

PRODUCT DATASHEET LVED FP 200/1.05-1.50/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

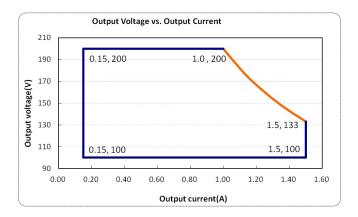
- Rated input voltage range 220~240Vac
- Constant power design, output current programming adjustable
- Offline programmable
- 3-in-1 dimmable: 1~10Vdc, PWM, Timer dimming
- Output and Dimming Signal Isolating
- Surge protection: DM 5KV, CM 10KV
- Protections: SCP, OVP, OTP
- IP67 design for indoor and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

TECHNICAL DATA

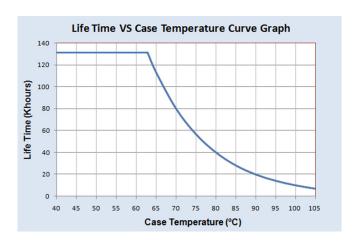
Electrical data

Decident Promet (NF)				
Table Tabl	Max Output Power (W)	200W		
Output Current Adjustable Range (A) 0.15-150A Default Output Current Setting(A) 100 1337/150A Typical Efficiency (2) 92% Owtput P, STL, M (act full load) 41 Output P, STL, M (act full load) 40 Raked Injust Voltage 200, 240 Vac Injust Frequency Min : 90Ver, Max : 305Ver (Full load output at 175-305VAC injust condition, less than 175Vac driver can work property, the output current will be reduced) Injust AC Current 0.70m (240Vec/CoHz) Injust AC Current 1.4A (220-240Vec Affull load) Injust AC Current Min : 95 x, Type : 0.97 (230Vec, 50-60Hz, 100% load) Power Factor Min : 95 x, Type : 0.97 (230Vec, 50-60Hz, 100% load) Tito Output Current Ripple(plc-pk) Type : 15%, 100K (230Vec, 50-60Hz, 100% load) Tito Cal Cutput Current Ripple(plc-pk) Type : 10%, 100K (240Vec, 100K load) Sterrup Overshoot Current Min : 15%, Max : 5% (25°C = 10°C ambient temperature, load in the ripple would be tray different under different LED load), the ripple would be tray different under different LED load).	Output Voltage Range (Vdc)	100-200V		
Default Output Current Setting(A) 100-1331/1.50A Oppore F.STL (Net fell Italy) 92% Power Factor 0.97 Output P.STL (Net fell Italy) <1 Output SVM (at fall Italy) 4.0 Rated Input Voltage 220 – 240 Vac Imput Voltage Min : 997kz, Max : 907kz, fell Italy output at 175-302 VAC Regular condition, less than 175 Vac driver can work properly; the output current will be reduced) input Frequency Min : 747k, Max 5514z, Type 500/001v2 Leskage Current 0.70m (2.440kz, 64bHz) 90m (2.440kz, 64bHz) Input AC Current 1.44 (220 240Vac 8-bit Italy) Inval AC Current Min : 757k, (250kz, 50-60Hz, 100% load) TVD Min : 505, Type 0.97 (230kz, 50-60Hz, 100% load) TVD Min : 505, Max : 50% (250kz, 50-60Hz, 100% load) TVD Type : 50k, 100k (250kz, 50-60Hz, 70%-100% load) TVD Type : 50k, 100k (250kz, 50-60Hz, 70%-100% load) Vibra Current Ripple(pk-pk) Hin : 55k, Max : 5% Sartup Overshoot Current Max : 100k (230hz, 50-60Hz, 100k load, load is LED) No Load Output Current Ripple(pk-pk) Max : 240V Line Regulation Max : 25k / 20x : 5k / 20x - 100k load, load is LED)	Full Power Voltage Range (V)	133-200V		
Power Factor	Output Current Adjustable Range (A)	0.15-1.50A		
Power Factor 0.97	Default Output Current Setting(A)	100-133V/1.50A		
