

- High Efficiency (Up to 92%)
- Active Power Factor Correction (0.99 Typical)
- I_{in} Start Current Output
- Dimming* Function
- Lightening Protection
- All-Round Protection: OVP, SCP, OTP
- Waterproof (IP67)
- Compliant With UL8750 & EN61347 Safety Regulations
- Compliant With ANSI/IEEE C62.41, Class A Operation



Description

The PLEC-075SxxxDT Series operate from a 90 ~ 305 Vac input range. These units will provide up to a 5 A of output current and a maximum output voltage of 214 V for 75 W maximum output power. They are designed to be highly efficient and highly reliable. Features include dimming control, over voltage protection, short circuit protection and over temperature protection.

Models

Output Current	Input Voltage	Max. Output Voltage	Max. Output Power	Typical Efficiency (1)	Power Factor		Model Number (2)
					110Vac	220Vac	
350 mA	90 ~ 305 Vac	214 Vdc	75 W	92%	0.99	0.96	USOC-075S035DT(3)★
450 mA	90 ~ 305 Vac	166 Vdc	75 W	92%	0.99	0.96	USOC-075S045DT(3)★
700 mA	90 ~ 305 Vac	108 Vdc	75 W	91%	0.99	0.96	USOC-075S070DT(3)
1050 mA	90 ~ 305 Vac	72 Vdc	75 W	90%	0.99	0.96	USOC-075S105DT(3)
1400 mA	90 ~ 305 Vac	54 Vdc	75 W	90%	0.99	0.96	USOC-075S140DT(4)
2100 mA	90 ~ 305 Vac	36 Vdc	75 W	89%	0.99	0.96	USOC-075S210DT(5)
2800 mA	90 ~ 305 Vac	27 Vdc	75 W	89%	0.99	0.96	USOC-075S280DT(5)★
3750 mA	90 ~ 305 Vac	20 Vdc	75 W	88%	0.99	0.96	USOC-075S375DT(5)
5000 mA	90 ~ 305 Vac	15 Vdc	75 W	86%	0.99	0.96	USOC-075S500DT(5)

- Notes:** (1) Measured at full load and 220 Vac input.
 (2) A suffix –xxxx may be added to denote variations or modifications to the base product, where x can be any alphanumeric character or blank.
 (3) Non-Class2 output (USR & CNR).
 (4) Class 2 output (USR), Non-Class 2 output (CNR).
 (5) Class 2 output (USR & CNR).
 (6) ★: Popular model.

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	90 V	-	305 V	
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	1 mA	At 277Vac 50Hz input
Input AC Current	-	-	0.9 A	Measured at full load and 100 Vac input.
	-	-	0.42 A	Measured at full load and 220 Vac input.
Inrush Current	-	-	50 A	At 230Vac input 25°C Cold Start

Parameter	Min.	Typ.	Max.	Notes
Output Current Range				
$I_o = 350 \text{ mA}$	332 mA	350 mA	368 mA	
$I_o = 450 \text{ mA}$	428 mA	450 mA	472 mA	
$I_o = 700 \text{ mA}$	665 mA	700 mA	735 mA	
$I_o = 1050 \text{ mA}$	1000 mA	1050 mA	1100 mA	
$I_o = 1400 \text{ mA}$	1330 mA	1400 mA	1470 mA	
$I_o = 2100 \text{ mA}$	1995 mA	2100 mA	2205 mA	
$I_o = 2800 \text{ mA}$	2660 mA	2800 mA	2940 mA	
$I_o = 3750 \text{ mA}$	3565 mA	3750 mA	3935 mA	
$I_o = 5000 \text{ mA}$	4750 mA	5000 mA	5250 mA	
Output Voltage Range				
$I_o = 350 \text{ mA}$	107 V	-	214 V	
$I_o = 450 \text{ mA}$	83 V	-	166 V	
$I_o = 700 \text{ mA}$	54 V	-	108 V	
$I_o = 1050 \text{ mA}$	36 V	-	72 V	
$I_o = 1400 \text{ mA}$	27 V	-	54 V	
$I_o = 2100 \text{ mA}$	18 V	-	36 V	
$I_o = 2800 \text{ mA}$	13 V	-	27 V	
$I_o = 3750 \text{ mA}$	10 V	-	20 V	
$I_o = 5000 \text{ mA}$	7 V	-	15 V	
Ripple and Noise (pk-pk)	-	-	5% V_o	Measured by 20 MHz bandwidth oscilloscope and the output paralleled a 0.1 μF ceramic capacitor and a 10 μF electrolytic capacitor. V_o is the maximum output voltage.
Line Regulation	--		1%	
Load Regulation	--		3%	
Turn-on Delay Time	-	0.8 S	1.2 S	Measured at 110Vac input.
	-	0.4 S	0.6 S	Measured at 220Vac input.

