Features

- High Efficiency (Up to 87%)
- Active Power Factor Correction (0.95 Typical)
- Constant Current Output
- Lightning Protection
- Dimming Control
- All-Around Protection: SCP, OTP, OVP and Open Lamp
- IP67 and Damp & Wet Location

Description

The ESC-075SxxxDT(ST) series operate from a 249 ~ 528 Vac input range. They are designed to be highly efficient and highly reliable. The standard features include dimming control, lightning protection, short circuit protection, over temperature protection, over voltage protection, and Open Lamp Protection.

Models

Output Current (1)	Input Voltage Range	Output Voltage Range	Max Output Power	Efficiency (2)	Power Factor		Model Name (3)
					277Vac	480Vac	
350 mA	249 ~ 528 Vac	107~214Vdc	75 W	87.0%	0.95	0.90	ESC-075S035DT(ST)
700 mA	249 ~ 528 Vac	53~107 Vdc	75 W	86.0%	0.95	0.90	ESC-075S070DT(ST)
1050 mA	249 ~ 528 Vac	36 ~ 72 Vdc	75 W	87.0%	0.95	0.90	ESC-075S105DT(ST)
1400 mA	249 ~ 528 Vac	26 ~ 53 Vdc	75 W	87.0%	0.95	0.90	ESC-075S140DT(ST)(4)
2100 mA	249 ~ 528 Vac	18 ~ 36 Vdc	75 W	86.0%	0.95	0.90	ESC-075S210DT(ST)(4)
3150 mA	249 ~ 528 Vac	12 ~ 24 Vdc	75 W	85.0%	0.95	0.90	ESC-075S315DT(ST)(4)(5)(6)

Notes: (1) The output current is adjustable at factory from 50% to 100%.
(2) Measured at 25℃, full load and 480 Vac input.
(3) A suffix –xxxx may be added to denote variations or modifications to the current models.
(4) UL Class 2 Output (USR) for dry and damp location.
(5) CUL Class 2 Output (CNR) for dry and damp location.
(6) CUL Class 2 Output (CNR) for wet location

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	249 V	-	528 V	
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	0.7 mA	At 480Vac 60Hz input
Input AC Current	-	-	0.34 A	Measured at full load and 277 Vac input.
	-	-	0.21 A	Measured at full load and 480 Vac input.
Inrush current	-	-	135 A	At 480Vac input 25℃ Cold start, Duration= 1.2mS, 10%Ipk-10%Ipk
Power Factor	0.90	-	-	At 277Vac-480Vac, 100% load

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%		5%	
No-load Output Voltage	104% Vomax	112% Vomax	120% Vomax	1400mA: 59.9V (max)
Output Current Ripple		20%Io	30%Io	Measured at full load, 25℃ ambient temperature,
Line Regulation	-	-	±1%	
Load Regulation	-	-	±3%	
Turn-on Delay Time	-	1.0 s	3.0 s	Measured at full load, 277Vac input.
	-	1 .0 s	3.0 s	Measured at full load, 480Vac input.

Note: All specifications are typical at 25 °C unless otherwise stated.

Protection Functions

Parameter	Min.	Typ.	Max.	Notes
Over Temperature Protection---Tc	-	110 °C	-	Auto recovery mode. The power supply shall return to normal operation after the fault condition is removed.
Short Circuit Protection	Hiccup and no damage shall occur when any output operating in a short circuit condition.			