Output P_ST_LM (at full load) <1 Rated Input Voltage 270240 Vac Input Voltage 270240 Vac Imput Voltage Min : 90/wac, Max : 305/Wac (Full load output at 173-305/Wac Input condition, less than 175/Wac driver can work properly, the output current will be reduced) Imput Frequency Min : 471Hz, Max 63 Hz, Type : 50/65Hz Leakage Current 0.70m X (2470wc/60Hz) Imput AC Current 1.4A (220 240/wac & full load) Invast Current Min : 505, Type : 0.97 (2370wc, 50-60Hz, 100% load) Power Factor Min : 505, Type : 0.97 (2370wc, 50-60Hz, 100% load) TID Type : 5%, 10% (230/wc, 50-60Hz, 100% load) Output Current Ripple(pk-pk) Ilve : 10%, Max : 10% (20Hz, 100% load) Total Output Current Ripple(pk-pk) Ilve : 10%, Max : 10% (20Hz, 100% load) load is LED load, the ripple would be trilly different under different LED load) Startup Overshoot Current Max : 240V No Load Output Voltage Max : 240V Line Regulation Min : 5%, Max : 5% (25°C+ 10°C ambient temperature, input voltage 230/wc, load changes from 100/wc to 227 Vac) Load Regulation Min : 5%, Max : 5% (25°C+ 10°C ambient temperature, input voltage 230/wc, load changes from 230/wc, load changes from 230/wc, load changes from 230/wc, load changes from 230/wc, load c	Typical Efficiency [2]	92%		
Quitout SVM (at full Load)	Power Factor	0.97		
Rated Input Voltage	Output P_ST_LM (at full load)	<1		
Injust Voltage Min : 90Vac , Max : 305Vac (Full Load output at 175-305VAC Injust condition, less than 175Vac driver can work properly, the output current will be reduced) Injust Frequency Min : 47Hz, Max.65Hz, Type 50/60Hz	Output SVM (at full load)	<0.4		
less than 175 Nac driver can work property, the output current will be reduced) Imput Frequency Min + 47Hz, Max 631Hz, Type 50/60Hz Lockaloge Current 1.4A (220-240 Nac & full, load) Inrush Current Max: 75A (230 Vac & full, load) Inrush Current Max: 75A (230 Vac & full, load) Inrush Current Max: 75A (230 Vac & full, load) Type : 5%, 10% (230 Vac, 50 -60 Hz, 100% load) Type : 5%, 10% (230 Vac, 50 -60 Hz, 100% load) Type : 5%, 10% (230 Vac, 50 -60 Hz, 100% load) Output Current Ripple(pk-pk) Type : 10%, Max: 10% (200 Hz BW, full, load, & LED load, the ripple would be tiny different under different LED load) the ripple would be tiny different under different LED load) Startup Overshoot Current No Load Output Voltage Max: 240V Line Regulation Min: 5%, Max: 5% (25°C+ 10°C ambient temperature, input Voltage changes from 100 Vac to 277 No. Load Regulation Min: 5%, Max: 5% (25°C+ 10°C ambient temperature, input Voltage 230 Vac, load changes from 50% to 100 No. Starge Protection Min: 5%, Max: 5% (25°C+ 10°C ambient temperature, input Voltage 230 Vac, load changes from 60% to 100 No. Grounding Resistance Max: 0.10 (25×605, under 25°C+ 10°C ambient temperature) Insulation Resistance Min: 10 MQ (Input-Output, 500 Vdc/605/25°C/70′KRH) MTBF Lifetime 20000Hrs: 25°C+ 10°C ambient temperature, effer to Ufetime curve for details) Operating Case Temperature for Safety Tc. 5 Min: 40°C, Max: +85°C (Humidity: 5% to 100 WRH) Lifetime 20000Hrs: 25°C+ 10°C ambient temperature, refer to Ufetime curve for details) Operating Case Temperature for Warranty Tc. 5 Storage Temperature Min: 40°C, Max: +85°C (Humidity: 5% to 100 WRH) 1-10V Absolute Maximum Voltage on the Vdim (+) Pin Type: 10V 1-10V Source Current on Vdim(+) Pin Type: 10V Min: 10 M, Max: 10V (Default 0:10V PWM Dimming) PVM_In High Level Min: 50, Max: 30 V (Default 0:10V PWM Dimming) Min: 50, Max: 30 V (Default 0:10V PWM Dimming)	Rated Input Voltage	220240 Vac		
Leakage Current 0.70mA (240Vac/60Hz)	Input Voltage			