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

Protection Functions

Parameter	Min.	Typ.	Max.	Notes
Over Voltage Protection				
$I_o = 350 \text{ mA}$	-	235 V	250 V	Latch mode. The power supply shall return to normal operation only after the power is turn-on again.
$I_o = 450 \text{ mA}$	-	195 V	215 V	
$I_o = 700 \text{ mA}$	-	118 V	130 V	
$I_o = 1050 \text{ mA}$	-	80 V	88 V	
$I_o = 1400 \text{ mA}$	-	65 V	70 V	
$I_o = 2100 \text{ mA}$	-	42 V	45 V	
$I_o = 2800 \text{ mA}$	-	35 V	38 V	
$I_o = 3750 \text{ mA}$	-	26 V	30 V	
$I_o = 5000 \text{ mA}$	-	18 V	25 V	
Over Temperature Protection	-	110 °C	-	Latch mode. The power supply shall return to normal operation only after the power is turn-on again.
Short Circuit Protection	No damage shall occur when any output operating in a short circuit condition. The power supply shall be self-recovery when the fault condition is removed.			

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency lo = 350 mA lo = 450 mA lo = 700 mA lo = 1050 mA lo = 1400 mA lo = 2100 mA lo = 2800 mA lo = 3750 mA lo = 5000 mA	88% 88% 87% 86% 86% 85% 85% 84% 82%	90% 90% 89% 88% 88% 87% 87% 86% 84%	- - - - - - - - -	Measured at full load, 110Vac input, 25°C ambient temperature, after the unit is thermally stabilized. It will be lower about 2%, if measured immediately after startup.
Efficiency lo = 350 mA lo = 450 mA lo = 700 mA lo = 1050 mA lo = 1400 mA lo = 2100 mA lo = 2800 mA lo = 3750 mA lo = 5000 mA	90% 90% 89% 88% 88% 87% 87% 86% 84%	92% 92% 91% 90% 90% 89% 89% 88% 86%	- - - - - - - - -	Measured at full load, 220Vac input, 25°C ambient temperature, after the unit is thermally stabilized. It will be lower about 2%, if measured immediately after startup.
MTBF	450,000 hours			For 2800 mA output model, measured at 110Vac input, 80%Load and 25° C ambient temperature (MIL-HDBK-217F).
Life Time	65,000 hours			For 2800 mA output model, measured at 110Vac input, 80%Load and 45° C ambient temperature
Dimensions Inches (L × W × H) Millimeters (L × W × H)	5.91 × 2.66 × 1.46 150 × 67.5 × 37			
Net Weight	-	750 g	-	

