit Weight (gra	,	900	900	1100	1200	1300	2000		
Noise (30cm dis	•				1200	1300	2000		
Wire	Input	Sound Pressure Level (SPL) < 24dBA Line: Brown, Neutral: Blue, PE: Yellow/Green, Cable Length 300mm							
VVIIC	Output		n, Negative: Blue;						
	Dimming		Dim(-): Gray, +12						
		Dirii(+). Violet,	Dilli(-). Glay, +12	.v. biack/vviille, c	able Length 3001	11111			
Environment		10001 1000	/			10:0 . 55:0	1000 . 5000		
Ambient Temperature	Operating	-40°C to +60°C (+60°C ~ +70°C Load de-rating) -40°C~ +55°C -40°C~ +50°C							
	Storage	-40°C to +85°C	0.500	0.500	0000				
Maximum Case	· ·	+85°C	+85°C	+85°C	+90°C	+90°C	+90°C		
Power De-rating	g	>60°C(75/100/150/200W), >55°C(250W), >50°C(320W) de-rating power & <110Vac de-rating power "OUTPUT LOAD VS INPUT VOLTAGE" & "OUTPUT LOAD VS AMBIENT TEMPERATURE"							
Humidity	Operating	10 to 90% RH (Non-Condensing)							
	Storage	5 to 95% RH (N	Non-Condensing)						
Shock Test (Non-Operating) IEC 60068-2-27, Half Sine Wave: 50G for a duration of 11ms, 3 shocks for each					ocks for each 3 di	rections			
Vibration (Non-	Operating)	IEC 60068-2-6, Random: 5Hz to 500Hz (2.09G); 20 min per axis for all X, Y, Z direction							
Protections									
Over Voltage		108-120Vdc	144-160Vdc	215-250Vdc	191-230Vdc	239-250Vdc	226-250Vdc		
		Auto-Recovery when the fault is removed							
Over Load		Reduce output	current. Auto-Red	covery when the f	ault is removed				
Over Temperature Reduce output current. Auto-Re				Recovery when the fault is removed					
Output Short Ci	rcuit	Auto-Recovery	Auto-Recovery when the fault is removed						
Suitable for Luminaires Class Class I. Insulation Class according to IEC60598									
Reliability Da	nta								
Lifetime 50,000 hours at case temp. tc= +80°C & full load. Refer to "LIFETIME VS CASE TEMPERATURE CASE TEMPE					IPERATURE"				
MTBF 500 khours at ta=+50°C (75-250W), ta=+45°C (320W), Telcordia SR-332.									
Warranty life		5 years at ta=+	50°C (75-250W),	ta=+45°C (320W)					



VEGA 75W - 320W FPD IP67

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Certificates and standards								
Safety	CB scheme to IEC 61347-1, IEC 61347-2-13 (independent) ENEC to EN 61347-1, EN 61347-2-13 UL/cUL (cRUus) to UL 8750, type"HL" & type"TL" Compliance to IEC/EN/UL 60950-1 SELV for 75W							
CE		In conformance with EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC						
Galvanic		Mains (Input)	Earth ((Case)	Output/PROG	DIM +/	′- & +12V	
Isolation	Mains (Input)	N/A	1875V		3750V	3750V		
	Earth (Case)	1875V	N/A		1875V	1875V		
	Output/PROG	3750V	1875V		N/A	1875V		
	DIM +/- &+12V	3750V	1875V		1875V	N/A		
EMC Com	EMC Compliance							

EMC / Emissions	Compliance to EN 55015:2013 Class B; 47 CFR FCC Part 15, Subpart B, Class B					
Immunity to	Compliance to EN 61547:2009	Compliance to EN 61547:2009				
Electrostatic Discharge	IEC 61000-4-2:2008 ED.2.0	ESD, Criteria A ¹ or B ² Air Discharge: 8kV Contact Discharge: 4kV				
Radiated Field	IEC 61000-4-3:2010 ED.3.2	RS, Criteria A ¹ 80MHz-1GHz, 3V/m with 1kHz Sine Wave / 80% AM Modulation				
Electrical Fast Transient / Burst	IEC 61000-4-4:2012 ED.3.0	EFT, Criteria A ¹ or B ² 1kV				
Surge	IEC 61000-4-5:2014 ED.3.0	Criteria A ¹ or B ² Common Mode ³ : 6kV; Differential Mode ⁴ : 6kV 1.2/50µs, 8/20µs Combination Wave with 2ohms (L-N), 12ohms (L-PE & N-PE) source impedance				
Conducted	IEC 61000-4-6:2013 ED.4.0	CS, Criteria A ¹ 150kHz-80MHz, 3Vrms				
Power Frequency Magnetic Fields	IEC 61000-4-8:2009 ED.2.0	PFMF, Criteria A ¹ 3A/Meter				
Voltage Dips	IEC 61000-4-11:2004 ED.2.0	Criteria A ¹ or B ² ; 100% dip; 0.5 cycle; Self Recoverable 30% dip; 10 cycle; Self Recoverable				
Harmonic Current Emission	IEC 61000-3-2:2014	Class C (230Vac @ ≥ 50% load)				
Voltage Fluctuation & Flicker	IEC 61000-3-3:2013					