Input AC Current 1.4A (220-240Vac &rutt load) Inrush Current Max: 75A (230Vac & full load) Power Factor Min : 0.95, Type . 9.97 (230Vac, 50-60Hz, 100% load) THD Type : 5%, 10% (230Vac, 50-60Hz, 70%-100% load) Output Current Tolerance Min : 5%, Max : 5% Total Output Current Ripple(pk-pk) Type : 10%, Max : 10% (200Hz 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 Max : 240V 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/60S, under 25°C± 10°C ambient temperature) MTBF Type : 200000Hrs (25°C± 10°C ambient temperature, 250Vac, 80% load (ML+10BK: 217F)) WTBF S0000Hrs (25°C± 10°C ambient temperature, 250Vac, 80% load (ML+10BK: 217F)) Uricetime 50000Hrs (25°C± 10°C ambient temperature, 250Vac, 80% load (ML+10BK: 217F)) Operating Case Temperature for Safety Tc_5 Min : 40°C, Max : 90°C Op	Input Frequency	Min : 47Hz, Max:63Hz, Type :50/60Hz		
Inrush Current Max: 75A (230Vac & fult load) Power Factor Min : 0.95 , Type : 0.97 (230Vac, 50-60Hz, 100% load) THD Type : 5%, 10% (230Vac, 50-60Hz, 70%-100% load) Output Current Tolerance Min : 5%, Max : 5% Total Output Current Ripple(pk-pk) Total Output Current Ripple(pk-pk) Startup Overshoot Current Max : 10% (220-240Vac & 100% Load, load is LED) No Load Output Voltage Max : 240V Min : 5%, Max : 5% (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 250Vac, load changes from 100Vac to277Vac) Load Regulation DM 5KV, CM 10KV Grounding Resistance Max : 0.10 (23A/60S, under 25°C± 10°C ambient temperature) Insulation Resistance Min : 10MO (Input-Output, 500Vdc/60S/25°C/70%RH) MTBF Lifetime S0000Hrs (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 Min : 40°C, Max : +90°C 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 : 2000uA, Max : 400uA Dimming Output Range Min : 10 Winaxa, Max : 100W (Default 0-10V/ PWM Dimming) PVM in High Level Min : 10 Winaxa, 20 Winaxa : 10 V PWM Dimming) PVM in In Ow Max : 20 Winaxa : 20 Hour Dimming) Min : 0.0 Winaxa, 20 Winaxa : 20 W	Leakage Current	0.70mA (240Vac/60Hz)		
Power Factor	Input AC Current	1.4A (220-240Vac &full load)		
THID Type::5%,10% (230Vac, 50-60Hz, 70%-100% load) Output Current Tolerance Min::5%, Max::5% Total Output Current Ripple(pk-pk) Type::10%, Max::10% (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 Max::240V 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 changes from 60% to 100%) Surge Protection DM:SKV, CM:10KV Grounding Resistance Max::0.10 (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) Lifetime 50000Hrs 50000Hrs 50000Hrs 60000Hrs (25°C± 10°C ambient temperature, 230Vac,80% load (wll.+H0BK::217T)) Win::40°C, Max::+90°C Operating Case Temperature for Safety Tc_5 Min::40°C, Max::+90°C Operating Case Temperature for Warranty Tc_5 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 Type::20V 1-10V Source Current on Vdim(+)Pin Type::20V Min::10://Max::10://Max::40UUA Min::00://Max::00://Max::40UUA Min::00://Max::00://Max::40UUA Min::00://Max::00://Max::40UUA Min::00://Max::00://Max::40UUA Min::00://Max::00://Max::40UUA Min::00://Max::00://Max::40UUA Min::00://Max::00://Max::40UUA Min::00://Max::00://Max::40UUA Min::00://Max::00://Max::00://Max::40UUA Min::00://Max::00://Max::00://Max::00://Max::00://Max::00://Max::00://Max::00://Max::00://Max::00://Max::00://Max::00://Max::00://Max::00://Max	Inrush Current	Max: 75A (230Vac & full load)		