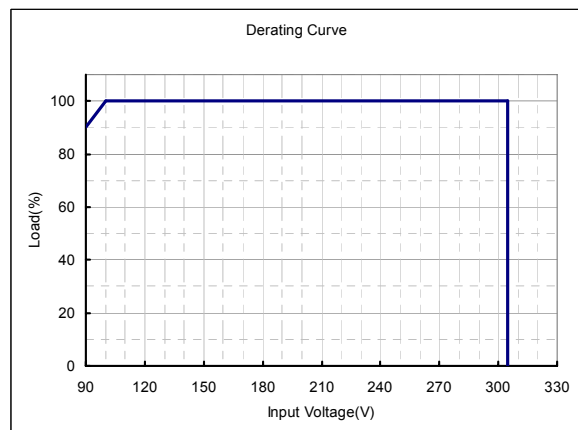
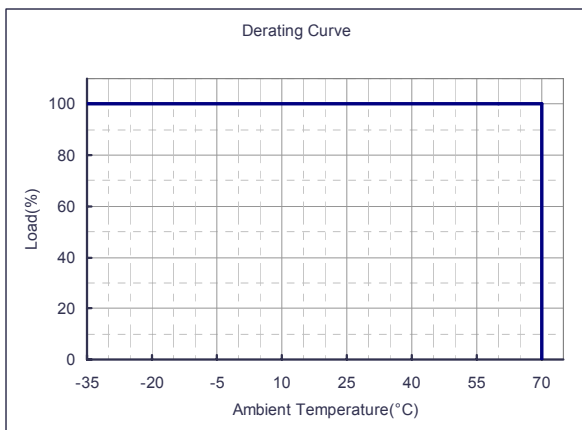
Note: All specifications are typical at 25 °C unless otherwise stated.

Environmental Specifications

Parameter	Min.	Typ.	Max.	Notes
Operating Temperature	-35 °C	-	+70 °C	Humidity: 10% RH to 100% RH
Storage Temperature	-40 °C	-	+85 °C	Humidity: 5% RH to 100% RH

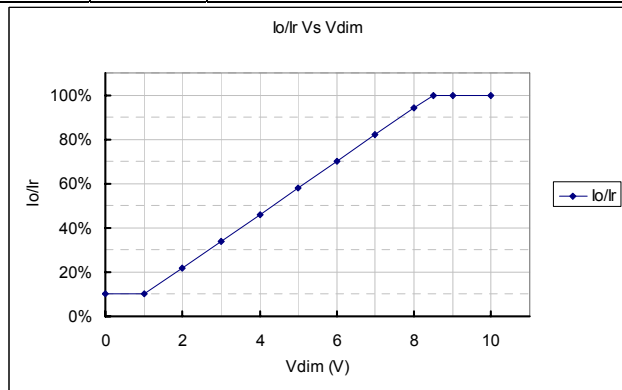
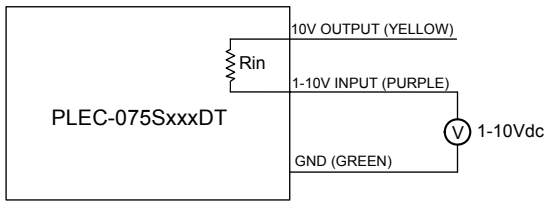
Safety Category	Country	Standard
CUL	USA & Canada	UL8750, UL935, UL1012, UL1310 Class 2, CSA-C22.2 No. 107.1, CSA C22.2 NO. 223-M91 Class 2
CE E	urope	EN61347-1, EN61347-2-13
EMI Standards		Notes
EN 55015		Conducted emission Test & Radiated emission Test with 6 dB margin
EMS Standards		Notes
EN 61000-3-2		Harmonic current emissions
EN 61000-3-3		Voltage fluctuations & flicker
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 2 kV, line to earth 4 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
ENERGY STAR Standards		Notes
ANSI/IEEE C62.41-1991		Transient Protection, power supply shall comply with Class A operation. The line transient shall consist of seven strikes of a 100 kHz ring wave, 2.5 kV level, for both common mode and differential mode.

Derating Curve

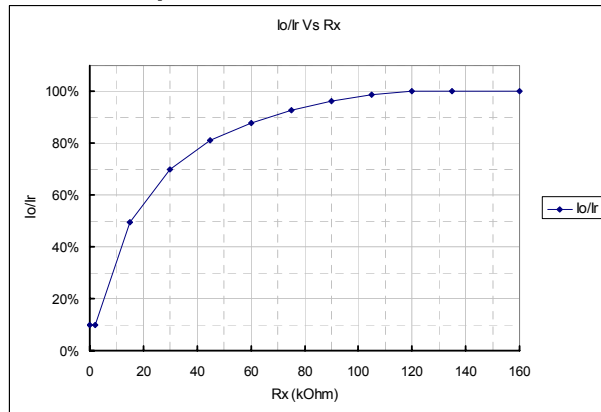
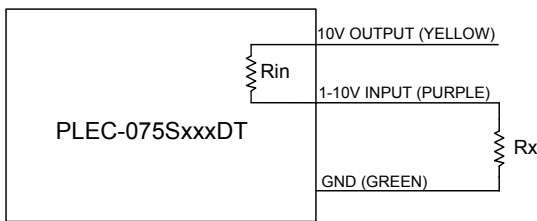