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency I_O = 350 mA I_O = 700 mA I_O = 1050 mA I_O = 1400 mA I_O = 2100 mA I_O = 3150 mA	 87 % 86 % 87 % 87 % 86 % 85 %	 88 % 87 % 88 % 88 % 87 % 86 %	 - - - - - -	Measured at full load, 277Vac input, 25℃ ambient temperature, after the unit is thermally stabilized. It will be 1% lower, if measured immediately after startup.
Efficiency I_O = 350 mA I_O = 700 mA I_O = 1050 mA I_O = 1400 mA I_O = 2100 mA I_O = 3150 mA	 86 % 85 % 86 % 86 % 85 % 84 %	 87 % 86 % 87 % 87 % 86 % 85 %	 - - - - - -	Measured at full load, 480Vac input, 25℃ ambient temperature, after the unit is thermally stabilized. It will be 1% lower, if measured immediately after startup.
MTBF	-	250,000 Hours	-	Measured at 480Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Life Time	-	61,900 Hours	-	Measured at 480Vac input, 80%load; Case temperature=60℃ @ Tc point. See life time vs. Tc curve for the details
Case Temperature	-	-	90°C	
Dimensions Inches (L × W × H) Millimeters (L × W × H)	7.40 × 3.46 × 1.54 188 × 88 × 38			
Net Weight	-	1000 g	-	

Note: All specifications are typical at 25 °C unless otherwise stated.

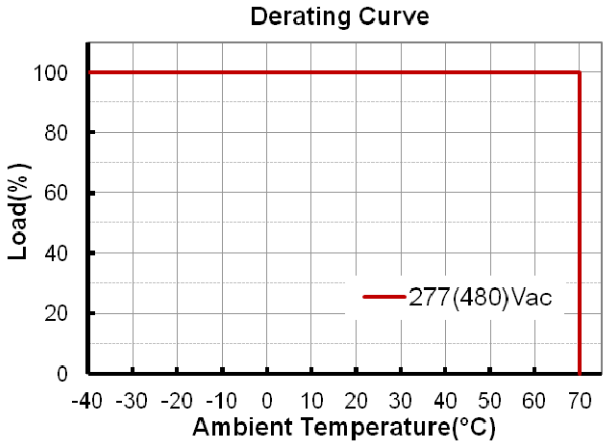
Environmental Specifications

Parameter	Min.	Typ.	Max.	Notes
Operating Temperature	-40 ℃	-	+70 ℃	Humidity: 10% RH to 100% RH See Derating Curve for more details
Storage Temperature	-40 ℃	-	+85 ℃	Humidity: 5% RH to 100% RH

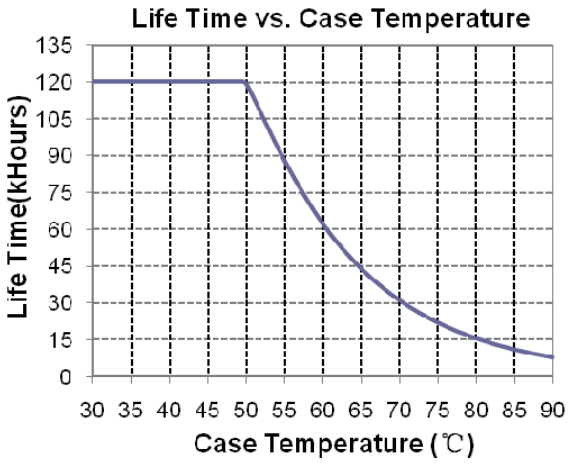
Safety & EMC Compliance

Safety Category	Standard
UL/CUL	UL8750, UL1310, UL1012, CAN/CSA-C22.2 No. 223-M91, CSA C22.2 No. 107.1-01
CE	EN61347-1,EN61347-2-13
EMI Standards	**Notes**
EN 55015	Conducted emission Test & Radiated emission Test
EN 61000-3-2	Harmonic current emissions Class C
EN 61000-3-3	Voltage fluctuations & flicker
FCC Part15	ANSI C63.4:2009 Class B
EMS Standards	**Notes**
EN 61000-4-2	Electrostatic Discharge (ESD): 8 kV air discharge, 4 kV contact discharge
EN 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test-RS
EN 61000-4-4	Electrical Fast Transient / Burst-EFT
EN 61000-4-5	Surge Immunity Test: AC Power Line: line to line 4 kV, line to earth 6 kV
EN 61000-4-6	Conducted Radio Frequency Disturbances Test-CS
EN 61000-4-8	Power Frequency Magnetic Field Test
EN 61000-4-11	Voltage Dips
EN 61547	Electromagnetic Immunity Requirements Applies To Lighting Equipment

