

## FEATURES

## 40W Constant Current LED Driver with Dimming

## LSWCD040 SERIES

- High Efficiency (up to 91%) & Active PFC (Typical 0.99)
- Wide Range Input 90-305Vac
- UL/cUL 8750, EN61347, CE & RoHS Compliant
- Class 2 Output (Some Models)
- Waterproof (IP66)
- 0-10V Dimming
- Over Voltage, Short Circuit & Over Temperature Protection



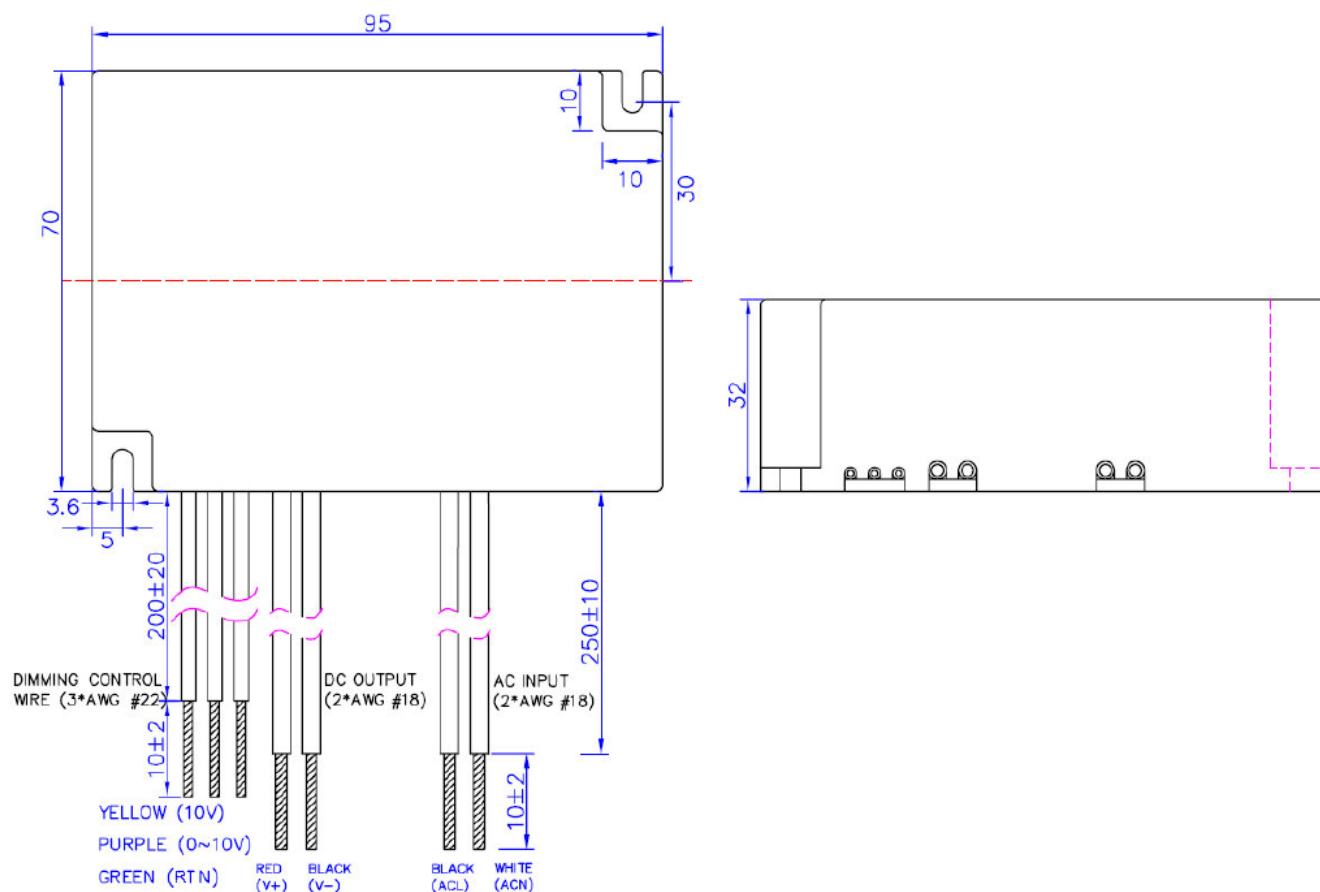
## SPECIFICATION

| Model          |                          | Output Current (mA)                                                                                                               | Output Voltage | No Load Output Voltage (+/-5%) | Efficiency (2)    |        | Power Factor (2) |        | Ripple & Noise (3) |
|----------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------|--------------------------------|-------------------|--------|------------------|--------|--------------------|
|                |                          |                                                                                                                                   |                |                                | 110Vac            | 220vAC | 110Vac           | 220Vac |                    |
| LSWCD040S035PS |                          | 350                                                                                                                               | 69-114         | 123                            | 89%               | 91%    | 0.99             | 0.96   | 4.6                |
| LSWCD040S045PS |                          | 450                                                                                                                               | 53-89          | 98                             | 89%               | 91%    | 0.99             | 0.96   | 3.6                |
| LSWCD040S070PS |                          | 700                                                                                                                               | 34-57          | 63                             | 88%               | 90%    | 0.99             | 0.96   | 2.3                |
| LSWCD040S105PS |                          | 1050                                                                                                                              | 23-38          | 42                             | 87%               | 89%    | 0.99             | 0.96   | 1.5                |
| LSWCD040S128PS |                          | 1280                                                                                                                              | 19-31          | 34                             | 86%               | 88%    | 0.99             | 0.96   | 1.3                |
| LSWCD040S140PS |                          | 1400                                                                                                                              | 17-29          | 32                             | 86%               | 88%    | 0.99             | 0.96   | 1.2                |
| LSWCD040S166PS |                          | 1660                                                                                                                              | 14-24          | 27                             | 85%               | 87%    | 0.99             | 0.96   | 1.0                |
| Output         | Line Regulation          | 1%                                                                                                                                |                |                                |                   |        |                  |        |                    |
|                | Load Regulation          | 3%                                                                                                                                |                |                                |                   |        |                  |        |                    |
|                | Turn-on Delay Time       | 1.0~2.0 s (Typ)                                                                                                                   |                |                                |                   |        |                  |        |                    |
|                | Leakage                  | 0.5 mA @277V, 50Hz                                                                                                                |                |                                |                   |        |                  |        |                    |
| Input          | Rated Voltage            | 100~277 Vac                                                                                                                       |                |                                |                   |        |                  |        |                    |
|                | Frequency Range          | 47Hz ~63Hz                                                                                                                        |                |                                |                   |        |                  |        |                    |
|                | Inrush Current           | 35A cold start @230Vac                                                                                                            |                |                                |                   |        |                  |        |                    |
