

PRODUCT DATASHEET LVED FP 150/1.05-1.50/IP67 VS10

FULL PROGRAMMABLE OUTDOOR DRIVER



AREAS OF APPLICATION

- Street and urban lighting
- Industry
- Suitable for outdoor applications in luminaires
- Suitable for use in outdoor luminaires of protection

PRODUCT FAMILY FEATURES

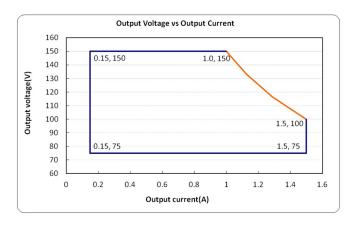
- Rated input voltage range 220~240Vac
- Constant power design, output current programming adjustable
- Offline programmable
- 3-in-1 dimmable: 1~10Vdc, PWM, Timer dimming
- Output and Dimming Signal Isolating
- Surge protection: DM 5KV, CM 10KV
- Protections: SCP, OVP, OTP
- IP67 design for indoor and outdoor applications
- Suitable for dry / damp / wet locations
- 5 years warranty

TECHNICAL DATA

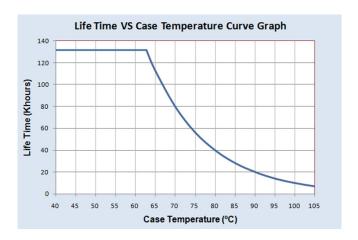
Electrical data

Max. Duple Newer (VP)					
Tou. 1	Max Output Power (W)	150W			
Output Current Adjustable Range (A) 0.15-150A Default Output Current Setting(A) 75-100V/150A Typical Efficiency (2) 91% Overwer Factor 0.97 Output P, STT, LM (act full load) 41 Output Woltage 201, A60 Vac Input Voltage Min : 90Ver, Max : 305Vac (Full load output at 175-305VAC input condition, less than 175Vac driver can work property, the autput current will be reduced) Input AC Current Min : 471xL, MaxSET, Type 50xGHz Leakage Current 0.70mA (240Vac/60Hz) Input AC Current 1.4 (220-24Mbrc & Rhill load) Input AC Current 1.4 (220-24Mbrc & Rhill load) Insula Current Min : 0.96 it Type : 1078, 158 (230Vac, 50 60Hz, 100% load) Power Factor Min : 0.96 it Type : 1078, 158 (230Vac, 50 60Hz, 100% load) ThD Type : 1078, 158 (230Vac, 50 60Hz, 100% load) That Quarter Current Ripole(pic pic) Type : 1078, 158 (230Vac, 50 60Hz, 100% load) Startup Overshoot Current Min : 104 (200 40K & 100% load) No Load Output Voltage Type : 1078, Max : 36% (25 °C ± 10°C ambient temperature, large to the properature, large to the properature, 250 Vac, 250 Max is 40 Max : 100 (25 Max is 10 Max is 100 Max is 10 Max is 100 Max is 10 Max is 100 Max is 10 Max is 10 Max is 10 Ma	Output Voltage Range (Vdc)	75-150V			
Default Output Current Setting(A) Typical Efficiency (2) Power Factor Output P.STL (lef full load) Output SVM (et full load) Que to SVM (et full load) Anaed Input Voltage Input Voltage Input Voltage Input Frequency Min : 1970/rc, Max : 5057/rc, (Tall load) output et 1.75 : 5057/rc (input condition, less than 1.75 //oc driver can work properly; the output current will be reduced) input Frequency Min : 1971/rc, Max : 5857/rc, (Tall load) Input AC Current Que to Current Que to Current Max : 75 / (230/oc & full load) Invus A Current Min : 2076, Type : 109, Type :	Full Power Voltage Range (V)	100-150V			
Sprice February Sprice	Output Current Adjustable Range (A)	0.15-1.50A			
Power Factor 0.97 Output P, ST, LM (at full load) 41 Output SWM (at full load) 20.4 Asked Input Voltage 220.240 Vac Input Voltage 220.240 Vac Input Voltage 220.240 Vac Input Voltage 220.240 Vac Input Frequency Min : 919Vac , Max : 305Vac (Full load output at 175-305VAC Input condition, teas than 175 vac driver can work properly the output current will be reduced) Input AC current 0.70mA (240Vac/60Hz) Input AC current 1.12/20-240Vac & full load) Inrush Current Min : 90% (370Vac, 50-60Hz) Input AC current Min : 90% (370Vac, 50-60Hz, 100% load) Power Factor Min : 90% (370Vac, 50-60Hz, 100% load) THO Type : 10%, 15% (230Vac, 50-60Hz, 100% load) Output Current Ripple(pic-pic) Min : 90% (370Vac, 50-60Hz, 100% load) Output Current Ripple(pic-pic) Min : 90% (370Vac, 50-60Hz, 100% load) Output Current Ripple(pic-pic) Min : 90% (370Vac, 50-60Hz, 100% load) Unit Current Ripple(pic-pic) Min : 90% (370Vac, 50-60Hz, 100% load) Unit Current Ripple(pic-pic) Min : 90% (370Vac, 50-60Hz, 100% load) Unit Current Ripple(pic-pic) Min : 90% (370Vac, 50-60Hz, 100% load) Unit Current Ripple(pic-pic) Min : 90% (370Vac, 50-60Hz, 100% load) Unit Current Ripple(pic-pic) Min : 90% (370Vac, 50-60Hz, 100% load) Unit Current Ripple(pic-pic) Min : 90% (370Vac, 50-60Hz, 100% load) Unit Current Ripple(pic-pic) Min : 90% (370Vac, 50-60Hz, 100% load) Unit Current Ripple(pic-pic) Min : 90% (370Vac, 50-60Hz, 100% load) Unit Current Ripple(pic-pic) Min : 90% (370Vac, 50-60Hz, 100% load) Unit Current Ripple(pic-pic) Min : 90% (370Vac, 50-60Hz, 100Win load) Unit Current Ripple(pic-pic) Min : 90% (370Vac, 50-60Hz, 100Win load) Unit Current Ripple(pic-pic) Min : 90% (370Vac, 50-60Hz, 100Win load) Unit Current Ripple(pic-pic) Min : 90% (370Vac, 50-60Hz, 100Win load) Unit Current Ripple(pic-pic) Min : 90% (370Vac, 50-60Hz, 100Win load) Unit Current Ripple(pic-pic) Min : 90% (370Vac, 50-60Hz, 100Win load) Unit Current Ripple(pic-pic) Min : 90% (370Vac, 50-60Hz, 100Win load) Unit Current Ripple(pic-pic) Min : 90% (370Vac, 50-60Hz, 100Win load) Unit Current Ri	Default Output Current Setting(A)	75-100V/1.50A			