- 1. Criteria A: Normal performance within the specification limits
- 2. Criteria B: Temporary degradation or loss of function which is self-recoverable
- 3. Asymmetrical: Common mode (Line to earth)
- 4. Symmetrical: Differential mode (Line to line)



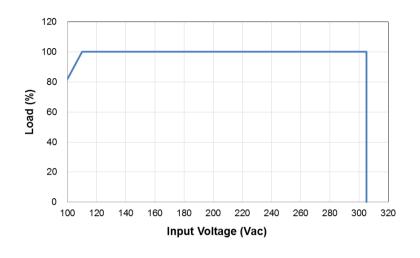
VEGA 75W - 320W FPD IP67

Model Number	VEGA 75/500-1400 FPD IP67	VEGA 100/600-1400 FPD IP67	VEGA 150/600-1400 FPD IP67	VEGA 200/600-1400 FPD IP67	VEGA 250/600-1400 FPD IP67	VEGA 320/700-2100 FPD IP67		
1-10V Dimming Specification								
Absolute Maximum Voltage	+/- 20V							
Source Current	200uA +/- 50uA	200uA +/- 50uA						
Dimming Input Range	 0-10V, 1.2V (+/-0.1V) is 10% of lo_set or 100mA minimum,≥8.5V is 100% of lo_set. Lower than 1.1V (+/-0.1V) → Dim to off is programmable. 0.1V Hysteresis. Short is 0% (dim to off) Open is 100% See 0-10V Dimming Curve 							
Dimming Current Tolerance	+/- 10% of max	imum setting out	out current. Ex. lo	_set=1000mA, to	lerance is +/-100r	nA.		
Default settings of the drive	er (can be cha	nged with prog	rammer tools)					
Adjustable Output Current (AOC)	700mA	700mA	700mA	1050mA	1050mA	1400mA		
0-10V DIM	Enabled (DIM t	o OFF). Selectab	le for Min. Dim Le	evel and Min. & Ma	ax. Dim Voltage t	hough Tools		
Smart Time DIM	Disabled (Only	Disabled (Only one function will be enabled between 0-10V & Smart Time Dim)						
Module Temperature Protection (MTP)	Disabled. Settable though programmable tools							
Constant Lumen Output (CLO)	Disabled. Settable though programmable tools.							
End of Life indication (EOL)	Disabled. Settable though programmable tools							
DALI	Not ready (Plan for GB version), According IEC 62386 -101/102/207							
Auxiliary Output Voltage								
+12V Output Range	+12Vdc (10.8 – 13.2Vdc)							
+12V Output Current	50mA							
Maximum Output Power	0.6W							