|                | Current                  | 0.43 A @ 110 VAC      0.21 A @ 220 VAC (Max.)                                                                                     |                |                                |                   |        |                  |        |                    |
|                | THD                      | 15% Max. @277 Vac                                                                                                                 |                |                                |                   |        |                  |        |                    |
| Protection     | Short Circuit            | The power supply shall recover automatically when the fault condition is removed. No damage shall occur to the power supply.      |                |                                |                   |        |                  |        |                    |
|                | Over Temperature         | 110 °C Internal Temperature                                                                                                       |                |                                |                   |        |                  |        |                    |
|                | Over Voltage             | 1.4 Vo ±5% The power supply shall recover automatically when the fault condition is removed.                                      |                |                                |                   |        |                  |        |                    |
| Environmental  | Temperature Range        | Operational                                                                                                                       |                |                                | - 35°C ~ 60°C     |        |                  |        |                    |
|                |                          | Storage                                                                                                                           |                |                                | - 40 ~ +85°C      |        |                  |        |                    |
|                | Humidity                 | Operational                                                                                                                       |                |                                | 10% ~ 100% RH     |        |                  |        |                    |
|                |                          | Storage                                                                                                                           |                |                                | 5% ~100% R.H      |        |                  |        |                    |
| Safety & EMC   | Safety Standards         | UL8750 Compliance to UL1310 Class2, UL1012 UL935 CAN/CSA-22.2 No.0, CSA-C22.2 No.107.1, CSA-C22.2 No.250.0EN61347-1, EN61347-2-13 |                |                                |                   |        |                  |        |                    |
|                | EMI Radiated & Conducted | EN55015, FCC PART 15 CLASS B ANSI C63.4: 2009                                                                                     |                |                                |                   |        |                  |        |                    |
|                | EMS Immunity             | EN61000-3-2, EN61000-3-3, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, EN61547     |                |                                |                   |        |                  |        |                    |
| Others         | MTBF                     | 450,000 Hours                                                                                                                     |                |                                |                   |        |                  |        |                    |
|                | Lifetime                 | 80,000 Hours (See curve for detail)                                                                                               |                |                                |                   |        |                  |        |                    |
|                | Dimensions               | (L*W*H)                                                                                                                           |                | 3.74*2.76*1.26 Inch.           | 95.0*70.0*32.0 mm |        |                  |        |                    |
|                | Weight                   | 330g                                                                                                                              |                |                                |                   |        |                  |        |                    |

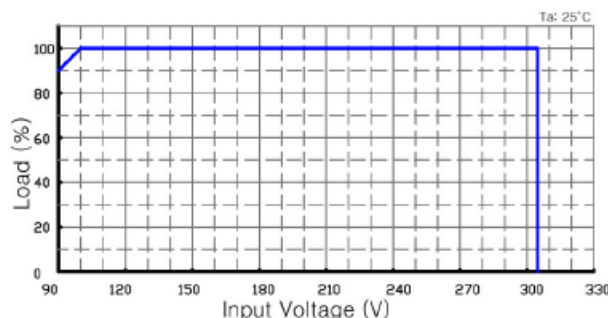
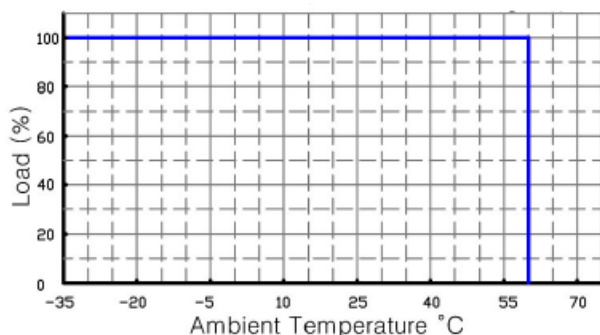


- NOTE:**
1. All specifications are typical at 25°C unless otherwise stated.
  2. The “Efficiency” & “PF” values are measured at full load, after the unit is thermally stabilized, otherwise they will vary about 1%.
  3. The “Ripple & Noise” values are measured by 20MHz bandwidth oscilloscope and the output paralleled a 0.1uF ceramic capacitor and a 10uF electrolytic capacitor.