Output Current Tolerance Min : 5%, Max : 5% Total Output Current Ripple(pk-pk) Type : 10%, Max : 10% (20MHz BW, full load& LED load, the ripple would be tiny different under different LED load.) Startup Overshoot Current Max : 10% (220-740Vac & 100% Load, load is LED) No Load Output Voltage Max : 240V 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/605, under 25°C± 10°C ambient temperature) Insulation Resistance Min : 10MQ (Input-Output, 500Vdc/605/25°C/70′R8H) MTBF Type : 200000Hrs (25°C± 10°C ambient temperature, 230Vac,80% load (MIL-HDBK-217F)) Lifetime 50000Hrs Operating Case Temperature for Safety Tc_5 Min : 40°C, Max : +90°C Operating Case Temperature for Warranty Tc_5 Min : 40°C, Max : +90°C Operating Case Temperature for Warranty Tc_5 Min : 40°C, Max : +90°C Storage Temperature Min : 40°C, Max : +90°C Operating Case Temperature for Warranty Tc_5 Min : 40°C, Max : +90°C Operating Case Temperature	Power Factor	Min: 0.95, Type: 0.97 (230Vac, 50-60Hz, 100% load)		
Total Output Current Ripple(pk-pk) Type :10%, Max :10% (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 Max : 240V 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/605, under 25°C± 10°C ambient temperature) Insulation Resistance Min : 10MΩ (Input-Output, 500Vdc/605/25°C/70%RH) Type : 200000Hrs (25°C± 10°C ambient temperature, 230Vac,80% load (MIL-HDBK-217F)) Lifetime S0000Hrs S0000Hrs (230Vac & 100°C ambient 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) 1-10V Absolute Maximum Voltage on the Vdim (+) Pin Type : 100V 1-10V Source Current on Vdim(+)Pin Type : 200uA, Max : 400uA Min : 10°K max : 40°C, Max : 40°C Min : 10°K max, Max : 100% loed Min : 10°K max : 40°C Min : 10°K max, Max : 100% loed Min : 10°K provided Min : 97°K max : 10°K provided Min : 10°K provided	THD	Type: 5%, 10% (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 Max: 240V 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 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 MTBF Type: 2000000Hrs (25°C± 10°C ambient temperature) MTBF Type: 2000000Hrs (25°C± 10°C ambient temperature, 230Vac, 80% load (MIL-HDBK-217F)) Lifetime 50000Hrs (230Vac&1100% load, 75°C case temperature, 230Vac, 80% load (MIL-HDBK-217F)) Type: 2000000Hrs (25°C± 10°C ambient temperature, 230Vac, 80% load (MIL-HDBK-217F)) Type: 2000000Hrs (25°C± 10°C ambient temperature, 230Vac, 80% load (MIL-HDBK-217F)) Type: 2000000Hrs (25°C± 10°C ambient temperature, 230Vac, 80% load (MIL-HDBK-217F)) Type: 2000000Hrs (25°C± 10°C ambient temperature, 230Vac, 80% load (MIL-HDBK-217F)) Type: 2000000Hrs (25°C± 10°C ambient temperature, 230Vac, 80% load (MIL-HDBK-217F)) Type: 200000Hrs (25°C± 10°C ambient temperature, 230Vac, 80% load (MIL-HDBK-217F)) Type: 200000Hrs (25°C± 10°C ambient temperature, 230Vac, 80% load (MIL-HDBK-217F)) Type: 200000Hrs (25°C± 10°C ambient temperature, 230Vac, 80% load (MIL-HDBK-217F)) Type: 200000Hrs (25°C± 10°C ambient temperature, 230Vac, 80% load (MIL-HDBK-217F)) Type: 200000Hrs (25°C± 10°C ambient temperature, 230Vac, 80% load (MIL-HDBK-217F)) Type: 20000Hrs (25°C± 10°C ambient temperature, 230Vac, 80% load (MIL-HDBK-217F)) Type: 20000Hrs (25°C± 10°C ambient temperature, 230Vac, 80% load (MIL-HDBK-217F)) Type: 20000Hrs (25°C± 10°C ambient temperature, 230Vac, 80% load (MIL-HDBK-217F)) Type: 20000Hrs (25°C± 10°C ambient temperature, 230Vac, 80% load (MIL-HDBK-217F)) Type: 20000Hrs (25°C± 10°C ambient temperature, 230Vac, 80% load (MIL-HDBK-217F) Type: 20000Hrs (25°C± 1	Output Current Tolerance			