Output P_ST_LM (at full load) Output SVM (at full load) Output Voltage 720740 Voc Min: 90/war, Max: 30/War (Full load output at 173-30/WAC input condition, tess than 175 War driver can work property, the output current will be reduced) Input Perquency Min: 471z, Max: 631z, Type 50/601z Leakage Current O 70m (A2 60/Wac & Full load) Input AC Current Input AC Current A (220 240 Wac & Full load) Invus Current Min: 906, Type: 897 (220 Wac, 50-601z, 100% fooad) ThD Upe: 1006, 139e: 897 (230 Wac, 50-601z, 100% fooad) ThD Output Current Ripple(ple-ple) Output Current Ripple(ple-ple) ThD Output Current Ripple(ple-ple) The Disput Current Ripple(ple-ple) The Disput Current Ripple(ple-ple) Type: 1008, Max: 30% (2004): 200-601z, 70% 100% fooad) Max: 100% (1220-240 Wac & Full load, LED load, the ripple would be tripy different under different LED load) Startup Overshoot Current Max: 100% (1220-240 Wac & Full load, LED load, the ripple would be tripy different under different LED load) Min: 55%, Max: 50% The Disput Current Ripple(ple-ple) Type: 100% Max: 100% (1220-240 Wac & Full load, LED load, the ripple would be tripy different under different LED load) Min: 55%, Max: 50% The ple-provide Load food be tripy different number different LED load) Min: 55%, Max: 50% Type: 1300, Max: 190 Line Regulation Min: 55%, Max: 50% (25°C+ 10°C ambient temperature, input Voltage 200 Wac, 1004 Changes from 500 Wac to 1000W) Surge Protection Min: 55%, Max: 50% (25°C+ 10°C ambient temperature) Min: 100% (1000-000 Wac, 25°C+ 10°C ambient temperature) Min: 100% (1000-000 Wac, 25°C+ 10°C ambient temperature) Min: 100% (1000-000 Wac, 25°C+ 10°C ambient temperature, 1000-000 Wac,	Typical Efficiency [2]	91%			
Quitout SVM (at full Load)	Power Factor	0.97			
Rated Input Voltage	Output P_ST_LM (at full load)	<1			
Min : 90Vac , Max : 305Vac (Full Load output at 175-305VAC (input condition, less than 175Vac driver can work properly, the output current will be reduced) Input Frequency	Output SVM (at full load)	<0.4			
less than 175/ac driver can work property, the output current will be reduced) Imput Frequency Min - 47Hz, Max 631Hz, Type 50/60Hz Leakage Current 1A (220-240Vac & full Load) Inrush Current 1A (220-240Vac & full Load) Inrush Current Max: 75A (230Vac & full Load) Inrush Current Max: 75A (230Vac & full Load) Inrush Current Min: 0.96, Type: 9.07 (230Vac, 50: 60Hz, 70%-100% load) Type: 10%, 15%, 16% (230Vac, 50: 60Hz, 70%-100% load) Type: 10%, 15%, 16% (230Vac, 50: 60Hz, 70%-100% load) Unjust Current Ripple(pk-pk) Type: 10%, 15%, 16% (230Vac, 50: 60Hz, 70%-100% load) Unjust Current Ripple(pk-pk) Type: 10%, 16%, 16% (230Vac, 50: 60Hz, 70%-100% load) Type: 10%, 16%, 16% (230Vac, 50: 60Hz, 70%-100% load) Min: 55%, 16%, 16% (230Vac, 50: 60Hz, 70%-100% load) Min: 55%, 16%, 16% (230Vac, 50: 60Hz, 70%-100% load) Min: 55%, 16%, 16% (230Vac, 50: 60Hz, 70%-100% load) Min: 55%, 16%, 16% (230Vac, 50: 60Hz, 70%-100% load) Min: 55%, 16% (250Vac, 50: 60Hz, 70%-100% load) Min: 50% (250Vac, 50: 60Hz, 70	Rated Input Voltage	220240 Vac			
Leakage Current 0.70mA (240Vac/60Hz)	Input Voltage				