Specifications are subject to changes without notice.

Parameter	Min.	Typ.	Max.	Notes
10V output voltage	9.8 V	10 V	10.2 V	
10V output source current	0 mA	-	10 mA	
Absolute maximum voltage on the 1~10V input pin	-2 V	-	12 V	
Source current on 1~10V input pin	0 mA	-	0.5 mA	
Value of Rin (the resistor inside the LED driver which locate between the 1-10V input and 10V output pin)	19.8 K	20 K	20.2 K	



Implementation 1: DC input



Implementation 2: External resistor

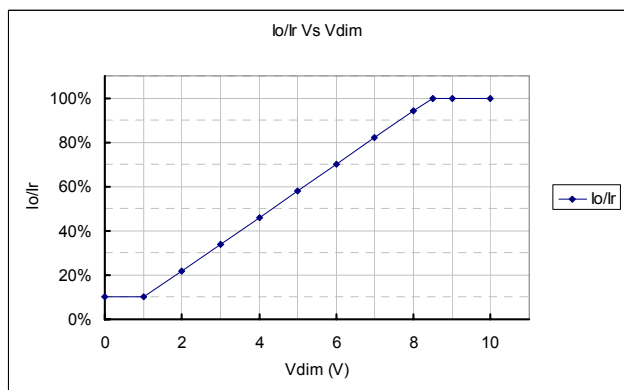
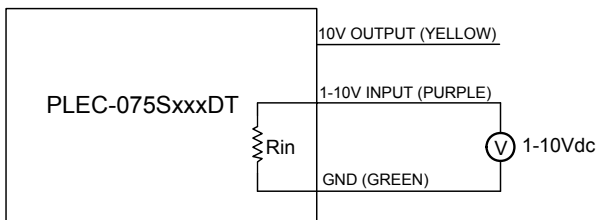
Notes:

1. If the dimming function is not used, please let the dimming leads floated.
2. Io is actual output current and Ir is rated current without dimming control.
3. For the driver to operate properly, the load voltage must be maintained above the minimum voltage threshold (approx. 50% of the max. output voltage for any given model).
4. If the output voltage is maintained above 50% of the maximum output voltage, the dimming control may be operated over the entire 1-10V range with output current varying from 100% down to practically 10%.
5. The dimming signal is allowed to be less than 1V, however, when it for 0-1V, the output current can maintain about 10%Ir. When it for 8.5-10V, the output current can maintain about 100%Ir.
6. Do not connect the GND of dimming to the output; otherwise, the LED driver can not work normally.

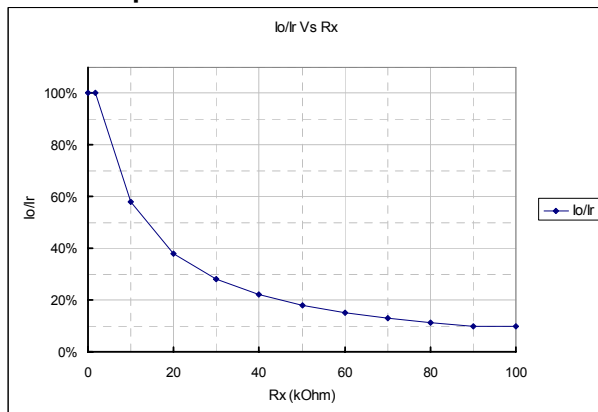
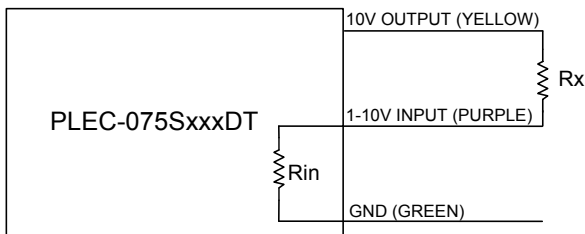
Specifications are subject to changes without notice.