Max: 240V 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 changes from 100Vac to 277Vac) 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: 0.1 \(\text{Q} \) 25\/4\(\text{Q} \) 5\(\text{C} \) 10°C ambient temperature) Insulation Resistance Min: 10MC0 (Input-Output, 500Vdc/605/25°C/70%RH) Type: 200000Hrs (25°C± 10°C ambient temperature, 230Vac,80% load (MIL-HDBK-217F)) Lifetime Soooothrs (250Vac & 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 Min: -40°C, Max: +85°C (Humidity: 5% to 100% RH) 1-10V Absolute Maximum Voltage on the Vdim (+) Pin Type: 200uA, Max: 400uA Dimming Output Range Min: 10% Insulation -10V (Default 0-10V/ PWM Dimming) PWM_in High Level Min: 9,7V,Max: 10.3 V (Default 0-10V/ PWM Dimming) PWM_in High Level Min: 70, Max: 24Hz (Default 0-10V/ PWM Dimming) Min: 70V, Max: 24Hz (Default 0-10V/ PWM Dimming)	Total Output Current Ripple(pk-pk)			
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: 0.1\Omega (25\A/60S), under 25°C± 10°C ambient temperature) Insulation Resistance Min: :10MO (Input-Output, 500Vdc/605/25°C/70%RH) Type: :200000Hrs (25°C± 10°C ambient temperature, 230Vac,80% load (MIL-HDBK-217F)) Lifetime S00000Hrs (250000Hrs (250000 As 2000 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 (Humidity: 5% to 100% RH) 1-10V Absolute Maximum Voltage on the Vdim (+) Pin Type: :200uA, Max: 400uA Dimming Output Range Min: :10%Imax, Max: 100%Iset Recommended Dimming Range for 1-10V Min: 21V, Max: :10V (Default 0-10V/ PWM Dimming) PWM_in High Level Min: 0V, Max: 0.3V (Default 0-10V/ PWM Dimming) PWM_in High Level Min: 0V, Max: 28Hz (Default 0-10V/ PWM Dimming) Min: 9V, Max: 28Hz (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	No Load Output Voltage	Max : 240V		
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: 200000Hrs (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: 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 Low Levet Min: 50V, Max: 2KHz (Default 0-10V/ PWM Dimming) 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) 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 Low Level Min : 300Hz,Max : 2KHz (Default 0-10V/ PWM Dimming) PWM_in Frequency Range Min: 300Hz,Max : 2KHz (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 (ML-HDBK-217F)) 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 Operating Case Temperature for Warranty Tc_s 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 : 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 : 6V, Max: 2KHz (Default 0-10V/ PWM Dimming)	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: 500Hz,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 : 0V, Max:0.3V (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: 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 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)				