Input AC Current 1A (220-240Vac & fult load) Inrush Current Max: 75A (230Vac & fult load) Power Factor Min: 0.96, Type. 9.97 (230Vac, 50-60Hz, 100% load) THD Type: 110%, 15% (230Vac, 50-60Hz, 70%-100% load) Output Current Tolerance Min: 5%, Max: 5% Total Output Current Ripple(pk-pk) Type: 10%, Max: 20% (20MHz BW, fult load & LED load, the ripple would be tiny different under different LED load) Startup Overshoot Current Max: 10% (220-240Vac & 100% Load, load is LED) No Load Output Voltage Type: 180, Max: 190 Line Regulation Min: -5%, Max: 5% (25°C± 10°C ambient temperature, input voltage changes from 100Vac to277Vac) Load Regulation Min: -5%, Max: 5% (25°C± 10°C ambient temperature, input voltage changes from 100Vac to277Vac) Surge Protection DM SKV, CM 10KV Grounding Resistance Max: 0.10 (25x/605, under 25°C± 10°C ambient temperature) MTBF Type: 200000Hrs (25°C± 10°C ambient temperature, 250Vac, 80% load (ML+HDBK: 217F)) WTBF Win: 40°C, Max: 28°C* (40°C ambient temperature, 250Vac, 80% load (ML+HDBK: 217F)) Operating Case Temperature for Safety Tc_5 Min: 40°C, Max: 28°C* (5 years warranty case temperature Humidity: 10% to 95% Sk, Nk) Storage Temperature Min: 40°C, Max: 28°C* (Humidity: 5% t	Input Frequency	Min : 47Hz, Max:63Hz, Type :50/60Hz			
Invush Current Max: 75A (230Vac & fult load) Power Factor Min : 0.96 , Type : 10%, 15% (230Vac, 50-60Hz, 100% load) THD Type : 10%, 15% (230Vac, 50-60Hz, 70%-100% load) Output Current Tolerance Min : 5%, Max : 5% Type : 10%, 15% (230Vac, 50-60Hz, 70%-100% load) Output Current Ripple(pk-pk) Type : 10%, 15% (230Vac, 50-60Hz, 70%-100% load) Type : 10%, Max 20% (20MHz BW, fult load& LED load, the ripple would be tiny different under different LED load.) Startup Overshoot Current Max : 10% (220-240Vac & 100% Load, load is LED) No Load Output Voltage Type: 180, Max : 190 Min : 5%, Max : 3% (25°C± 10°C ambient temperature, input voltage changes from 100Vac to 277Vac) Load Regulation Min : 5%, Max : 5% (25°C± 10°C ambient temperature, input voltage 220Vac, load changes from 60% to 100%) Surge Protection Min : 5%, Max : 5% (25°C± 10°C ambient temperature, input voltage 220Vac, load changes from 60% to 100%) Surge Protection Max : 0.10 (25x/60S, under 25°C± 10°C ambient temperature) Insulation Resistance Min : 10MΩ (Input-Output, 500Vdc/60S/25°C/70%RH) Type : 200000Hrs (25°C± 10°C ambient temperature, 230Vac,80% load (MIL-HDBK-217F)) Lifetime S0000Hrs (25°C± 10°C ambient temperature, 230Vac,80% load (MIL-HDBK-217F)) Lifetime S0000Hrs (23°Cx above temperature, refer to lifetime curve for details) Operating Case Temperature for Safety Tc_5 Min : 40°C, Max : +95°C (Sears warranty case temperature Humidity: 10% to 95% RH) 1-10V Absolute Maximum Voltage on the Vdim (+) Pin Type : 2000uA, Max : +85°C (Humidity: 5% to 100% RH) 1-10V Source Current on Vdim(+)Pin Type : 2000uA, Max : 400uA Min : 40°C, Max : 100 (Default 0-10V/ PWM Dimming) Min : 10 V, Max : 10.3V (Default 0-10V/ PWM Dimming) Min : 10 V, Max : 10.3V (Default 0-10V/ PWM Dimming) Min : 10 V, Max : 20 V, Default 0-10V/ PWM Dimming)	Leakage Current	0.70mA (240Vac/60Hz)			
Power Factor Min : 0.46, Type : 0.97 (230Vac, 50-60Hz, 100% load) THD Type : 10%, 15% (230Vac, 50-60Hz, 70%-100% load) Output Current Tolerance Min : 5%, Max : 5% Type : 10%, Max : 20% (20MHz BW, full load& LED load, the ripple would be timy different under different LED load.) Startup Overshoot Current Max : 10% (220-240Vac & 100% Load, load is LED) No Load Output Voltage Type: 180, Max : 39 Min : 5%, Max : 5% (25°C± 10°C ambient temperature, input voltage changes from 100Vac to 277Vac) Line Regulation Min : 5%, Max : 5% (25°C± 10°C ambient temperature, input voltage changes from 100Vac to 277Vac) Load Regulation Min : 5%, Max : 5% (25°C± 10°C ambient temperature, Input Voltage 230Vac, load changes from 60% to 100%) Surge Protection DM 5kV, CM 10kV Grounding Resistance Max : 0.10 (25A/60S, under 25°C± 10°C ambient temperature) Insulation Resistance Min : 10MQ (Input-Output, 500Vdc/60S/25°C/70%RH) Type : 200000Hrs (25°C± 10°C ambient temperature, 230Vac,80% load (MIL+HDBR-217F)) Lifetime S0000Hrs (25°C± 10°C ambient temperature, 230Vac,80% load (MIL+HDBR-217F)) Lifetime S0000Hrs (25°C± 10°C ambient temperature, 230Vac,80% load (MIL+HDBR-217F)) Min : 40°C, Max : 490°C Min : 40°C, Max : 495°C (5 years warranty case temperature Humidity: 10% to 55% RH) 1-10V Absolute Maximum Voltage on the Vdim (+) Pin Type : 200uA, Max : 485°C (Humidity: 5% to 100% RH) 1-10V Source Current on Vdim(+)Pin Type : 200uA, Max : 400uA Min : 10 X max, Max : 100 X jeet Recommended Dimming Range for 1-10V Min : 10 X max, Max : 100 X (Default 0-10V) PWM Dimming) PWM_ in High Level Min : 0.0 X max, 0.0 X (Default 0-10V) PWM Dimming) PWM_ in Low Level Min : 0.0 X max, 0.0 X (Default 0-10V) PWM Dimming)	Input AC Current	1A (220-240Vac &full load)			
