

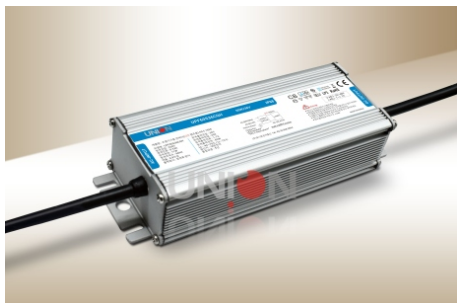
S.M.P.S

LED Converter

Water Proof Converter

F60CQH Series

60W single output with c.v+c.c circuit and PFC function



- Constant voltage or current design(C.V+C.C. Mode) (12V:C.V mode only)
- Built-in PFC function
- Wide input range
- Protections:Over current /Over voltage / Short circuit/Over temperature
- IP68 design for outdoor installations
- 100% full load burn-in test
- 3 in 1 dimming function(option:D type)
- Suitable for LED lighting and street lighting applications
- Safety standards : EN61347-1,EN61347-2-13 K61347-1,K61347-2-13 ,J61347-1,J61347-2-13
- EMC standards : EN55015,EN61000-3-2,3 EN61547,K00015,K61547,J55015
- Metal case
- 5years warranty

UPF60S48CQH□

Blank : IP68 rated. Cable for I/O connection.
 Output voltage and current level can be adjusted through internal potentiometer
 D(option) : IP68 rated. Constant current level adjustable through output cable with 10V PWM signal or 1-10Vdc or resistance

IP68 SELV LPS

| ITEM | UPF60S12CQH | UPF60S24CQH□ | UPF60S36CQH□ | UPF60S48CQH□ | |
|--------------------|---|--|--------------|----------------------------------|------------|
| INPUT | VOLTAGE RANGE AC90~305V | | | | |
| | FREQUENCY RANGE 47~63Hz | | | | |
| | POWER FACTOR PF>0.95 at over 60% of rated power | | | | |
| | EFFICIENCY(typ.) | 84% | 86% | 86% | 88% |
| | AC CURRENT(typ.) | 0.8A/115VAC (typ) 0.4A/230VAC (typ) | | | |
| | INRUSH CURRENT(typ.) | COLD START 40A/230VAC | | | |
| | LEAKAGE CURRENT | <2.5mA / 230VAC | | | |
| OUTPUT | RATED CURRENT | 5A | 2.5A | 1.7A | 1.25A |
| | CONSTANT CURRENT REGION | - | 14.4-24V | 21.6-36V | 28.8-48V |
| | RATED POWER | 60W | | | |
| | VOLTAGE ADJ. RANGE | 10.8~13.2V | 22~27V | 33~40V | 43~53V |
| | CURRENT ADJ. RANGE | - | 1.5~2.5A | 1~1.7A | 0.75~1.25A |
| | CURRENT ACCURACY | ±5% | | | |
| | RIPPLE&NOISE(max.) Note2 | 150mVp-p | | | |
| | SETUP,RISE TIME(max.) | 3000ms,100ms/115VAC at full load | | 3000ms,100ms/230VAC at full load | |
| HOLD UP TIME(typ.) | 50ms/115VAC at full load 50ms/230VAC at full load | | | | |
| PROTEC-TION | OVER CURRENT Note3 | 12V : Over 110% of rating ; recovers automatically after fault condition is removed 24,36,48V : 95~108% | | | |
| | SHORT CIRCUIT | Hiccup mode ; recovers automatically after fault condition is removed | | | |
| | OVER VOLTAGE | 115~140% of rating | | | |
| | OVER TEMPERATURE | 95~105±10℃ (temp. Sensor) ; recovers automatically after fault condition is removed | | | |
| ISOLA-TION | WITHSTAND VOLTAGE | I/P-O/P:AC3.75KV, I/P-F.G:AC2KV, O/P-F.G:AC1.5KV | | | |
| | ISOLATION RESISTANCE | I/P-O/P, I/P-F.G, O/P-F.G:DC500V 100Mohms(At room temp. & humid.) | | | |
| ENVIRON-MENT | WORKING TEMP.&HUMID. | -40~+70℃ (Refer to "DERATING CURVE),20~95%RH | | | |
| | STORAGE TEMP.&HUMID. | -40~+80℃,10~95%RH | | | |
| | VIBRATION | 10~500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes | | | |
| OTHERS | DIMENSION/WEIGHT 174*61.5*36.8mm(L*W*H)/0.66Kg | | | | |