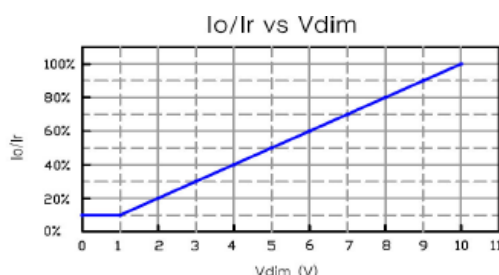
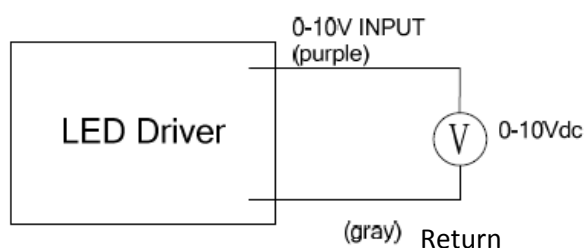
### Mechanical Specifications



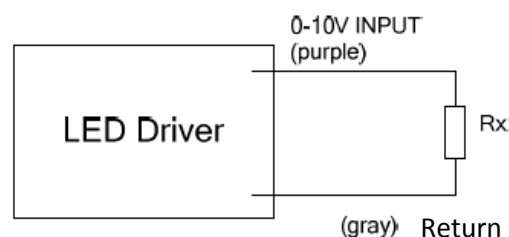
## Derating Curves



## Dimming



Mode 1: 0-10Vdc Input on Dimming Control



Mode 2: External Resistor on Dimming Control

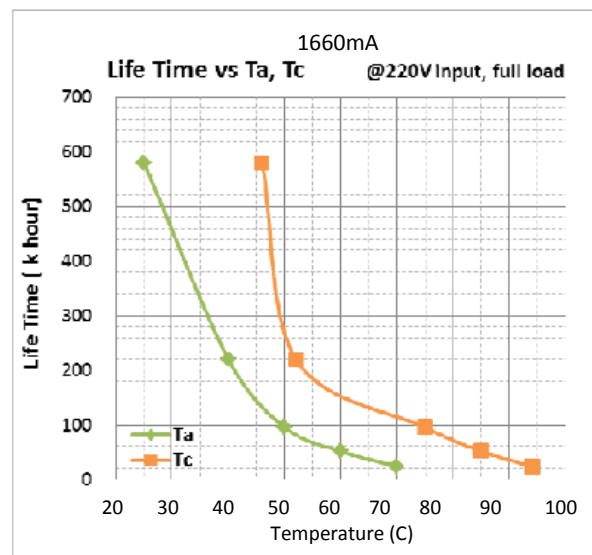
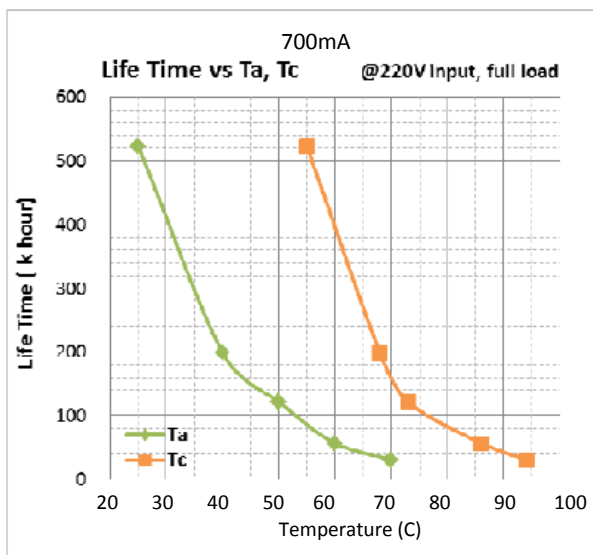
| Parameter                  | Values    | Conditions    |
|----------------------------|-----------|---------------|
| Absolute Max. Voltage      | 0 ~ 12 V  | Normal 10~11V |
| 0-10V Input Source Current | 0 ~ 10 mA |               |

### NOTE:

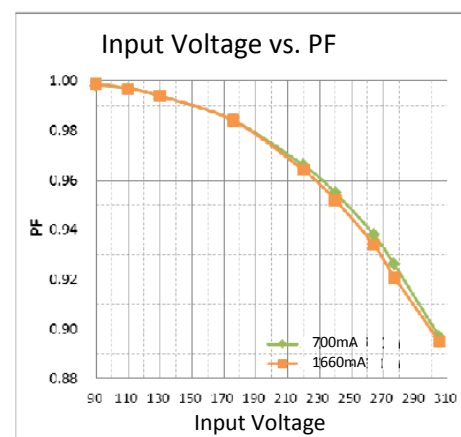
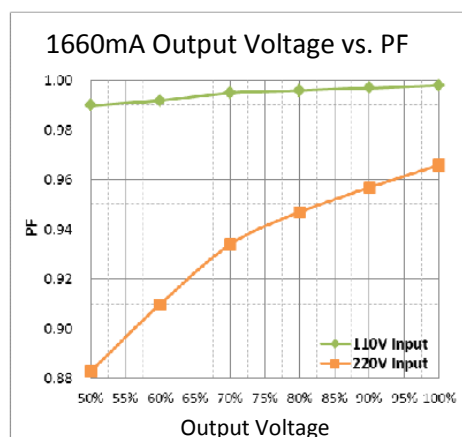
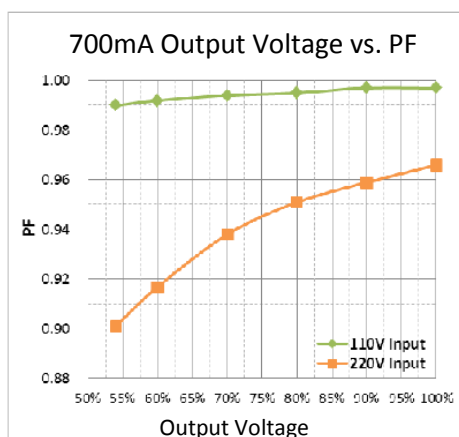
- 1.If the dimming function is not used, short 10V output pin (yellow) and 1-10V input pin (purple).
2.  $I_o$  is actual output current and  $I_r$  is rated current without dimming control.
3. If the dimming signal is less than 1V the connected LEDs may flicker. Keeping dimming voltage greater than 1V in application is strongly recommended.
4. Do not connect the green dimming wire to the output.