THID Type:10%,15% (230Vac, 50-60Hz, 70%-100% load) Output Current Tolerance Min:5%, Max:5% Total Output Current Ripple(pk-pk) Type:10%, Max:20% (200Hz, Mu, full load & LED load, the ripple would be tiny different under different LED load) Startup Overshoot Current Max:10% (220-240Vac & 100% Load, load is LED) No Load Output Voltage Type:180, Max:190 Line Regulation Min:5%, Max:5%, Max:3% (25°C± 10°C ambient temperature, input voltage changes from 100Vac to 277Vac) Min:5%, Max:5% (25°C± 10°C ambient temperature, input voltage changes from 60% to 100%) Surge Protection DM 5KV, CM 10KV Grounding Resistance Max:01.0 (25%-605, under 25°C± 10°C ambient temperature) Insulation Resistance Min:10MQ (Input-Output, 500Vdc/605/25°C/70%RH) Type:200000Hrs (25°C± 10°C ambient temperature) MTBF Type:200000Hrs (25°C± 10°C ambient temperature) MIRIE Lifetime S0000Hrs (23°0Vac & 100% Load, 75°C case temperature, refer to lifetime curve for details) Operating Case Temperature for Safety Tc_5 Min:40°C, Max:+90°C Operating Case Temperature for Warranty Tc_5 Oper	Inrush Current	Max: 75A (230Vac & full load)			
Output Current Tolerance Min : 5%, Max : 5% Total Output Current Ripple(pk-pk) Type : 10%, Max : 20% (20MHz BW, full load& LED load, the ripple would be tiny different under different LED load) Startup Overshoot Current Max : 10% (220-240Vac & 100% Load, load is LED) No Load Output Voltage Type: 180, Max : 3% (25°C* 10°C ambient temperature, input voltage changes from 100Vac to277Vac) Line Regulation Min : 5%, Max : 5% (25°C* 10°C ambient temperature, input voltage changes from 100Vac to277Vac) Load Regulation DM SKY, CM 10KV Surge Protection DM SKY, CM 10KV Grounding Resistance Max : 0.10 (25A/60S, under 25°C* 10°C ambient temperature) Insulation Resistance Min : 10MO (Input: Output, 500Vac/60S/25°C/70°RH) MTBF Type : 200000Hrs (25°C* 10°C ambient temperature, 230Vac,80% load (ML-HDBK-217F)) Lifetime 50000Hrs (23°C* 10°C ambient temperature, 230Vac,80% load (ML-HDBK-217F)) Operating Case Temperature for Safety Tc_s Min : 40°C, Max : +90°C Operating Case Temperature for Warranty Tc_s Min : 40°C, Max : +90°C Operating Case Temperature Min : 40°C, Max : +90°C Operating Case Temperature Min : 40°C, Max : +85°C (Humidity: 5% to 100% RH) 1-10V Absolute Maximum Voltage on the Vdim (+) Pin Type : 10	Power Factor	Min: 0.96, Type: 0.97 (230Vac, 50-60Hz, 100% load)			
Total Output Current Ripple(pk-pk) Type : 10%, Max : 20% (20MHz BW, full load& LED load, the ripple would be tiny different LED load,) Startup Overshoot Current Max : 10% (220 - 240Vac & 100% Load, load is LED) No Load Output Voltage Type: 180, Max: 190 Line Regulation Min : -3%, Max : 3% (25°C± 10°C ambient temperature, input voltage changes from 100Vac to 277Vac) Load Regulation Min : -5%, Max: .5% (25°C± 10°C ambient temperature, input voltage 230Vac, load changes from 60% to 100%) Surge Protection DM 5KV, CM 10KV Grounding Resistance Max : 0.10 (25A/60S, under 25°C± 10°C ambient temperature) Insulation Resistance Min : 10MΩ (Input-Output, 500Vdc/60S/25°C/70%RH) Type : 200000Hrs (25°C± 10°C ambient temperature, 230Vac, 80% load (MIL-HDBK-217F)) Lifetime S0000Hrs S0000Hrs S0000Hrs (23°OVac & 100°X load, 75°C case temperature, refer to lifetime curve for details) Operating Case Temperature for Safety Tc_s Min : -40°C, Max : +75°C (5 years warranty case temperature Humidity: 10% to 95% RH) Type : 10V Storage Temperature Min : -40°C, Max : +85°C (Humidity: 5% to 100% RH) Type : 10V 1-10V Source Current on Vdim(+)Pin Type : 2000A, Max : 400VA Min : 10V, Max : 10V (Default 0-10V/ PWM Dimming) Dimming Output Range Recommended Dimming Range for 1-10V Min : 97V, Max : 10.3V (Default 0-10V/ PWM Dimming) PWM_in High Level Min : 0V, Max : 2.XHz (Default 0-10V/ PWM Dimming) PWM_in High Level Min : 60V, Max : 2.XHz (Default 0-10V/ PWM Dimming)	THD	Type: 10%, 15% (230Vac, 50-60Hz, 70%-100% load)			