NOTE

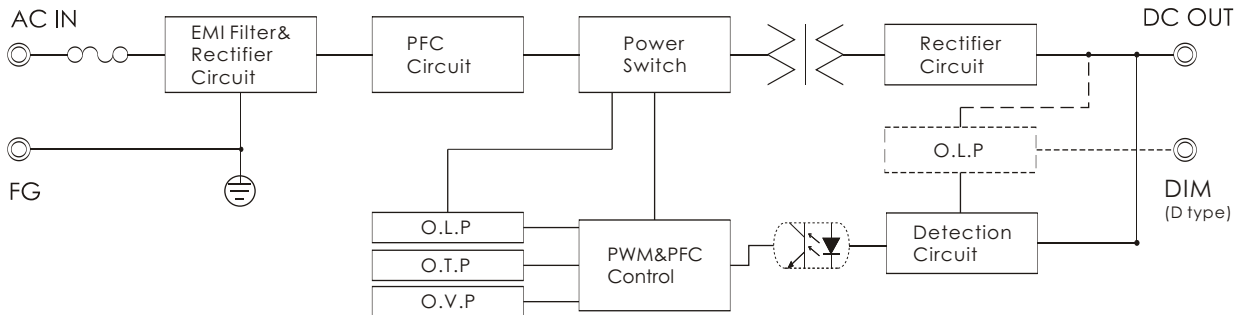
1. All parameters not specially mentioned are measured at 220vac input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pare-wire terminated with 0.1 uF & 47uF parallel capacitor.
3. Refer to "DRIVING METHODS of LED MODULE"

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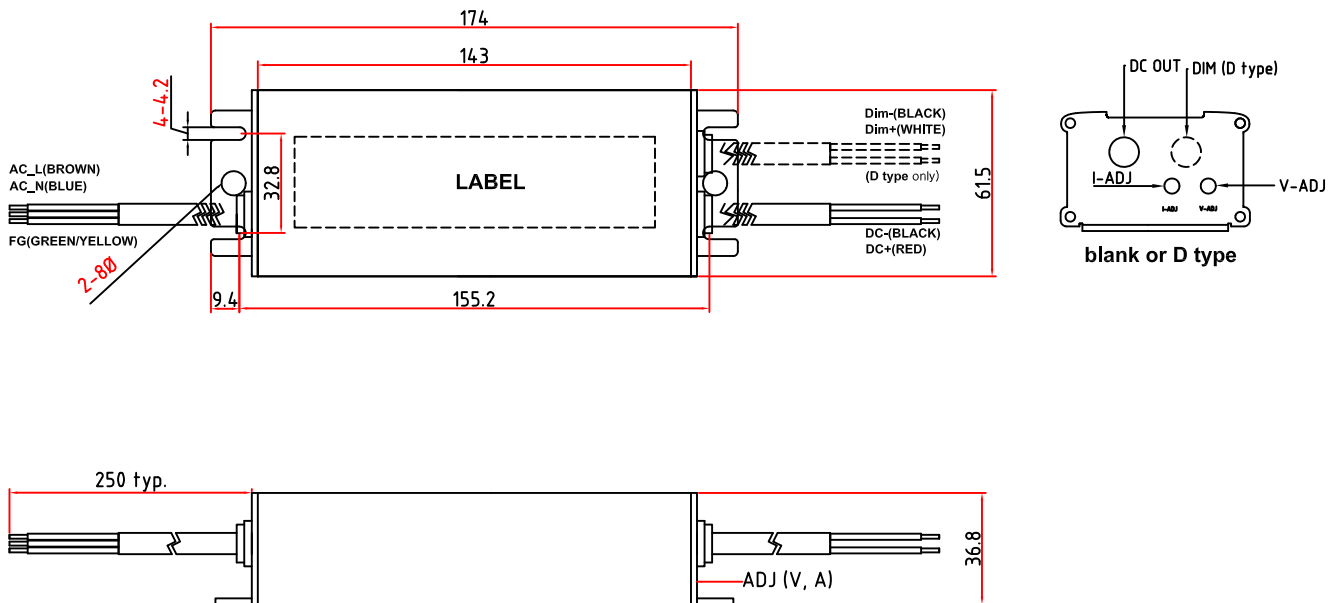
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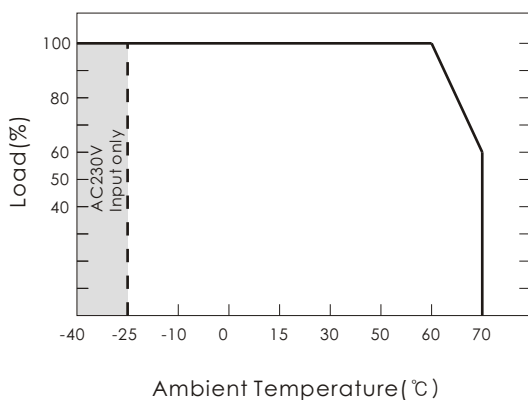
■ BLOCK DIAGRAM