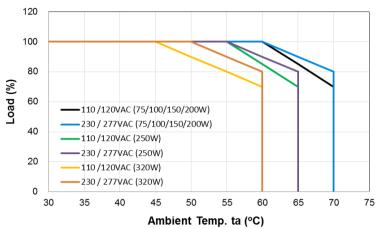


VEGA 75W - 320W FPD IP67

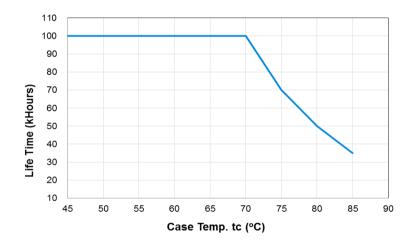
OUTPUT LOAD VS INPUT VOLTAGE



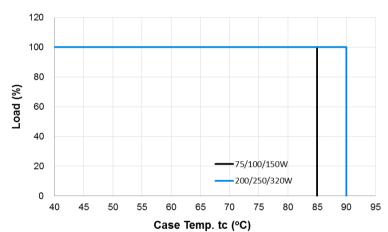
OUTPUT LOAD VS AMBIENT TEMPERATURE



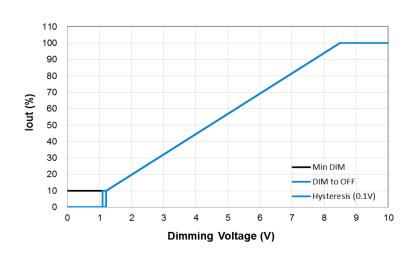
LIFETIME VS CASE TEMPERATURE



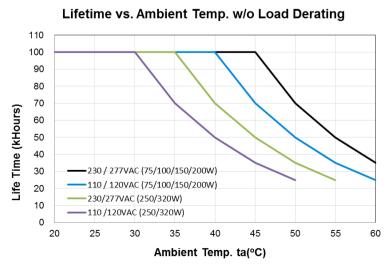
OUTPUT LOAD VS CASE TEMPERATURE



DIMMING CURVE



LIFETIME VS AMBIENT TEMPERATURE





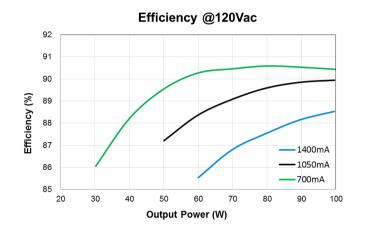
VEGA 75W - 320W FPD IP67

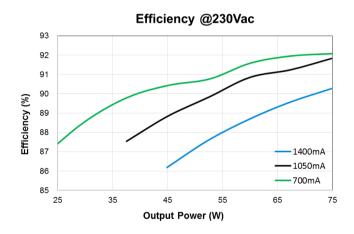
EFFICIENCY versus OUTPUT POWER

VEGA 75/500-1400 FPD IP67 - 75W

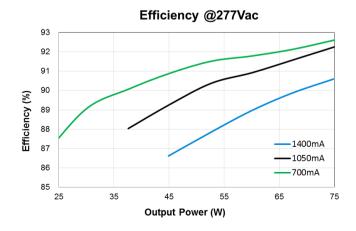
Efficiency @120Vac 92 91 90 89 Efficiency (%) 88 87 1400mA 86 -1050mA 85 700mA 84 25 35 55 65 75 Output Power (W)

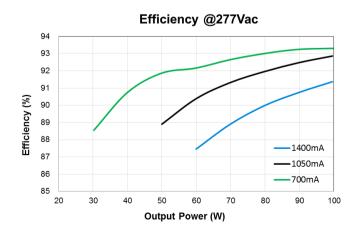
VEGA 100/600-1400 FPD IP67 - 100W





Efficiency @230Vac 94 93 92 91 Efficiency (%) 90 89 88 1400mA 87 1050mA 86 700mA 85 20 30 90 100 Output Power (W)







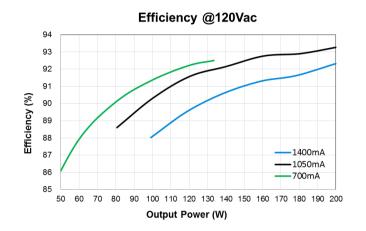
VEGA 75W - 320W FPD IP67

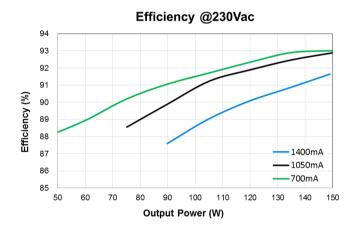
EFFICIENCY versus OUTPUT POWER

VEGA 150/600-1400 FPD IP67 - 150W

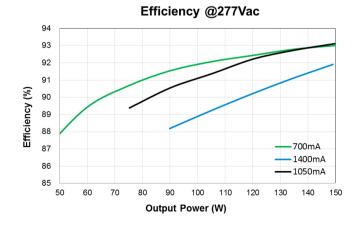
Efficiency @120Vac 94 93 92 91 Efficiency (%) 90 89 88 1400mA 87 1050mA 86 700mA 85 50 100 110 130 140 Output Power (W)

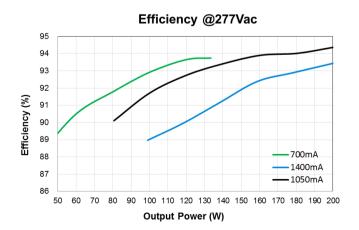
VEGA 200/600-1400 FPD IP67 - 200W





S 95 94 93 92 99 90 90 88 88 87 86 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 Output Power (W)