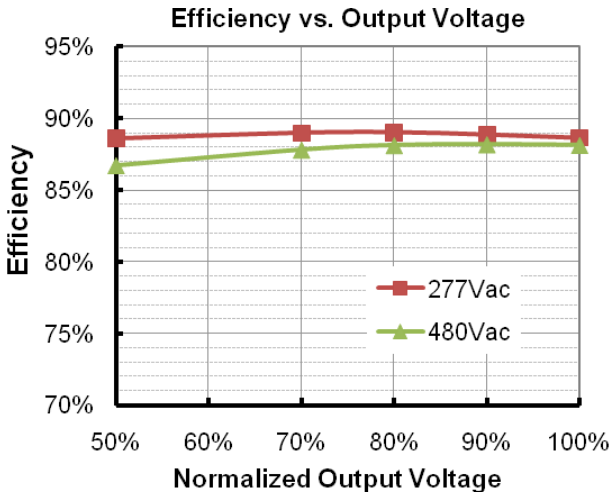
Derating Curve



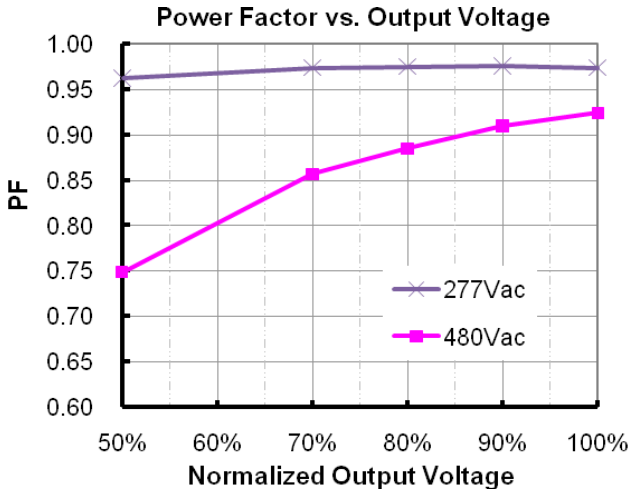
Life Time vs. Case Temperature Curve



Efficiency vs Load (350mA Model)



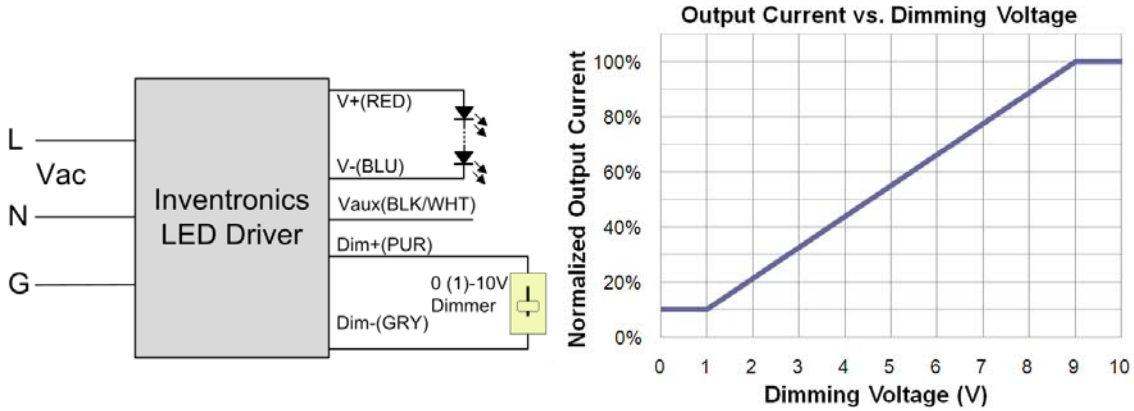
Power Factor Characteristics



Dimming Control

Parameter	Min.	Typ.	Max.	Notes
12V output voltage (Vaux)	10.8 V	12 V	13.2 V	
Vaux source current	10 mA	15 mA	20 mA	
Absolute maximum voltage on the 0~10V input pin	-2 V	-	15 V	
Source current on 0~10V input pin	150 uA	200 uA	250 uA	