the ripple would be tiny different under different LED load.) Startup Overshoot Current Max: 10% (220-240Vac & 100% Load, load is LED) No Load Output Voltage Type: 180, Max: 13% (25°C± 10°C ambient temperature, input voltage changes from 100Vac to 277Vac) Load Regulation Min: 5%, Max: 5% (25°C± 10°C ambient temperature, input voltage changes from 100Vac to 277Vac) Load Regulation DM 5KV, CM 10KV Grounding Resistance Max: 0.10 (25A/60S, under 25°C± 10°C ambient temperature) MTBF Type: 200000Hrs (25°C± 10°C ambient temperature) MTBF Type: 200000Hrs (25°C± 10°C ambient temperature) MTBF Type: 200000Hrs (25°C± 10°C ambient temperature, 230Vac, 80% load (MIL+HD8K-217F)) Lifetime 50000Hrs (230Vac & 100% load, 75°C case temperature, 230Vac, 80% load (MIL+HD8K-217F)) Operating Case Temperature for Safety Tc_s Min: -40°C, Max: +90°C Operating Case Temperature for Warranty Tc_s Min: -40°C, Max: +95°C (5 years warranty case temperature Humidity: 10% to 95% RH) 1-10V Absolute Maximum Voltage on the Vdim (+) Pin Type: 10V 1-10V Source Current on Vdim(+)Pin Dimming Output Range Recommended Dimming Range for 1-10V Min: 10 × Innax: 100 × (Default 0-10V/ PWM Dimming) PWM_in High Level Min: 97V, Max: 103 ∨ (Default 0-10V/ PWM Dimming) PWM_in High Level Min: 300Hz, Max: 2KHz (Default 0-10V/ PWM Dimming)	Output Current Tolerance	Min: 5%, Max: 5%			
Type: 180, Max: 190	Total Output Current Ripple(pk-pk)				
Line Regulation Min : -3% , Max : 3% (25°C± 10°C ambient temperature, input voltage changes from 100Vac to 277Vac) Load Regulation Min : -5% , Max : 5% (25°C± 10°C ambient temperature, Input voltage 230Vac, load changes from 60% to 100%) Surge Protection DM 5KV, CM 10KV Grounding Resistance Max : 0.1Ω (25A/60S, under 25°C± 10°C ambient temperature) Insulation Resistance Min : 10MCl (Input-Output, 500Vdc/605/25°C/708RH) MTBF Type : 200000Hrs (25°C± 10°C ambient temperature, 230Vac,80% load (MIL-HDBK-217F)) Lifetime 50000Hrs (25°C± 10°C ambient temperature, refer to lifetime curve for details) Operating Case Temperature for Safety Tc_5 Min : -40°C, Max : +90°C Operating Case Temperature for Warranty Tc_s Min : -40°C, Max : +75°C (5 years warranty case temperature Humidity: 10% to 95% RH) 1-10V Absolute Maximum Voltage on the Vdim (+) Pin Type : 200uA, Max : 400uA Dimming Output Range Min : 10%Inax, Max : 100% Iset Recommended Dimming Range for 1-10V Min : 10 Minax, Max : 100 (Default 0-10V/ PWM Dimming) PWM_in High Level Min : 9,7V,Max : 10.3V (Default 0-10V/ PWM Dimming) PWM_in Frequency Range Min: 300Hz,Max : 2kHz (Default 0-10V/ PWM Dimming)	Startup Overshoot Current	Max: 10% (220~240Vac &100% Load, load is LED)			
Line Regulation Input voltage changes from 100Vac to 277Vac) Load Regulation Min :5%, Max: 5% (25°C± 10°C ambient temperature, Input Voltage 230Vac, load changes from 60% to 100%) Surge Protection DM 5KV, CM 10KV Grounding Resistance Max: 0.1Q (25A/60S, under 25°C± 10°C ambient temperature) Insulation Resistance Min: 10MQ (Input-Output, 500Vdc/60S/25°C/70%RH) Type: 200000Hrs (25°C± 10°C ambient temperature, 230Vac,80% load (INLH-HDBK-217F) Lifetime 50000Hrs (230Vac 8.100% load, 75°C case temperature, refer to lifetime curve for details) Operating Case Temperature for Safety Tc_s Min: -40°C, Max: +90°C Operating Case Temperature for Warranty Tc_s Storage Temperature Min: -40°C, Max: +75°C (5 years warranty case temperature Humidity: 10% to 95% RH) 1-10V Absolute Maximum Voltage on the Vdim (+) Pin Type: 10V 1-10V Source Current on Vdim(+)Pin Type: 200uA, Max: 400uA Dimming Output Range Min: 10%Imax, Max: 100% (Set aut 0-10V/ PWM Dimming) PWM_in High Level Min: 9.7V,Max: 10.3V (Default 0-10V/ PWM Dimming) PWM_in Low Level Min: 500Hz,Max: 2KHz (Default 0-10V/ PWM Dimming)	No Load Output Voltage	Type: 180, Max: 190			