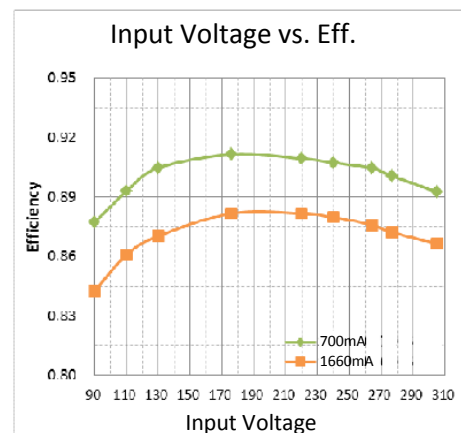
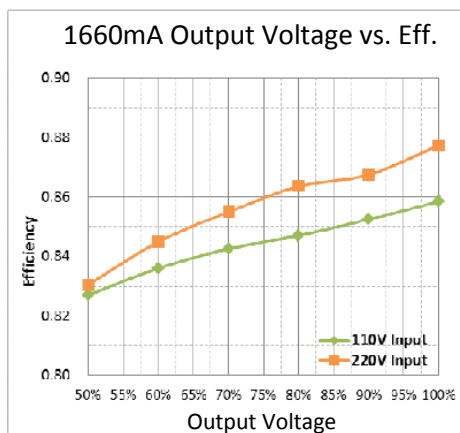
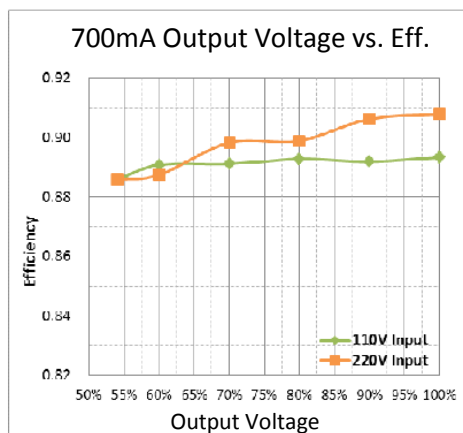
### Lifetime Curves



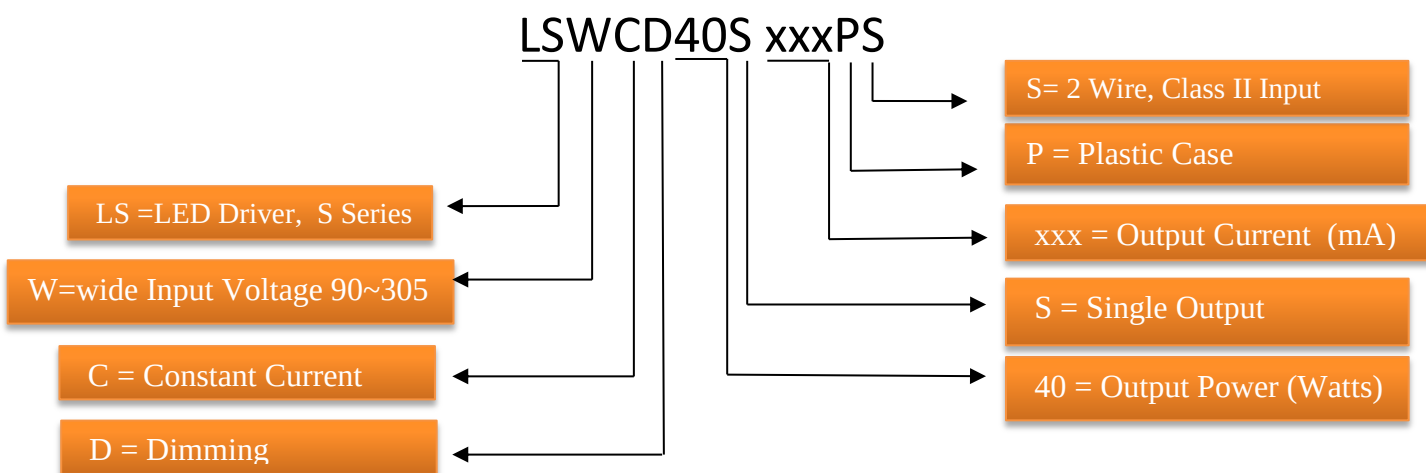
### Power Factor Curves



### Efficiency Curves



## PART NUMBER SCHEME



SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AUTECH IS NOT RESPONSIBLE FOR ISSUES ARISING FROM ERRORS OR OMMISIONS



## FEATURES

- High efficiency (Up to 91%) & Active PFC (typical 0.99)
- UL 8750, EN61347 & CE
- Wide Input Voltage 90~305VAC
- Class 2 Output (Some Models) & Dry & Damp Location (IP67)
- 0-10 Dimming With Aux. Output
- Short Circuit, Over Voltage & Over Temperature Protection
- RoHS Compliant
- 2 Case Options