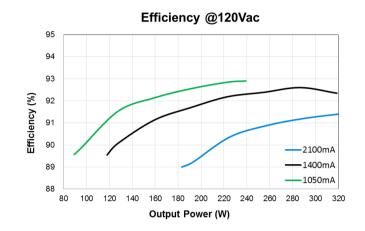
VEGA 75W - 320W FPD IP67

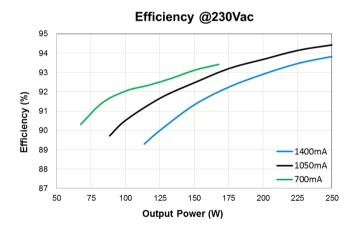
EFFICIENCY versus OUTPUT POWER

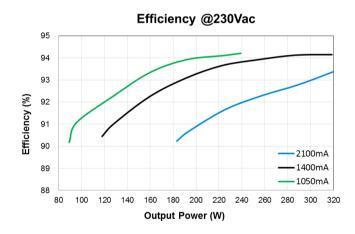
VEGA 250/600-1400 FPD IP67 - 250W

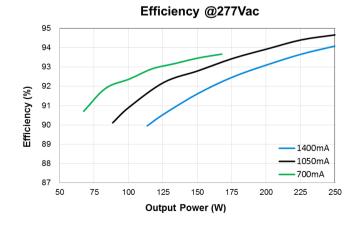
Efficiency @120Vac 95 94 93 92 Efficiency (%) 91 90 89 1400mA 1050mA 88 700mA 87 50 150 175 Output Power (W)

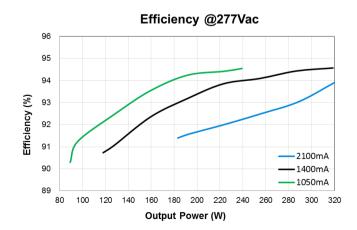
VEGA 320/700-1400 FPD IP67 - 320W







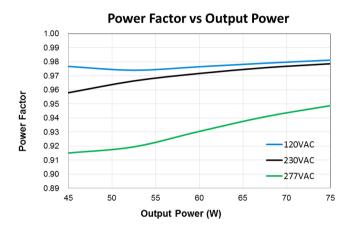




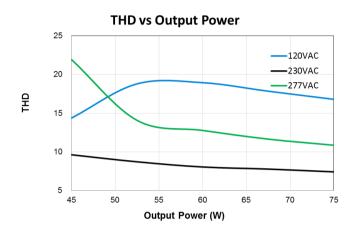


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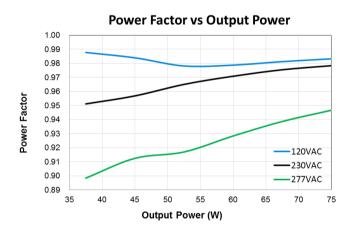
- POWER FACTOR versus OUTPUT POWER
- VEGA 75/500-1400 FPD IP67 1400mA