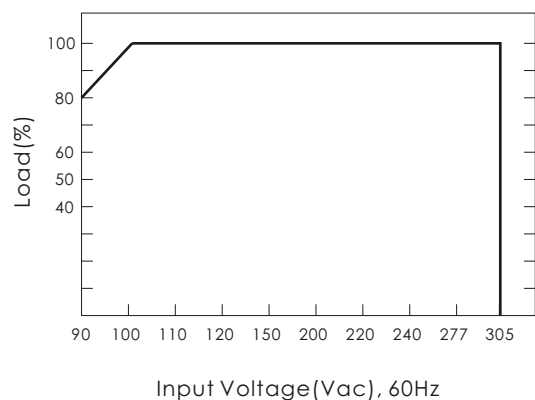
■ DIMENSIONS (unit:mm)



■ DERATING CURVE

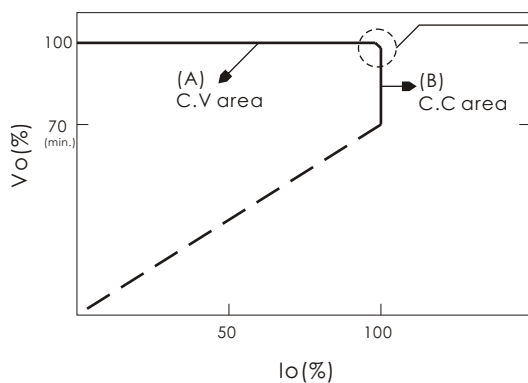


■ STATIC CHARACTERISTICS



DRIVING METHODS of LED MODULE

- C.V.+C.C. characteristics can be operated at both C.V. mode(with LED driver, at area (A)) and C.C. mode(direct driver, at area(B))
- At the moment of power on, the LED converter will work in C.V. Mode and can be provide a peak output current; after the LED turns on, the LED converter will go into C.C. Mode(pattern pending)



In the constant current region, the highest voltage at the output of the driver depends on the configuration of the systems.

DIMMING OPERATION(option:D type)

- Built-in 3 in 1 dimming function. Output constant current level can be adjusted through output cable by connecting 10V PWM signal or 1-10Vdc or resistance between DIM+ and DIM-.
- Please do not connect 'DIM-' to 'V-'
- 10V PWM signal for output current adjustment(typ.): frequency range:100Hz~3KHz

| | | | | | | | | | | | |
|--------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|---------|
| Duty Value | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | Open |
| Percent of Rated Current | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | 95~108% |

- 1-10V dimming function for output current adjustment(typ.)

| | | | | | | | | | | | |
|--------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|---------|
| Dimming Value | 1V | 2V | 3V | 4V | 5V | 6V | 7V | 8V | 9V | 10V | Open |
| Percent of Rated Current | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | 95~108% |

- Reference resistance value for output current adjustment(typ.)

| | | | | | | | | | | | | |
|--------------------------|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| Resistance Value | Single driver | 10KΩ | 20KΩ | 30KΩ | 40KΩ | 50KΩ | 60KΩ | 70KΩ | 80KΩ | 90KΩ | 100KΩ | Open |
| | Multiple driver (N=driver quantity for synchronized dimming operation) | 10KΩ /N | 20KΩ /N | 30KΩ /N | 40KΩ /N | 50KΩ /N | 60KΩ /N | 70KΩ /N | 80KΩ /N | 90KΩ /N | 100KΩ /N | --- |
| Percent of Rated Current | | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | 95~108% |