## LSWCD040ST SERIES

## Metal 40W Constant Current Output Dimming LED Driver

## SPECIFICATIONS

| Model         |                              | LSWCD040S035ST-x       | LSWCD040S045ST-x                                                                                                                                   | LSWCD040S070ST-x | LSWCD040S105ST-x |
|---------------|------------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------|
| Output        | Voltage                      | 69~114                 | 54~89                                                                                                                                              | 34~57            | 23~38            |
|               | Current (min-max)            | 350 mA                 | 450 mA                                                                                                                                             | 700 mA           | 1050 mA          |
|               | No load Output Voltage ± 5 V | 123                    | 98                                                                                                                                                 | 63               | 42               |
|               | Ripple & Noise               | 4.6 V                  | 3.6 V                                                                                                                                              | 2.3 V            | 1.5 V            |
|               | Line Regulation              | 1%                     |                                                                                                                                                    |                  |                  |
|               | Load Regulation              | 3%                     |                                                                                                                                                    |                  |                  |
|               | Turn-on Delay Time           | 1.0 ~2.0s (Typ)        |                                                                                                                                                    |                  |                  |
|               | Leakage                      | 0.75 mA Vin=277V, 50Hz |                                                                                                                                                    |                  |                  |
| Input         | Voltage Range                |                        | 90 ~ 305 Vac                                                                                                                                       |                  |                  |
|               | Frequency Range              |                        | 47Hz ~ 63Hz                                                                                                                                        |                  |                  |
|               | PFC                          | 110VAC                 | 0.99                                                                                                                                               | 0.99             | 0.99             |
|               |                              | 220VAC                 | 0.96                                                                                                                                               | 0.96             | 0.96             |
|               | Efficiency (Typ.) at 220Vac  |                        | 91.0%                                                                                                                                              | 91.0%            | 90.0%            |
|               | Inrush Current               |                        | 35A Cold start, Vin=230                                                                                                                            |                  |                  |
|               | AC Current (Typ.)            |                        | 0.43 A / 110 VAC                                                                                                                                   | 0.21 A / 220 VAC |                  |
| Protections   | Short Circuit                |                        | No damage shall occur when any output operating in a short circuit condition. The power supply shall self-recover when fault condition is removed. |                  |                  |
|               | Over Temperature             |                        | 110 °C (Typ. internal temperature)                                                                                                                 |                  |                  |
|               | Over Voltage (Typ.)          |                        | 1.4 Vo ±5% (Latch mode. The power supply shall return to normal operation only after recycling AC.)                                                |                  |                  |
| Environmental | Temperature Range            |                        | Operational                                                                                                                                        | - 35°C ~+70°C    |                  |
|               |                              |                        | Storage                                                                                                                                            | - 40 ~ +85°C     |                  |
|               | Humidity                     |                        | Operational                                                                                                                                        | 10% ~ 100% RH    |                  |
|               |                              |                        | Storage                                                                                                                                            | 5% ~100% R.H     |                  |
| Safety & EMC  | Safety Standards             |                        | UL8750,UL935,UL1012,UL1310 Class 2, CSA-22.2 No.107.1, CSA-C22.2 NO .223-M91 Class 2 EN61347-1, EN61347-2-13                                       |                  |                  |
|               | EMI Conduction & Radiation   |                        | EN55015,FCC Part 15 Class B, ANSI C63.4: 2009                                                                                                      |                  |                  |
|               | EMS Immunity                 |                        | EN61000-3-2, EN61000-3-3, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, EN61547                      |                  |                  |
| Others        | MTBF                         |                        | 470,000 HOURS                                                                                                                                      |                  |                  |
|               | Life Time                    |                        | 85,000 hours                                                                                                                                       |                  |                  |
|               | Dimension                    |                        | Narrow: 6.77(7.60)*1.71*1.36 inch; 172.0(193.0)*43.5*34.5 mm Wide: 3.98(5.00)*2.66*1.44 inch; 101.0(127.0)*67.5*36.5 mm                            |                  |                  |
|               | Weight                       |                        | 455g (Narrow)                                                                                                                                      |                  |                  |



## SPECIFICATIONS

## LSWCD040ST SERIES

## Metal 40W Constant Current Output Dimming LED Driver

- High efficiency (Up to 91%) & Active PFC (typical 0.99)
- UL 8750, EN61347 & CE
- Wide Input Voltage 90-305VAC
- Class 2 Output (Some Models) & Dry & Damp Location (IP67)
- 0-10 Dimming With Aux. Output
- Short Circuit, Over Voltage & Over Temperature Protection
- RoHS Compliant
- 2 Case Options