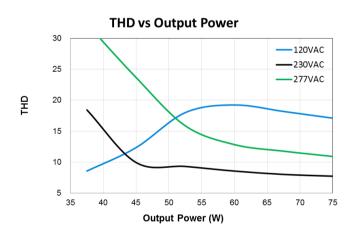


 TOTAL HARMONIC DISTORTION versus OUTPUT POWER

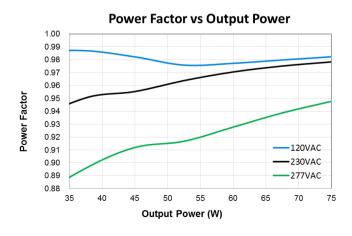


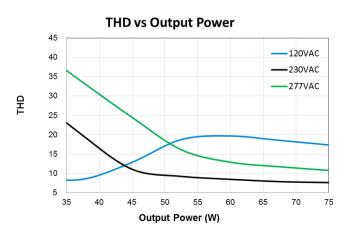
VEGA 75/500-1400 FPD IP67 – 1050mA





VEGA 75/500-1400 FPD IP67 – 700mA

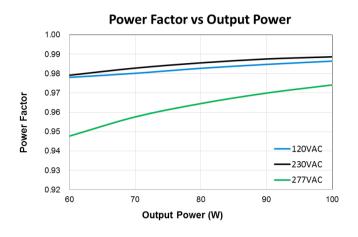




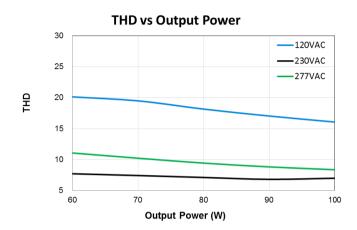


VEGA 75W - 320W FPD IP67

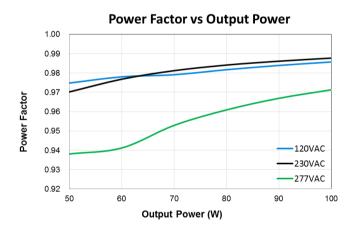
- POWER FACTOR versus OUTPUT POWER
- VEGA 100/600-1400 FPD IP67 1400mA

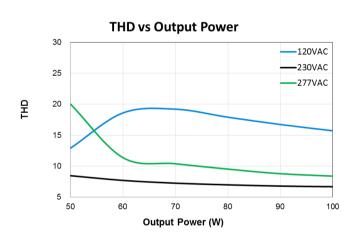


 TOTAL HARMONIC DISTORTION versus OUTPUT POWER

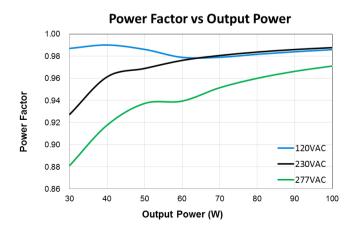


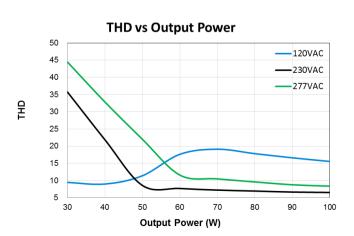
VEGA 100/600-1400 FPD IP6 – 1050mA





VEGA 100/600-1400 FPD IP6 – 700mA

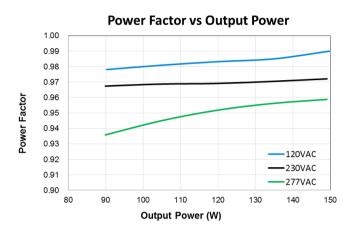




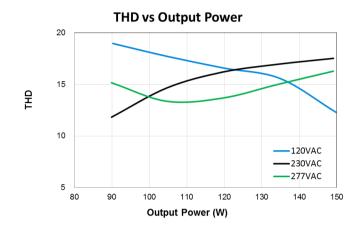


VEGA 75W - 320W FPD IP67

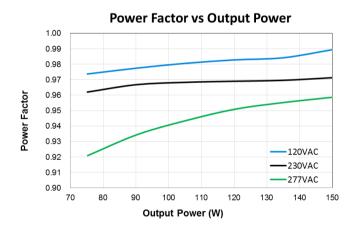
- POWER FACTOR versus OUTPUT POWER
- VEGA 150/600-1400 FPD IP67 1400mA

