S21 LED Netzteil

ALL1082

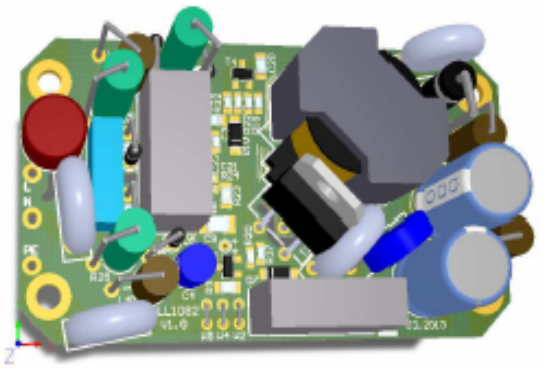
SYNERGY 21

Beschreibung und Auf-/Einbauanleitung ALL1082

ALL1082 - Primary dimmable high efficiency LED constant current power supply

General information

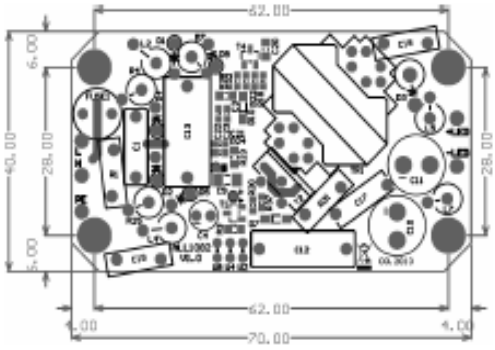
The ALL1082 power supply represents an isolated primary dimmable high efficiency LED driver for use in medium power LED lighting products like compact floodlights.



Operating from AC supplies of 207V to 253V (e.g. European line voltage), the ALL1082 is capable of driving LED COB arrays in range 8V to 20V. The typical efficiency is up to 86%. With respect of the power supply efficiency, the primary power consumption can configured from 8W up to 22W (refer to chapter configuration).

Primary dimming is performed by applying a phase-cut line voltage to the power supply input. The power supply is able to modulate the LED power directly. For this reason, the inrush-current has been minimized to <300mA, enabling to switch on many lamps with this power supply together at the same time. To achieve smooth phase-cut dimming with the most dimmers, the power factor reaches up to 98%.

The ALL1082 includes fault protection modes for LED short and open, overtemperature (with active power derating), overcurrent and overvoltage errors. It features an internally fixed OVP value of 21-26V (depends on configured power) which protects the device in the event of a failure in the LED array.



To reach higher output power, more power supply outputs can be connected together. This allows to build up (redundant) power supply clusters with up to six same power supplies.

With extremely low EMI interferences (refer to EMI section) meets the ALL1082 the EMC regulatories EN55015/55022 Class B and withstand surge levels >1kV, burst levels >2.5kV and direct ESD discharge against earthed metal case up to 22kV (MachineModel). The primary to secondary insulation test voltage is 2500Vac/10sec.

For using the ALL1082 this power supply must be mounted in an earthed metal case or in other isolated housing and the correct lamp power level must be selected.

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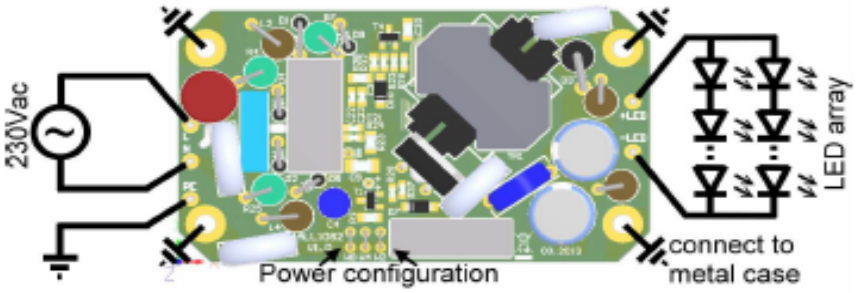
Connecting diagram:



Configuration:

The original delivered ALL1082 supplies about 21W to the LED (need about 24W on the line input). To configure the ALL1082 power level, the wire-bridges "W2", "W4", "W8" can be used (cut for opening). For selecting the right power, the following table should be use:

Powertable	Bridge "W2"	Bridge "W4"	Bridge "W8"	LED-Power	Line-in power
22W	closed	closed	closed	20W	23W
20W	opened	closed	closed	18W	21W
18W	closed	opened	closed	16W	19W
16W	opened	opened	closed	14W	16.5W
14W	closed	closed	opened	12W	14W
12W	opened	closed	opened	10W	12W
10W	closed	opened	opened	8.3W	10W
8W	opened	opened	opened	6.4W	8W

Technical Data:

- Input voltage (normal mode): 207 to 253Vac (47 to 63Hz)
- Accepted input voltage: 180 to 270Vac (current maybe vary, refer to diagrams)
- Primary dimmable via phase-cut dimmers (leading/trailing edge dimmers)
- Inrush current: <300mA
- Output power range: 6.4 to 20W (±10%)
- Constant power behaviour (CP)
- Output voltage range: 8 to 20V (refer to diagrams)
- Output OVP shutdown: 21 to 26V
- Startup time: typical 250ms
- Ramp-up time to full light: typical 500ms
- Emergency light function: Input >30Vdc, >24Vac (at 10% nominal power)
- Temperature range: -25 to 65°C
- Overall efficiency: 78 to 86%
- High power factor: 82 to 98% (refer to diagrams)
- Temperature derating: Power reducing at 60°C PCB temperature
- Thermal shutdown: at 80°C PCB temperature to <20% of nominal power
- Outputs connectable in series/parallel to reach higher power/voltage

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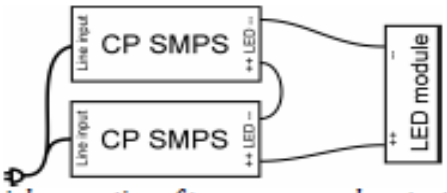
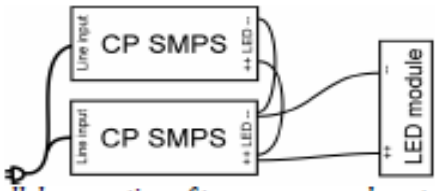
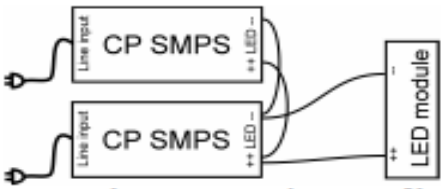
Stacking of CP-mode power supplys:



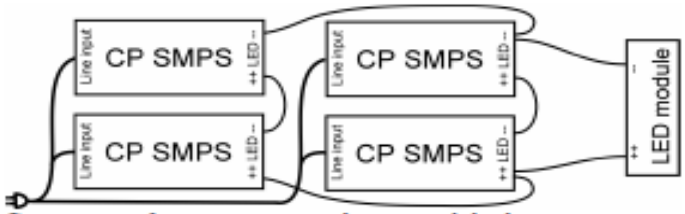
Serial connecting of two power supply outputs



Parallel connecting of two power supply outputs



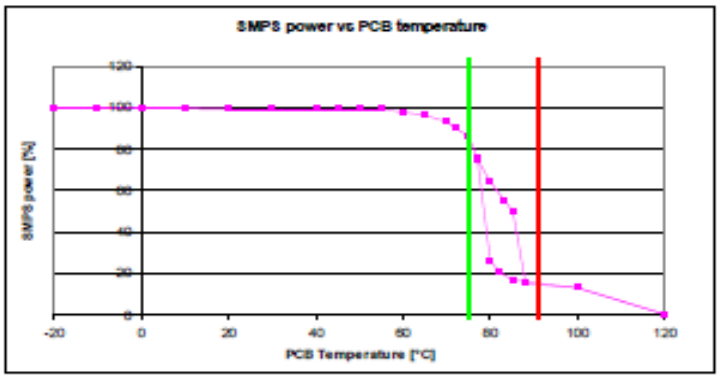
Redundant parallel connecting of two power supply outputs. If one SMPS (primary path or transformer) or line voltage fail, the LED remains lit at the half of its power.



Connecting of more power supplys to reach higher output power

Technical diagrams:

Temperature behaviour (typical):



Thermal shutdown at 85°C, auto recover at typical 75°C.

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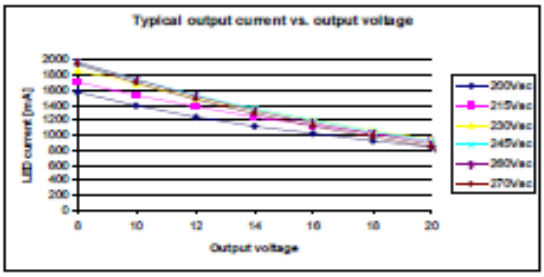
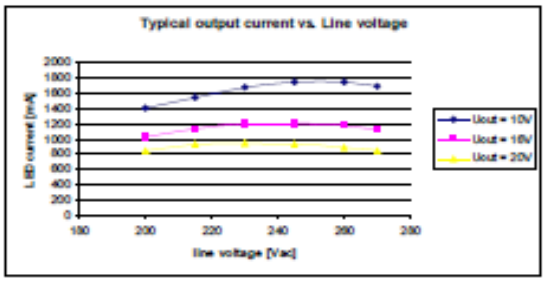
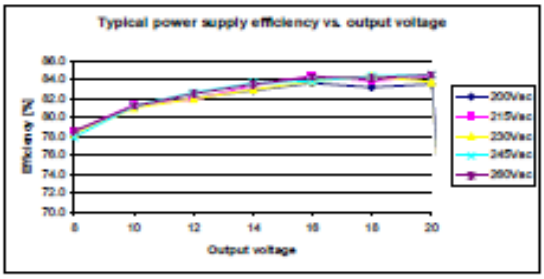
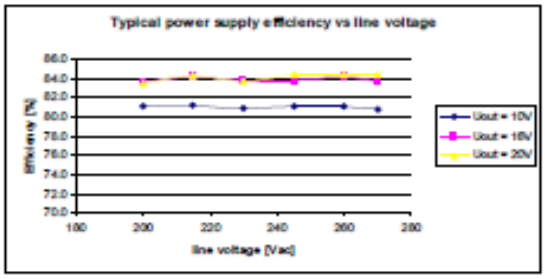
Technical diagrams:

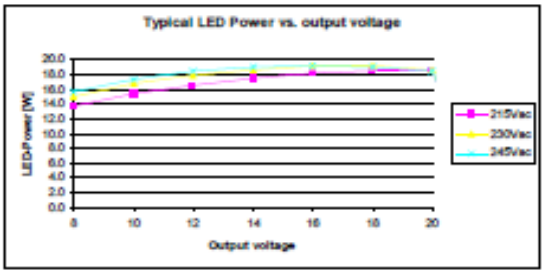
Configuration: 20W selected

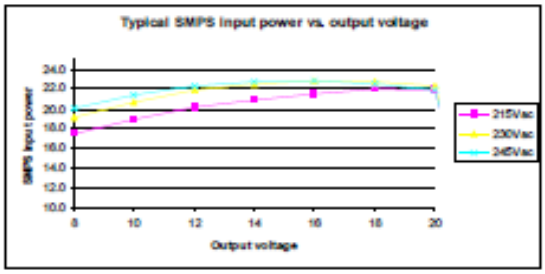


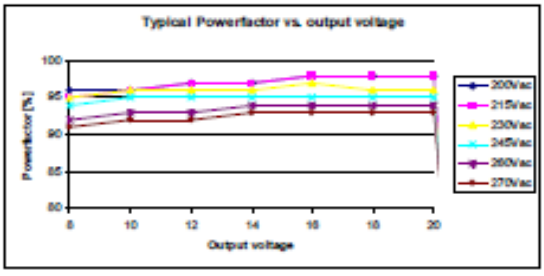


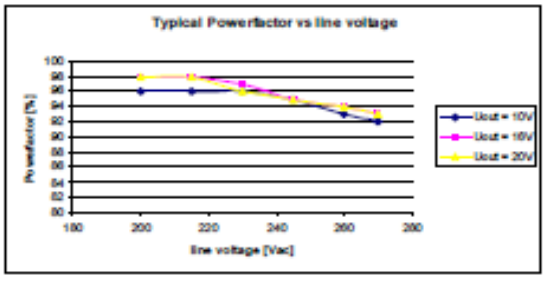












As seen in the diagrams, the optimal using condition for the 20W configuration is at the LED voltage range 12...20V.