Input Voltage 230Vac, load changes from 60% to 100%) Surge Protection DM 5KV, CM 10KV Grounding Resistance Max: 0.1Ω (25A/60S, under 25°C± 10°C ambient temperature) Insulation Resistance Min: 10MΩ (Input-Output, 500Vdc/60S/25°C/70%RH) Type: 20000Hrs (25°C± 10°C ambient temperature, 230Vac,80% load (MIL-HDBK-217F)) Lifetime 50000Hrs (25°C± 10°C ambient temperature, 230Vac,80% load (MIL-HDBK-217F)) Operating Case Temperature for Safety Tc_s Min: -40°C, Max: +90°C Operating Case Temperature for Warranty Tc_s Min: -40°C, Max: +75°C (5 years warranty case temperature Humidity: 10% to 95% RH) 1-10V Absolute Maximum Voltage on the Vdim (+) Pin Type: 200uA, Max: +85°C (Humidity: 5% to 100% RH) 1-10V Source Current on Vdim(+)Pin Type: 200uA, Max: 400uA Dimming Output Range Min: 10%Imax, Max: 100%Iset Recommended Dimming Range for 1-10V Min: 9.7V,Max: 10.3V (Default 0-10V/ PWM Dimming) PWM_in High Level Min: 9.7V,Max: 2KHz (Default 0-10V/ PWM Dimming) PWM_in Frequency Range Min: 300Hz,Max: 2KHz (Default 0-10V/ PWM Dimming)	Line Regulation				
Grounding Resistance Max : 0.1Ω (25A/60S, under 25°C± 10°C ambient temperature) Insulation Resistance Min : 10MΩ (Input-Output, 500Vdc/60S/25°C/70%RH) MTBF Type : 200000Hrs (25°C± 10°C ambient temperature, 230Vac,80% load (MIL-HDBK-217F)) Lifetime 50000Hrs (23°Vac&100% load, 75°C case temperature, refer to lifetime curve for details) Operating Case Temperature for Safety Tc_s Min : -40°C, Max : +90°C Operating Case Temperature for Warranty Tc_s Min : -40°C, Max :+75°C (5 years warranty case temperature Humidity: 10% to 95% RH) Storage Temperature Min : -40°C, Max :+85°C (Humidity: 5% to 100% RH) 1-10V Absolute Maximum Voltage on the Vdim (+) Pin Type : 10V 1-10V Source Current on Vdim(+)Pin Type : 200uA, Max : 400uA Dimming Output Range Min : 10%Imax, Max: 100%Iset Recommended Dimming Range for 1-10V Min : 10 / Max : 10V (Default 0-10V/ PWM Dimming) PWM_in High Level Min : 9.7V,Max : 10.3V (Default 0-10V/ PWM Dimming) PWM_in Frequency Range Min : 30VI, Max: 0.3V (Default 0-10V/ PWM Dimming) Min : 50V, Max: 2 KHz (Default 0-10V/ PWM Dimming)	Load Regulation				
Insulation Resistance Min : 10MΩ (Input-Output, 500Vdc/60S/25°C/70%RH) Type : 200000Hrs (25°C± 10°C ambient temperature, 230Vac,80% load (MIL+HDBK-217F)) 50000Hrs (230Vac &100% load, 75°C case temperature, refer to lifetime curve for details) Operating Case Temperature for Safety Tc_5 Min : -40°C, Max :+90°C Operating Case Temperature for Warranty Tc_5 Storage Temperature Min : -40°C, Max :+85°C (Humidity: 5% to 100% RH) 1-10V Absolute Maximum Voltage on the Vdim (+) Pin Type : 10V 1-10V Source Current on Vdim(+)Pin Type : 200uA, Max : 400uA Min : 10%Imax, Max: 100%Iset Recommended Dimming Range for 1-10V Min : 1V , Max : 10 (Default 0-10V/ PWM Dimming) PWM_in High Level Min : 9.7V,Max : 10.3V (Default 0-10V/ PWM Dimming) PWM_in Low Level Min : 6V, Max: 9.3V (Default 0-10V/ PWM Dimming) PWM_in Frequency Range	Surge Protection	DM 5KV, CM 10KV			
MTBF Type: 200000Hrs (25°C± 10°C ambient temperature, 230Vac,80% load (MIL-HDBK-217F)) Lifetime 50000Hrs (230Vac&100% load, 75°C case temperature, refer to lifetime curve for details) Operating Case Temperature for Safety Tc_s Min: -40°C, Max: +90°C Min: -40°C, Max: +75°C (5 years warranty case temperature Humidity: 10% to 95% RH) Storage Temperature Min: -40°C, Max: +85°C (Humidity: 5% to 100% RH) 1-10V Absolute Maximum Voltage on the Vdim (+) Pin Type: 10V 1-10V Source Current on Vdim(+)Pin Type: 200uA, Max: 400uA Dimming Output Range Min: 10%Imax, Max: 100%Iset Recommended Dimming Range for 1-10V Min: 1V, Max: 10V (Default 0-10V/ PWM Dimming) PWM_in High Level Min: 9.7V,Max: 10.3V (Default 0-10V/ PWM Dimming) PWM_in Low Level Min: 30.7V,Max: 2KHz (Default 0-10V/ PWM Dimming)	Grounding Resistance	Max : 0.1Ω (25A/60S, under 25°C± 10°C ambient temperature)			
Lifetime 5000Hrs (230Vac & 100% load, 75°C case temperature, refer to lifetime curve for details) Operating Case Temperature for Safety Tc_s Min : -40°C, Max : +90°C Operating Case Temperature for Warranty Tc_s Storage Temperature Min : -40°C, Max : +85°C (5 years warranty case temperature Humidity: 10% to 95% RH) 1-10V Absolute Maximum Voltage on the Vdim (+) Pin Type : 10V 1-10V Source Current on Vdim(+)Pin Type : 200uA, Max : 400uA Min : 10%Imax, Max: 100%Iset Recommended Dimming Range for 1-10V Min : 1V , Max : 10V (Default 0-10V/ PWM Dimming) PWM_in High Level Min : 9.7V,Max : 10.3V (Default 0-10V/ PWM Dimming) PWM_in Frequency Range Min: 300Hz,Max: 2KHz (Default 0-10V/ PWM Dimming)	Insulation Resistance	Min : 10MΩ (Input-Output, 500Vdc/60S/25°C/70%RH)			