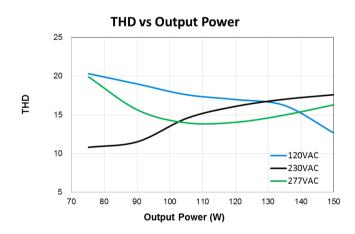


 TOTAL HARMONIC DISTORTION versus OUTPUT POWER

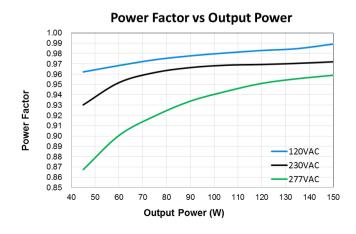


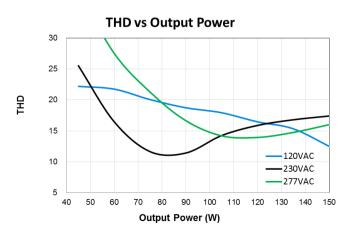
VEGA 150/600-1400 FPD IP67 – 1050mA





VEGA 150/600-1400 FPD IP67 – 700mA

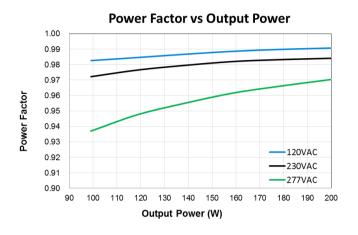




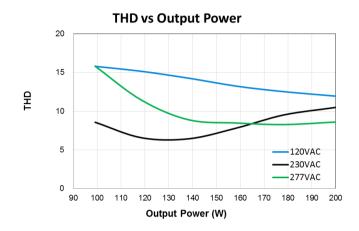


VEGA 75W - 320W FPD IP67

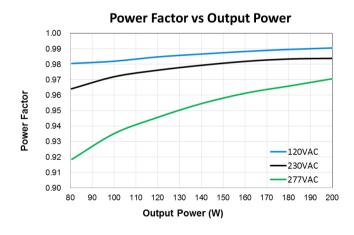
- POWER FACTOR versus OUTPUT POWER
- VEGA 200/600-1400 FPD IP67 1400mA

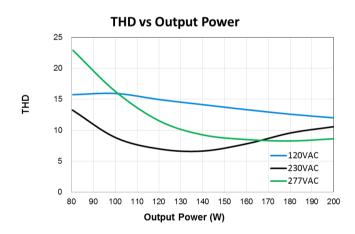


 TOTAL HARMONIC DISTORTION versus OUTPUT POWER

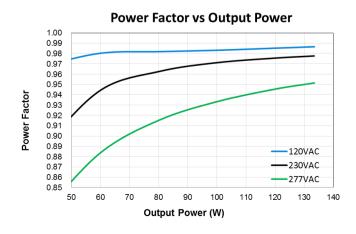


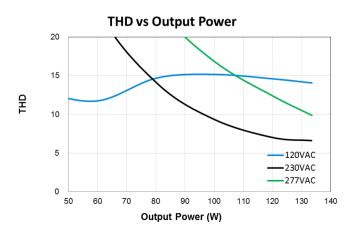
VEGA 200/600-1400 FPD IP67 – 1050mA





VEGA 200/600-1400 FPD IP67 – 700mA

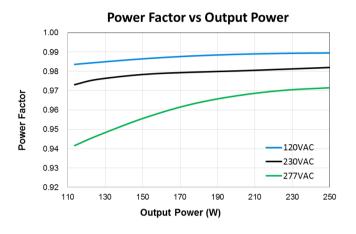




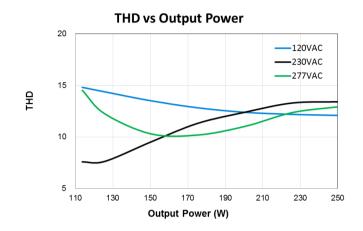


VEGA 75W - 320W FPD IP67

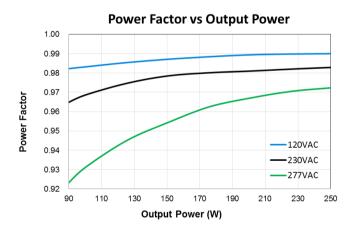
- POWER FACTOR versus OUTPUT POWER
- VEGA 250/600-1400 FPD IP67 1400mA