## FEATURES

| Model         |                                 | LSWCD040S128ST-x                                                                                                                                   | LSWCD040S140ST-x | LSWCD040S166ST-x |
|---------------|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------|
| Output        | Voltage Range                   | 19~31                                                                                                                                              | 17-29            | 14-24            |
|               | Current Range                   | 1280 mA                                                                                                                                            | 1400 mA          | 1660 mA          |
|               | No load Output Voltage ± 5 V    | 34                                                                                                                                                 | 32               | 27               |
|               | Ripple & Noise (3)              | 1.3 V                                                                                                                                              | 1.2 V            | 1.0 V            |
|               | Line Regulation                 | 1%                                                                                                                                                 |                  |                  |
|               | Load Regulation                 | 3%                                                                                                                                                 |                  |                  |
|               | Turn-on Delay                   | 1.0 ~2.0s                                                                                                                                          |                  |                  |
|               | Leakage                         | 0.75 mA Vin=277V, 50Hz                                                                                                                             |                  |                  |
| Input         | Voltage Range                   | 90 ~ 305 Vac                                                                                                                                       |                  |                  |
|               | Frequency Range                 | 47Hz ~ 63Hz                                                                                                                                        |                  |                  |
|               | PFC                             | 110VAC                                                                                                                                             | 0.99             | 0.99             |
|               |                                 | 220VAC                                                                                                                                             | 0.96             | 0.96             |
|               | Efficiency (Typ.) at 220Vac (2) | 88.0%                                                                                                                                              | 88.0%            | 87.0%            |
|               | Inrush Current                  | 35A Cold start, Vin=230                                                                                                                            |                  |                  |
| Protections   | AC Current (Typ.)               | 0.43 A / 110 VAC      0.21 A / 220 VAC                                                                                                             |                  |                  |
|               | Short Circuit                   | No damage shall occur when any output operating in a short circuit condition. The power supply shall self-recover when fault condition is removed. |                  |                  |
|               | Over Temperature                | 110 °C (Typ. internal temperature)                                                                                                                 |                  |                  |
|               | Over Voltage (Typ.)             | 1.4 Vo ±5% (Latch mode. The power supply shall return to normal operation only after recycling AC.)                                                |                  |                  |
| Environmental | Temperature Range               | Operational                                                                                                                                        | - 35°C ~+70°C    |                  |
|               |                                 | Storage                                                                                                                                            | - 40 ~ +85°C     |                  |
|               | Humidity                        | Operational                                                                                                                                        | 10% ~ 100% RH    |                  |
|               |                                 | Storage                                                                                                                                            | 5% ~100% R.H     |                  |
| Safety & EMC  | Safety Standards                | UL8750,UL935,UL1012,UL1310 Class 2, CSA-22.2 No.107.1, CSA-C22.2 NO .223-M91 Class 2 EN61347-1, EN61347-2-13                                       |                  |                  |
|               | EMI Conduction & Radiation      | EN55015,FCC Part 15 Class B, ANSI C63.4: 2009                                                                                                      |                  |                  |
|               | EMS Immunity                    | EN61000-3-2, EN61000-3-3, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, EN61547                      |                  |                  |
| Others        | MTBF                            | 470,000 HOURS                                                                                                                                      |                  |                  |
|               | Life Time                       | 85,000 hours                                                                                                                                       |                  |                  |
|               | Dimension (L*W*H)               | Narrow: 6.77(7.60)*1.71*1.36 inch; 172.0(193.0)*43.5*34.5 mm Wide: 3.98(5.00)*2.66*1.44 inch; 101.0(127.0)*67.5*36.5 mm                            |                  |                  |
|               | Weight                          | 455g (Narrow)                                                                                                                                      |                  |                  |