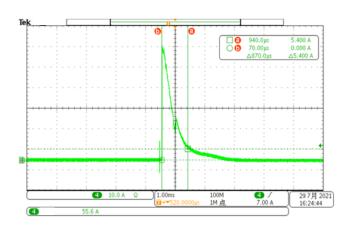
Operating Window



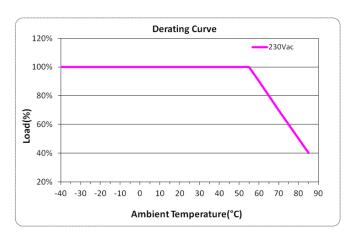
Lifetime vs Case Temperature



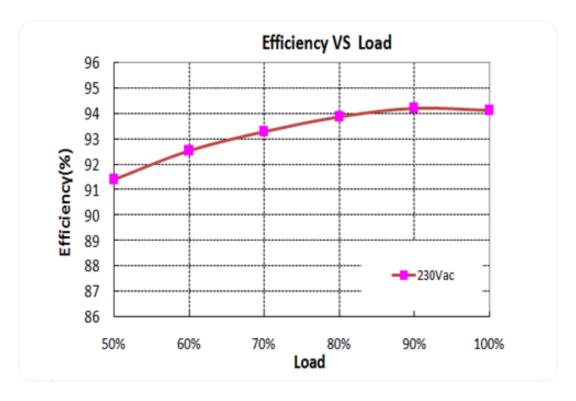
Inrush Current waveform



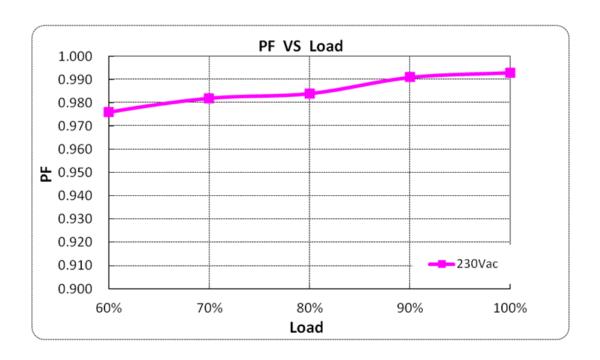
Derating Curve



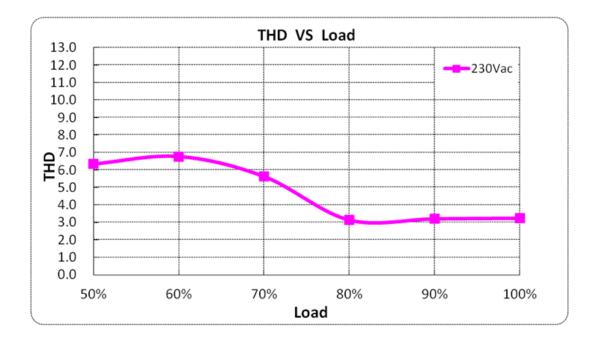
Efficiency vs Load



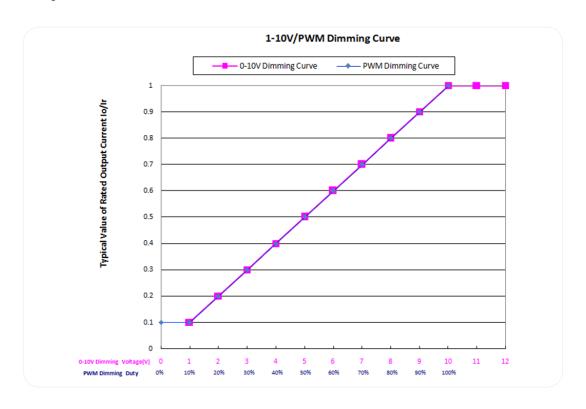
Power Factor vs Load



THD vs Load



1-10V/PWM Dimming



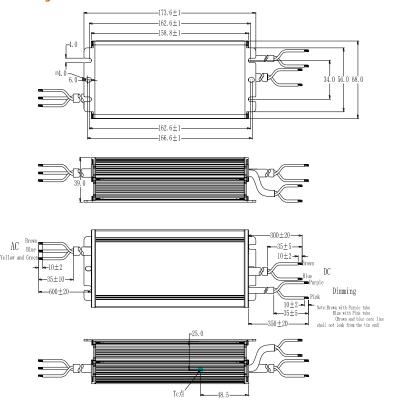
ADDITIONAL PRODUCT INFORMATION

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	173mm		
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
AC35848	Unpacked 1	173x68x39 mm		
***	Shipping carton box 10	500x310x160 mm	9.8 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.