Operating Case Temperature for Safety Tc_s Min :-40°C, Max :+90°C Operating Case Temperature for Warranty Tc_s Min :-40°C, Max :+75°C (5 years warranty case temperature Humidity: 10% to 95% RH) Storage Temperature Min :-40°C, Max :+85°C (Humidity: 5% to 100% RH) 1-10V Absolute Maximum Voltage on the Vdim (+) Pin Type : 10V 1-10V Source Current on Vdim(+)Pin Type : 200uA, Max : 400uA Dimming Output Range Min : 10%Imax, Max: 100%Iset Recommended Dimming Range for 1-10V Min : 9.7V,Max :10.3V (Default 0-10V/ PWM Dimming) PWM_in High Level Min : 0V, Max: 0.3V (Default 0-10V/ PWM Dimming) PWM_in Frequency Range Min: 300Hz,Max: 2KHz (Default 0-10V/ PWM Dimming)	MTBF				
Operating Case Temperature for Warranty Tc_s Min : -40°C, Max :+75°C (5 years warranty case temperature Humidity: 10% to 95% RH) Storage Temperature Min : -40°C, Max :+85°C (Humidity: 5% to 100% RH) 1-10V Absolute Maximum Voltage on the Vdim (+) Pin Type : 10V 1-10V Source Current on Vdim(+)Pin Type : 200uA, Max : 400uA Dimming Output Range Min : 10%Imax, Max: 100%Iset Recommended Dimming Range for 1-10V Min : 1V , Max : 10V (Default 0-10V/ PWM Dimming) PWM_in High Level Min : 9.7V,Max :10.3V (Default 0-10V/ PWM Dimming) PWM_in Frequency Range Min: 300Hz,Max: 2KHz (Default 0-10V/ PWM Dimming)	Lifetime				
Storage Temperature Min:-40°C, Max:+85°C (Humidity: 5% to 100% RH) 1~10V Absolute Maximum Voltage on the Vdim (+) Pin Type: 10V 1~10V Source Current on Vdim(+)Pin Type: 200uA, Max: 400uA Dimming Output Range Min: 10%Imax, Max: 100%Iset Recommended Dimming Range for 1-10V Min: 1V, Max: 10V (Default 0-10V/ PWM Dimming) PWM_in High Level Min: 9.7V,Max: 10.3V (Default 0-10V/ PWM Dimming) PWM_in Low Level Min: 0V, Max:0.3V (Default 0-10V/ PWM Dimming) Min: 300Hz,Max: 2KHz (Default 0-10V/ PWM Dimming)	Operating Case Temperature for Safety Tc_s	Min : -40°C, Max : +90°C			
1~10V Absolute Maximum Voltage on the Vdim (+) Pin Type: 10V 1~10V Source Current on Vdim(+)Pin Type: 200uA, Max: 400uA Min: 10%Imax, Max: 100%Iset Recommended Dimming Range for 1-10V Min: 1V, Max: 10V (Default 0-10V/ PWM Dimming) PWM_in High Level Min: 9.7V,Max: 10.3V (Default 0-10V/ PWM Dimming) PWM_in Low Level Min: 0V, Max: 0.3V (Default 0-10V/ PWM Dimming) PWM_in Frequency Range Min: 300Hz,Max: 2KHz (Default 0-10V/ PWM Dimming)	Operating Case Temperature for Warranty Tc_s				
1~10V Source Current on Vdim(+)Pin Type: 200uA, Max: 400uA Min: 10%Imax, Max: 100%Iset Recommended Dimming Range for 1-10V Min: 1V, Max: 10V (Default 0-10V/ PWM Dimming) PWM_in High Level Min: 9.7V,Max: 10.3V (Default 0-10V/ PWM Dimming) PWM_in Low Level Min: 0V, Max: 0.3V (Default 0-10V/ PWM Dimming) PWM_in Frequency Range Min:300Hz,Max: 2KHz (Default 0-10V/ PWM Dimming)	Storage Temperature	Min : -40°C, Max :+85°C (Humidity: 5% to 100% RH)			
Dimming Output Range Min: 10%Imax, Max: 100%Iset Min: 1V, Max: 10V (Default 0-10V/ PWM Dimming) PWM_in High Level Min: 9.7V,Max: 10.3V (Default 0-10V/ PWM Dimming) PWM_in Low Level Min: 0V, Max: 0.3V (Default 0-10V/ PWM Dimming) PWM_in Frequency Range Min: 300Hz,Max: 2KHz (Default 0-10V/ PWM Dimming)	1~10V Absolute Maximum Voltage on the Vdim (+) Pin	Type: 10V			
Recommended Dimming Range for 1-10V Min : 1V , Max : 10V (Default 0-10V/ PWM Dimming) PWM_in High Level Min : 9.7V,Max :10.3V (Default 0-10V/ PWM Dimming) PWM_in Low Level Min : 0V, Max:0.3V (Default 0-10V/ PWM Dimming) PWM_in Frequency Range Min:300Hz,Max: 2KHz (Default 0-10V/ PWM Dimming)	1~10V Source Current on Vdim(+)Pin	Type : 200uA, Max : 400uA			
PWM_in High Level Min :9.7V,Max :10.3V (Default 0-10V/ PWM Dimming) PWM_in Low Level Min : 0V, Max:0.3V (Default 0-10V/ PWM Dimming) PWM_in Frequency Range Min:300Hz,Max: 2KHz (Default 0-10V/ PWM Dimming)	Dimming Output Range	Min : 10%Imax, Max: 100%Iset			
PWM_in Low Level Min: 0V, Max:0.3V (Default 0-10V/ PWM Dimming) PWM_in Frequency Range Min:300Hz,Max: 2KHz (Default 0-10V/ PWM Dimming)	Recommended Dimming Range for 1-10V	Min: 1V, Max: 10V (Default 0-10V/ PWM Dimming)			
PWM_in Low Level Min: 0V, Max:0.3V (Default 0-10V/ PWM Dimming) PWM_in Frequency Range Min:300Hz,Max: 2KHz (Default 0-10V/ PWM Dimming)	PWM_in High Level	Min :9.7V,Max :10.3V (Default 0-10V/ PWM Dimming)			
PWM_in Frequency Range Min:300Hz,Max: 2KHz (Default 0-10V/ PWM Dimming)					