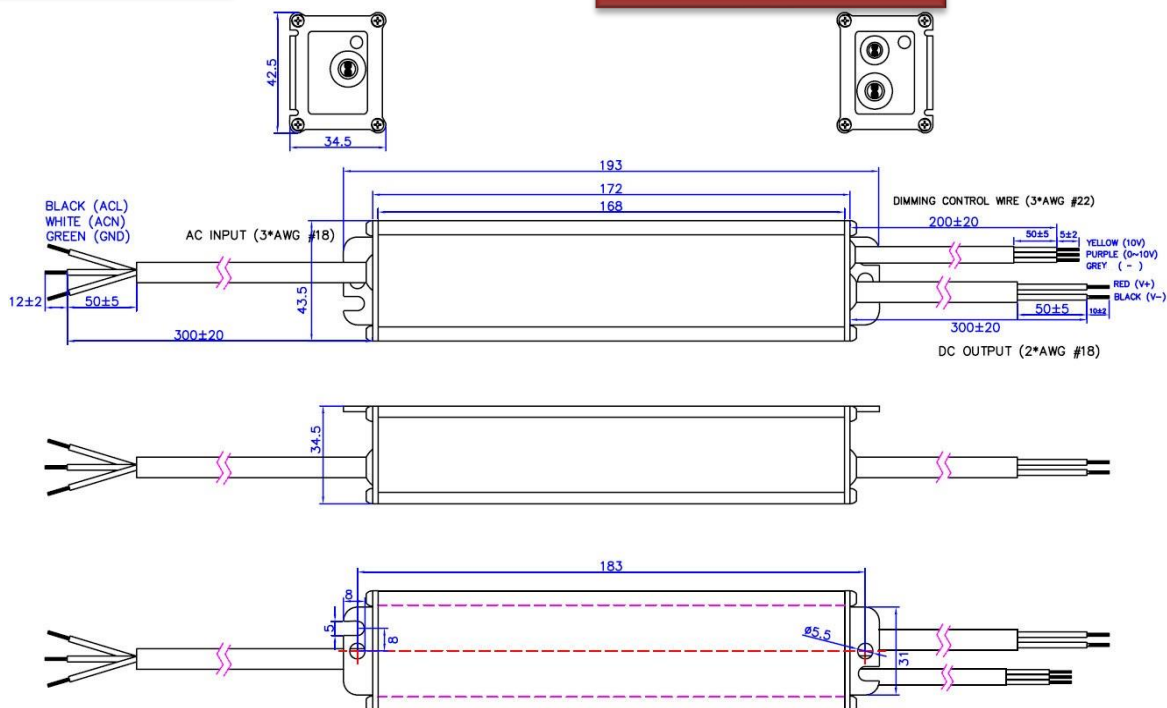


# NOTES:

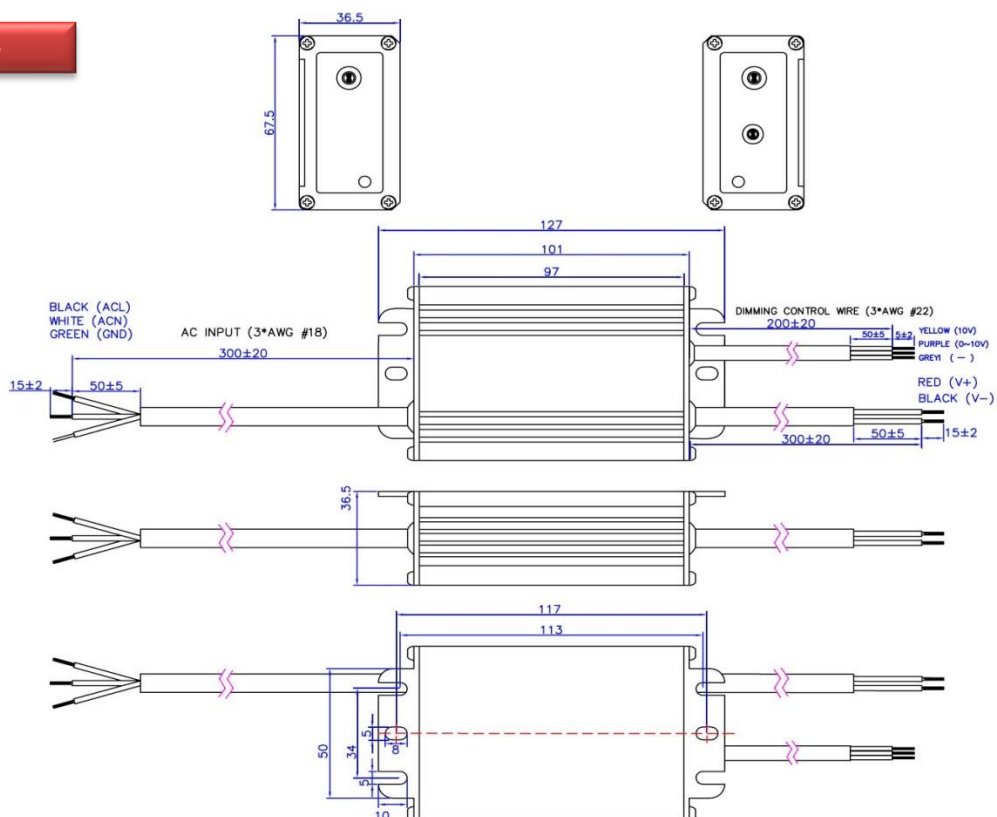
1. All specifications are typical at 25°C unless otherwise stated.
2. The "Efficiency" & "PF" values are measured at full load, after the unit is thermally stabilized.
3. The "Ripple & Noise" values are measured by 20MHz bandwidth oscilloscope and the output paralleled with a 0.1uF ceramic capacitor and a 10uF electrolytic capacitor.

## Mechanical Specifications

### Standard Narrow Case

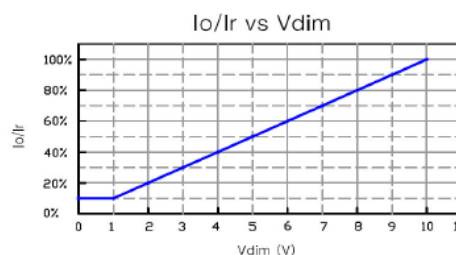
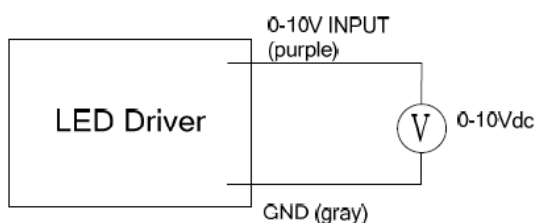


### Special Wide Case

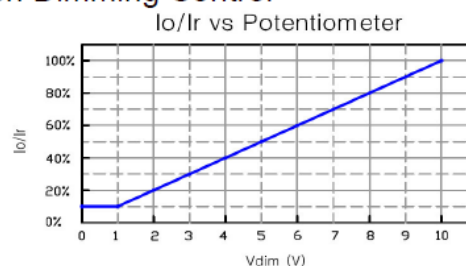
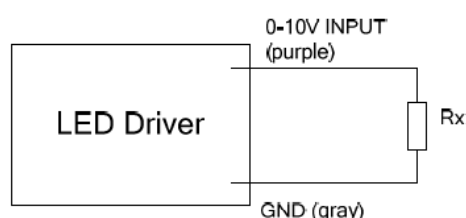