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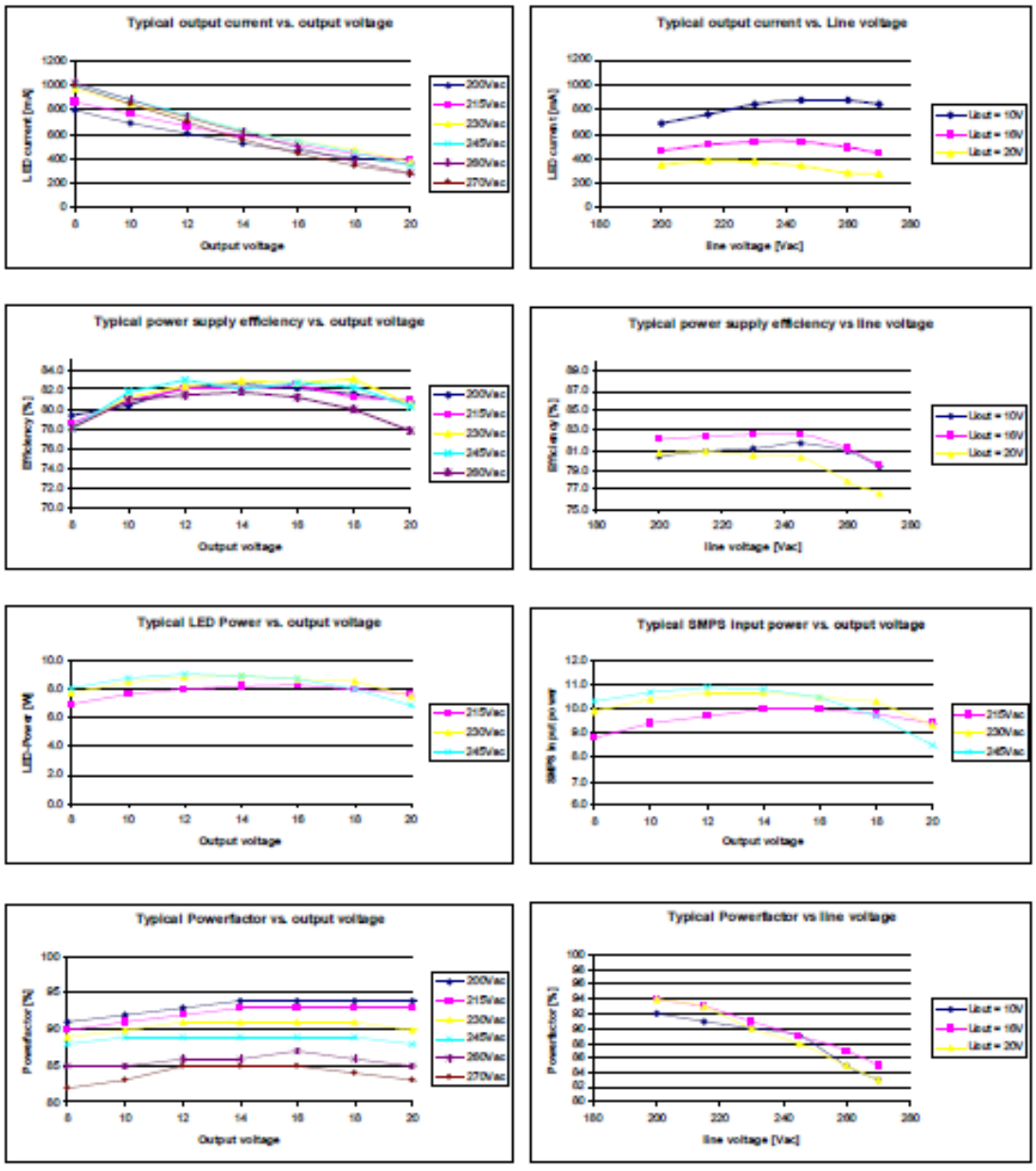
Configuration: 10W selected



As seen in the diagrams, the optimal using condition for the 10W configuration is at the LED voltage range 10...18V.

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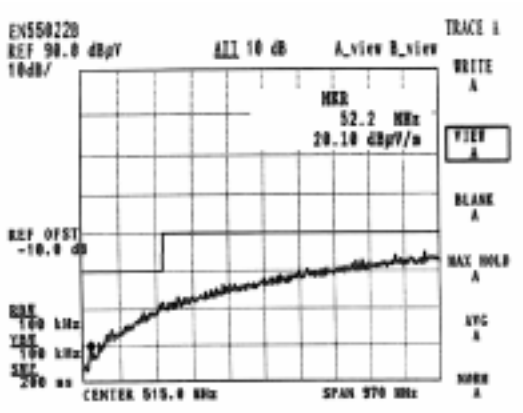
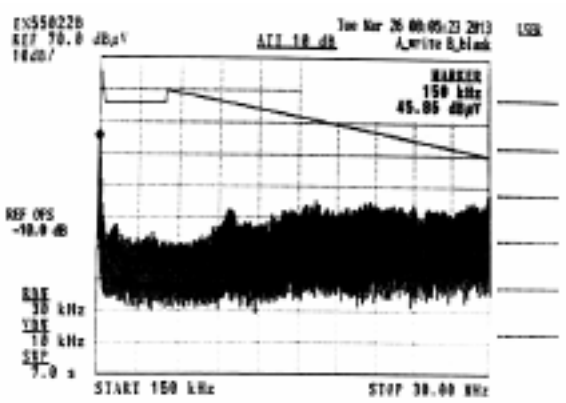
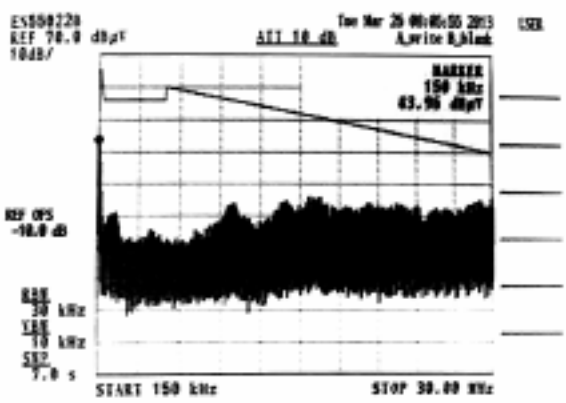
EMI pre-compliance measurements:



Radiated emissions measurement at 16W (max hold)





Conducted emissions measurement at 10W / 20W

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