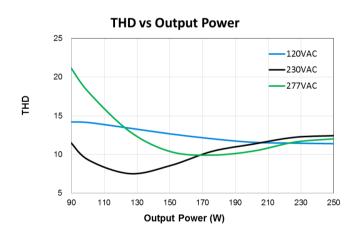


 TOTAL HARMONIC DISTORTION versus OUTPUT POWER

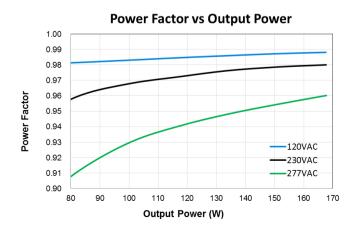


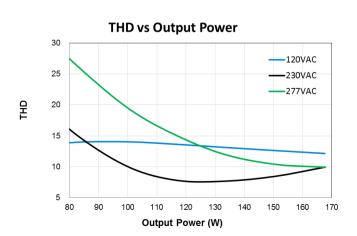
VEGA 250/600-1400 FPD IP67 – 1050mA





VEGA 250/600-1400 FPD IP67 – 700mA

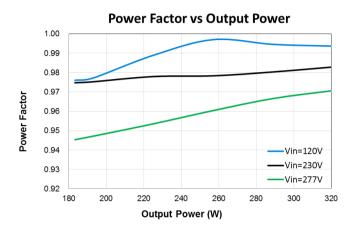




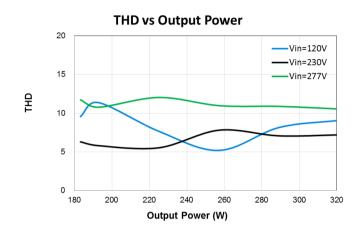


VEGA 75W - 320W FPD IP67

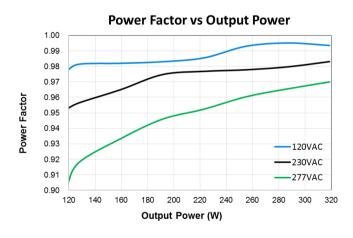
- POWER FACTOR versus OUTPUT POWER
- VEGA 320/600-1400 FPD IP67 2100mA

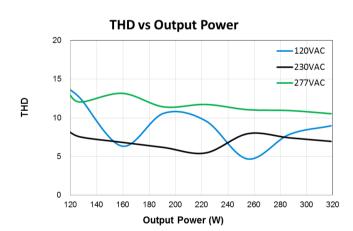


 TOTAL HARMONIC DISTORTION versus OUTPUT POWER

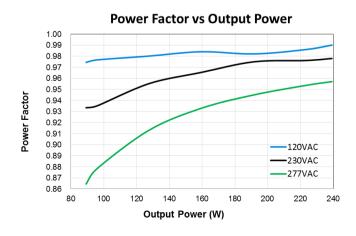


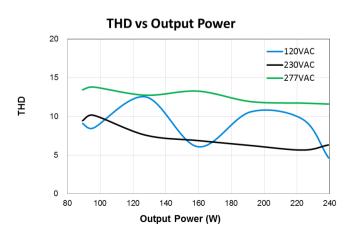
VEGA 320/600-1400 FPD IP67 – 1400mA





VEGA 320/600-1400 FPD IP67 – 1050mA

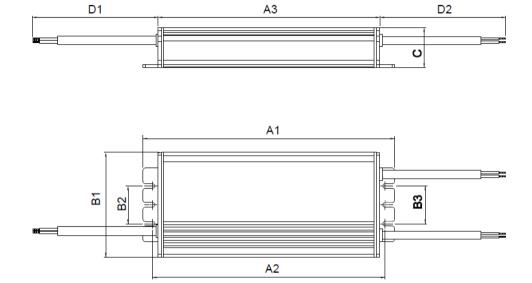






VEGA 75W - 320W FPD IP67

- Dimensions
- 320W

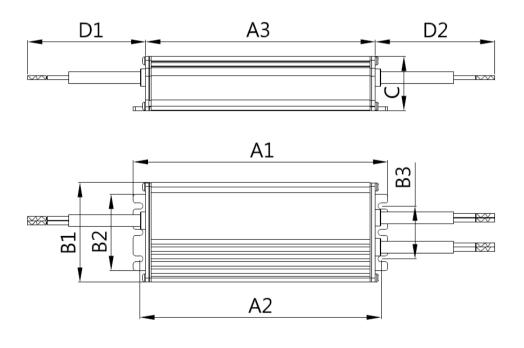


Length (A1): 240mm Width (B1): 100mm Height (C): 38mm

Fixing hole distance (A2): 222mm Fixing hole distance (B2): 70mm Fixing hole distance (B3): 36mm

Body length (A3): 211mm Input cable (D1): 300mm Output cable (D2): 300mm Dimming cable (D2): 300mm

250W / 200W / 150W / 100W / 75W



Length (A1): 240mm (250W/200W); 220mm (150W); 174mm (100W/75W)

Width (B1): 68mm Height (C): 37mm

Fixing hole distance (A2): 231mm (250W/200W); 211mm (150W); 165mm (100W/75W)

Fixing hole distance (B2): 52mm Fixing hole distance (B3): 36mm

Body length (A3): 223mm (250W/200W); 203mm (150W); 157mm (100W/75W)