## Dimming



Mode 1: 0-10Vdc Input on Dimming Control



Mode 2: External Resistor on Dimming Control

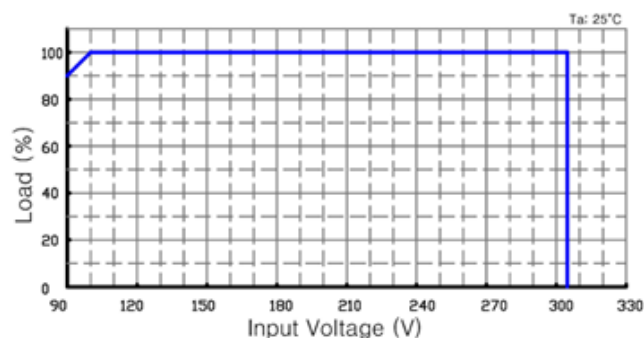
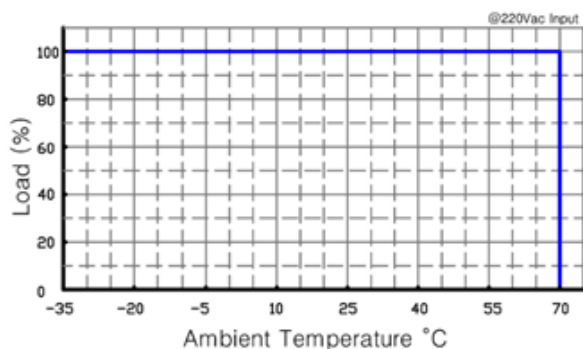
| Parameter                  | Values    | Conditions    |
|----------------------------|-----------|---------------|
| Absolute Max. Voltage      | 0 ~ 12 V  | Normal 10~11V |
| 0-10V Input Source Current | 0 ~ 10 mA |               |

### NOTE:

- 1.If the dimming function is not used, short 10V output pin (yellow) and 0-10V input pin (purple).
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.
4. The dimming signal is allowed to be less than 1V, when it is 0-1V, the output current will maintain about 10% Ir, however, the connected LEDs may flicker. Keeping dimming voltage greater than 1V in application is strongly recommended.

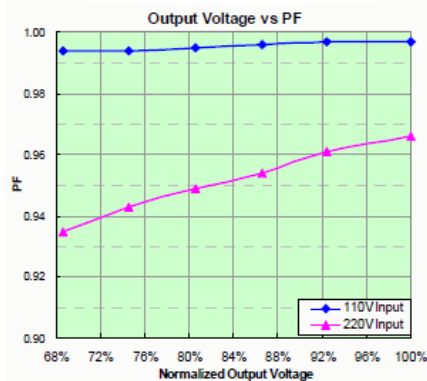


## Derating Curves

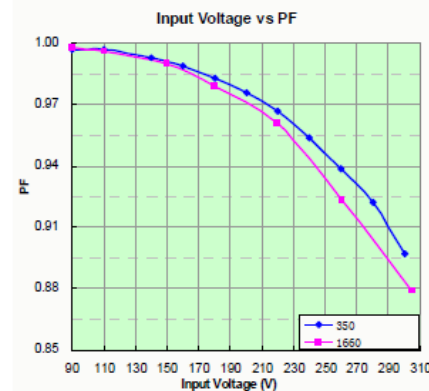
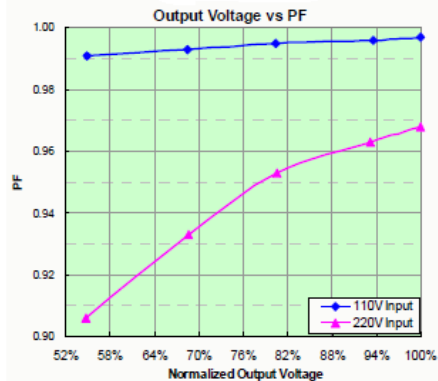


## Power Factor

LSWC-040S035ST

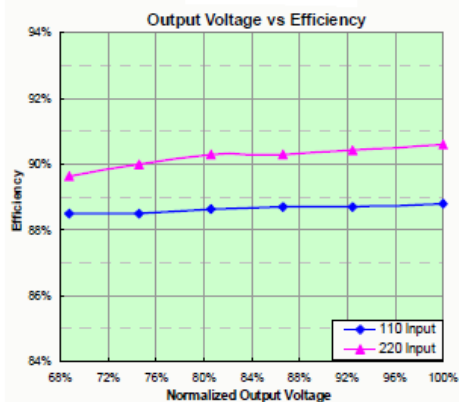


LSWC-040S160ST

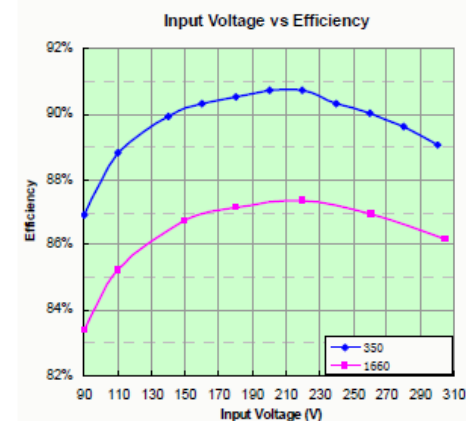
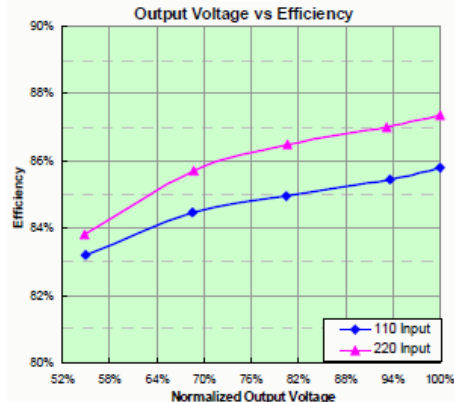


## Efficiency

LSWC-040S035ST



LSWC-040S160ST



## PART NUMBER BUILDER

LSWCD040S035ST-x

L = LED Driver, S = S Series

W = Wide Input Voltage 90~305 Vac

C = Constant Current

D = Dimming

x = W for Wide Case or Blank

T = Class I Input (3 Wire)

S = Metal Case

Rated Current, 035 350mA

S = Single Output

Output Power (Watts)

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AUTEC IS NOT RESPONSIBLE FOR ISSUES ARISING FROM ERRORS OR OMMISIONS