The dimmer control is operated from an input signal of 1 – 10 Vdc. Recommended implementations are provided below.



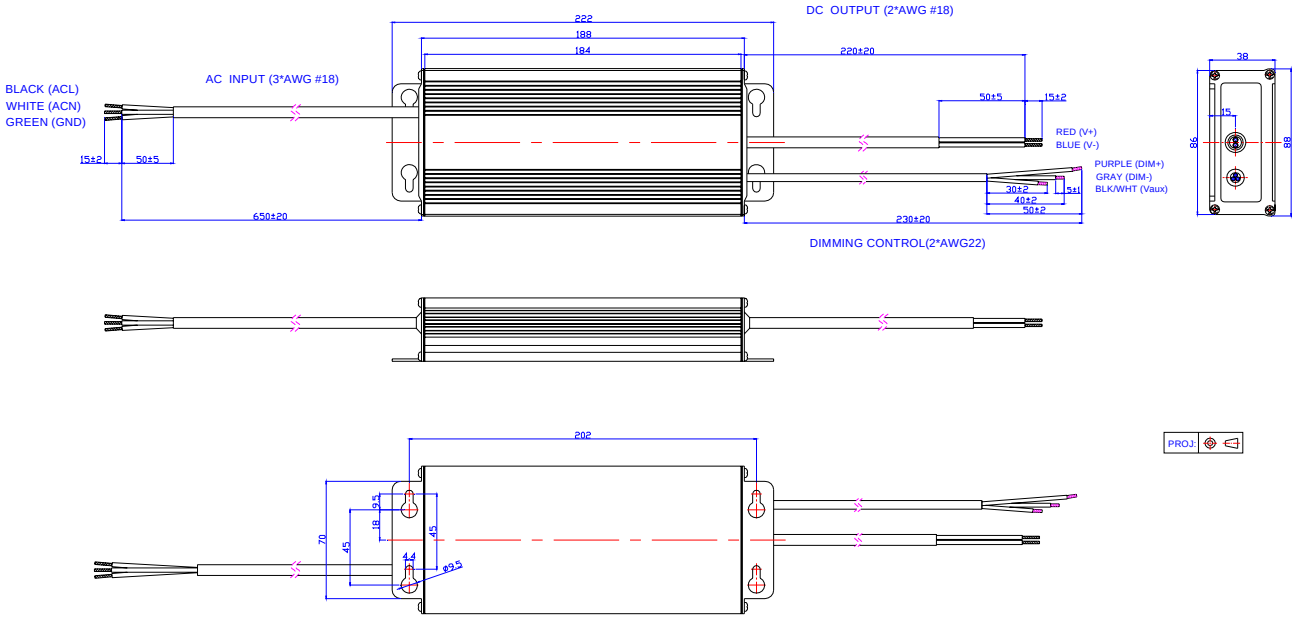
Implementation

Notes:

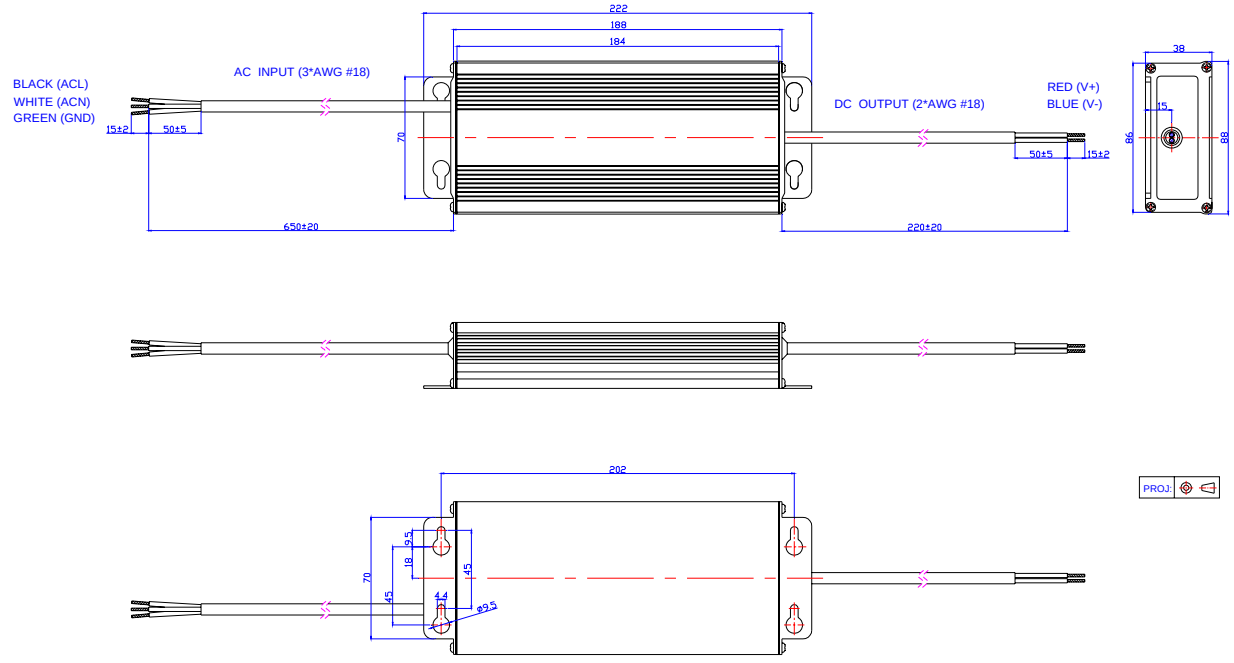
1. The dimmer can also be replaced by an active 0-10V voltage source signal or passive components like resistors and zener.
2. The dimming signal is allowed to be less than 1V, when it is between 0 and 1 V, the output level is 10%.
3. Do NOT connect the Gray Wire (Dim-) to Blue Wire (V-) together.
4. The dimming section is not isolated with output.
5. If 0-10V dimming is not used, Dim + can be either open or connected to Vaux.

Mechanical Outline

ESC-075SxxxDT



ESC-075SxxxST



RoHS Compliance

Our products comply with the European Directive 2011/65/EC, calling for the elimination of lead and other hazardous substances from electronic products.

Revision History

Change Date	Rev.	Description of Change		
		Item	From	To
2011-06-22	A	First Release	/	/
2011-08-03	B	Output Specifications- Turn-on Delay Time	2 s	3 s
2011-09-22	C	CE,FCC	/	Added
2012-02-13	D	OTP	Latch Mode	Auto Recovery Mode
2012-06-05	E	Notes of Life time	/	Updated
		Life time curve	/	Added
		EN61000-4-5	line to line 2 kV, line to earth 4 kV	line to line 4 kV, line to earth 6 kV
2012-07-17	F	Max Case Temperature	/	Updated
2012-08-02	G	Class 2 of models	/	Updated
		Inrush Current	60 A	135 A
2012-09-26	H	Min PF	/	Added
		EFF Curve, PF Curve	/	Added
		Typical MTBF & Life time	/	Added
		Life time Curve	/	Added
2013-08-06	I	1400mA to be class 2 model	/	/
2014-04-09	J	Operating Temperature	-35 ℃	-40 ℃
		Derating curve	/	Updated