Input cable (D1): 300mm Output cable (D2): 300mm Dimming cable (D2): 300mm

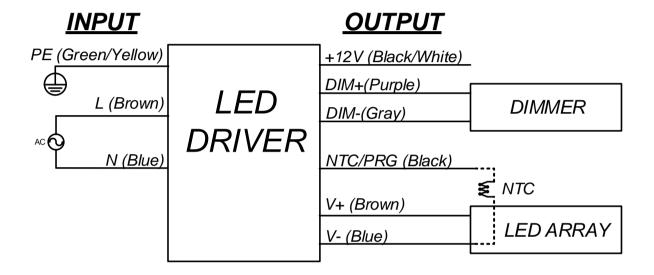


VEGA 75W - 320W FPD IP67

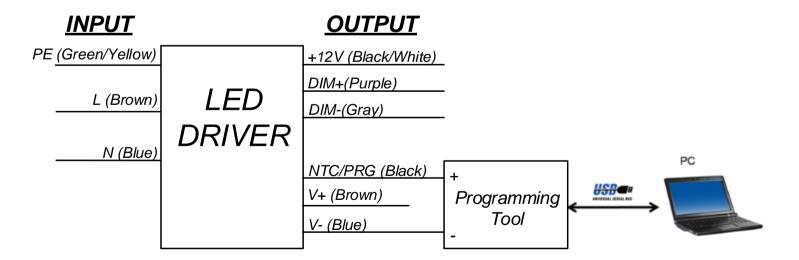
Wiring Connection

Module Temperature Protection (MTP)

The LEDs are thermally protected by the driver's NTC (Negative Temperature Coefficient resistor) interface, which ensures the output current will be reduced when a critical temperature is reached. Connect an NTC on the LED module to the LED driver associated wires as shown in the wiring diagram below.



Programming Setup
 Programming doesn't require powering up input voltage or connecting the LED Module to the driver



LINK TO DOWNLOAD PROGRAMMING SOFTWARE

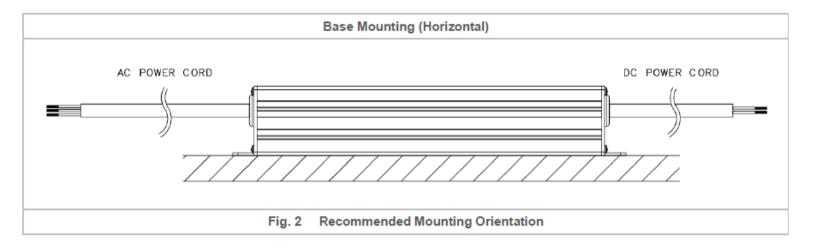
www.tci.it/TCl tools/FPD PROGRAMMING TOOL 127098.zip



VEGA 75W - 320W FPD IP67

Assembly & Installation

The device is not recommended to be placed on low thermal conductive surfaces. For example, plastics.



Safety Instructions

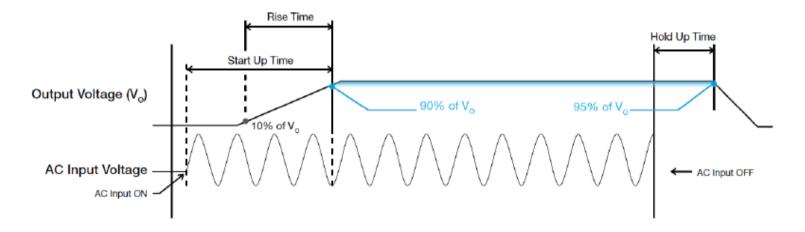
- ALWAYS switch mains of input power OFF before connecting and disconnecting the input voltage to the device. If mains are not turned OFF, there is risk of explosion / severe damage.
- To guarantee sufficient convection cooling, keep a distance of 50mm above and lateral distance to other units.
- · DO NOT insert any objects into the device.
- When the PE terminal is not connected, the device must be installed on a metal plate with PE connection.
- The current rating for the output cable must be rated higher than or equal to the output current of the power supply. Please refer to the product specifications.
- For device with dimming function, always ensure the dimming control is working properly. "Dimming 0-10V" shall be insulated from AC mains by reinforced insulation.



VEGA 75W - 320W FPD IP67

Functions

- · Start-up Time
 - The time required for the output voltage to reach 90% of its set value, after the input voltage is applied.
- · Rise Time
 - The time required for the output voltage to change from 10% to 90% of its set value.
- Hold-up Time
 - Hold up time is the time when the AC input collapses and output voltage retains regulation for a certain period of time. The time required for the output to reach 95% of its set value, after the input voltage is removed.
- Graph illustrating the Start-up Time, Rise Time, and Hold-up Time



Inrush Current

Inrush current is the peak, instantaneous, input current measured and, occurs when the input voltage is first applied. For AC input voltages, the maximum peak value of inrush current will occur during the first half cycle of the applied AC voltage. This peak value decreases exponentially during subsequent cycles of AC voltage.