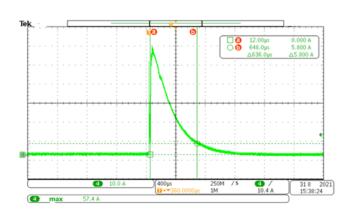
Operating Window



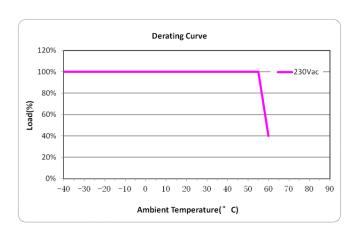
Lifetime vs Case Temperature



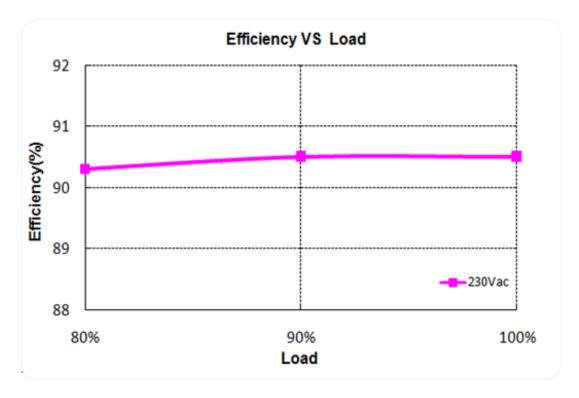
Inrush Current waveform



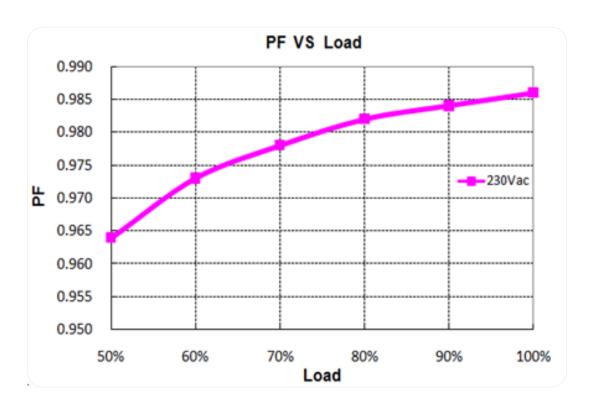
Derating Curve



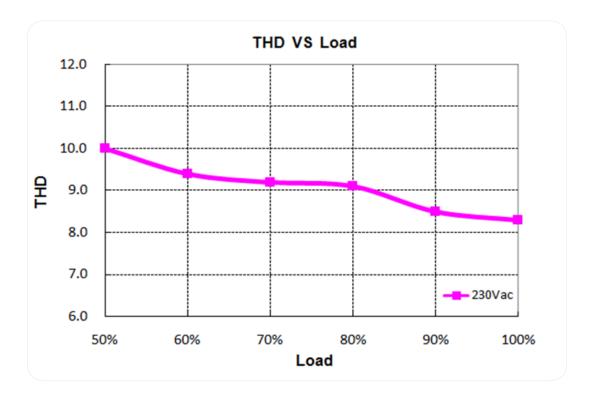
Efficiency vs Load



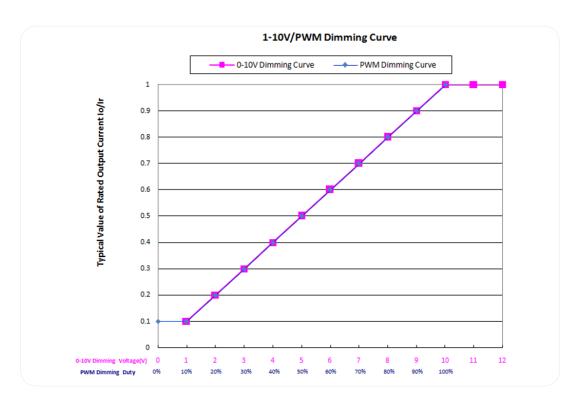
Power Factor vs Load



THD vs Load



1-10V/PWM Dimming



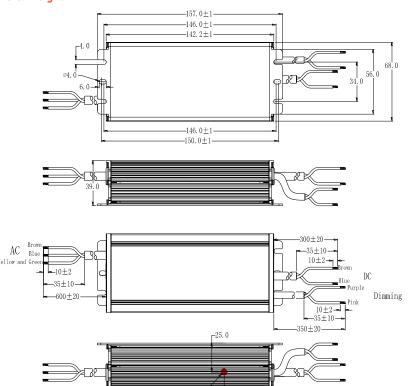
ADDITIONAL PRODUCT INFORMATION

The FP series is outdoor offline programmable LED driver that operates in constant current with high PF value and rated input voltage range 220~240Vac model. Offline Monitored by dimming cable connected withan USB kit programming device, the fully programmed drivers offer all dimming, dim-to-off, constant lumen output options and a wide range of output current in a single driver, which deliver maximum flexibility with customized operating settings and intelligent control options for lighting manufacturers, as one driver can be programmed for many different luminaire designs. FP provides built-in timer dimming schedules further increasing the energy savings and CO2 reductions achieved with LED lighting. It also helps clients to improve the management of logistics and stock. The compact metal case and high efficiency enables the driver to operating with high reliability, and extending product lifetime. Overall protection is provided against lightening surge, output over voltage, short circuit, and over temperature, to ensure low failure rate.

Certificates & Standards

Type of protection	
Standards	EN61347-1, EN61347-2-13,EN62493,EN62384,EN55015,EN61000-3-2, EN61000-3-3,EN61000-4-2,3,4,5,6,11,EN61547
Approval marks – approval	CE / ENEC

Dimensions & Weight



Length	157 mm		
Width	68 mm		
Height	39 mm		
Cable length (AC)	600 mm		
Cable length (DC)	300 ± 20 mm		
Cable length (DIM)	350 ± 20 mm		

Product Code	Packaging unit (Pieces/ Unit)	Dimensions (length x width x height)	Gross weight	Volume
AC35847	Unpacked 1	157x68x39 mm		
***	Shipping carton box 10	500x310x160 mm	10 kg	dm³

The mentioned product code describes the smallest quantity unit which can be ordered. One shipping unit can contain one or more single products. When placing an order, for the quantity please enter single or multiples of a shipping unit.

Disclaimer

Subject to change without notice. Errors and omission excepted. Always make sure to use the most recent release.