2. With pull-down resistor: (The model number has a suffix -0040)

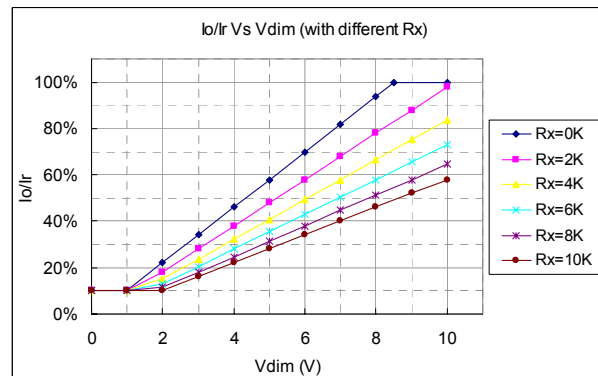
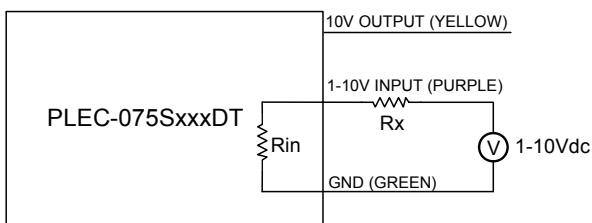
Parameter	Min.	Typ.	Max.	Notes
10V output voltage	9.8 V	10 V	10.2 V	
10V output source current	0 mA	-	10 mA	
Absolute maximum voltage on the 1~10V input pin	-2 V	-	12 V	
Sink current on 1~10V input pin	0 mA	-	1 mA	
Value of Rin (the resistor inside the LED driver which locate between the 1-10V input and GND)	9.9 K	10 K	10.1 K	



Implementation 1: DC input



Implementation 2: External resistor



Implementation 3: External resistor and 1-10V DC Input

Revision History

Change Date	Rev.	Description of Change		
		Item	From	To
2009-09-15	V2.0	Change MTBF and Life Time		
2009-12-03	V3.0	Change OTP to latch mode		
2010-01-19	V3.1	Change the product photo and mechanical outline		
2010-03-03	A	Add notes of UL1310 Class 2 for all models. (3) (4) (5)		
		Change efficiency for all models		
		Change MTBF	498,000 hours	450,000 hours
		Add Leakage Current in Input Specifications	//	
		Add Derating Curve	/	/
		Modify the tin-plated wire length tolerance in Mechanical Outline	±0.5	±2
		Add one note in Dimming Control	/	7. Do not connect the GND of dimming to the output; otherwise, the LED driver can not work normally.
2010-05-25	B	Add one item in the notes of Ripple and Noise (pk-pk)	/	Vo is the maximum output voltage.
		Delete Output Overshoot / Undershoot	Max. 10%	/
2010-05-31	C	Add star rank for recommended models	/	☆: Popular model.
		Standardize the tolerance in Mechanical Outline	//	
2010-07-30	D	Add Energy Star Standard	/	Comply With ANSI/IEEE C62.41, Class A Operation
2010-08-10	F	Change Turn-on Delay Time 110Vac input	Typ. 0.5S Max. 0.8S	Typ. 0.8S Max. 1.2S
2010-10-22	G	Update the part of dimming control	/	/
2010-11-12	H	Change efficiency of 5000 mA	Min. 84%, Typ. 86%	Min. 82%, Typ. 84%
		110 Vac	84%, 86%	82%, 84%
		220 Vac	86%, 88%	84%, 86%
		Add another dimming version with pull-down resistor	//	
2011-01-14	I	Change popular models	/	/