

# POWER

## LCM300

310 Watt Bulk Front End

### Data Sheet

**Total Power:** 310 W  
**# of Outputs:** Single  
**Outputs:** 12 to 60 V  
 Optional 5.0 V standby

### SPECIAL FEATURES

- 310 W output power (350 W at 45 °C for 24 V and 36 V models)
- Low cost
- 1.61" x 4.0" x 7.0"
- 7.1 Watts per cubic inch
- Industrial/Medical safety
- 40 °C to 70 °C with derating
- Optional 5 V @ 2 A housekeeping
- High efficiency: 91% @ 230 Vac
- Variable speed "Smart Fans"
- DSP controlled
- PMBus compliant
- Conformal coat option
- Wide adjustment range
- Margin programming
- OR-ing FET

### COMPLIANCE

- EMI Class B
- EN61000 Immunity
- RoHS 2
- PMBUS

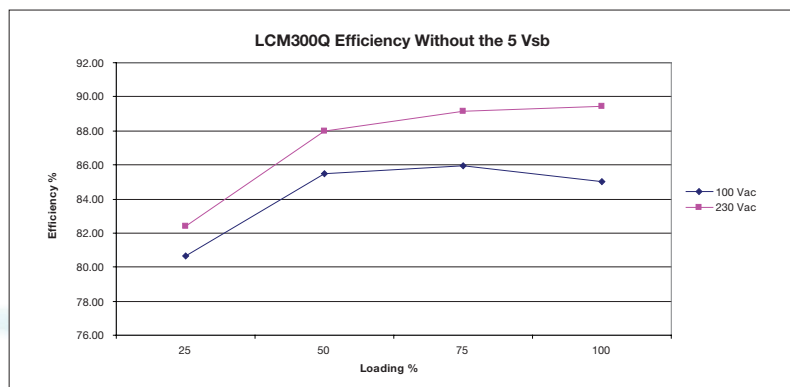
### SAFETY

- UL 60950-1  
508/1598/1433  
60601-1 Ed 3
- CSA 60950-1
- VDE 60950-1  
60601
- China CCC
- CB Scheme Report/Cert



### Electrical Specifications

Input	
Input range	90 - 264 Vac (Operating) 115/230 Vac (Nominal) TERMINAL BLOCK
Frequency	47 - 63 Hz, Nominal 50/60
Input fusing	Internal 8 A fuses, both lines fused
Inrush current	< 20 A peak, cold start at 25 °C
Power factor	0.98 typical, meets EN61000-3-2
Harmonics	Meets IEC 1000-3-2 requirements
Input current	5 Arms max input current, at 90 Vac
Hold up time	20 ms minimum for main O/P, at full rated load
Efficiency	> 91% typical at full load / 230 Vac nominal
Leakage current	< 300 µA @ 240 Vac
ON/OFF power switch	N/A
Power line transient	MOV directly after the fuse
Isolation	Isolation: PRI-Chassis 2500 Vdc Basic PRI-SEC 4000 Vac Reinforced 2xMOPP SEC-Chassis 500 Vdc



## Electrical Specifications

Output		
Output rating	See table 1	90 - 264 Vac
Set point	±0.5%	90 - 264 Vac
Total regulation range	Main output ±2% 5 Vsb ±1%	Combined line/load/transient when measured at output terminal
Rated load	310 W (360 W for current Q and U variants)	Derate linear to 50% from 50 °C to 70 °C
Minimum load	Main output @ 0.0 A 5 Vsb @ 0.0 A	No loss of regulation
Output noise (PARD)	1% max p-p 100 mV max p-p	Main output 5 Vsb output Measured with a 0.1 µF Ceramic and 10 µF Tantalum Capacitor on any output, 20 MHz
Output voltage overshoot		No overshoot/undershoot outside the regulation band during on or off cycle
Transient response	< 300 µSec	50% load step @ 1 A/µs Step load valid between 10% to 100% of output rating Recovery time to within 1% of set point at onset of transient
Max units in parallel		Up to 10
Short circuit protection	Protected, no damage to occur	Bounce mode
Remote sense		Compensation up to 500 mV
Output isolation		Standard per safety requirements
Forced load sharing	To within 10% of all shared outputs	Analog sharing control
Overload protection (OCP)	105% to 125% 120% to 170%	Main output 5 Vsb output
Overvoltage protection (OVP)	125% to 145% 110% to 125%	12 V output 5 Vsb output

## Environmental Specifications

<b>Operating temperature</b>	-40 °C to +70 °C, linear derating to 50% from 50 °C to 70 °C
<b>Storage temperature</b>	-40 °C to +85 °C
<b>Humidity</b>	10 to 90%, non-condensing. Operating. Conformal coat option available.
<b>Fan noise</b>	< 45 dBA, 80% load at 40 °C; Fan Off when unit is inhibited
<b>Altitude</b>	Operating - 16,405 feet (5000m) Storage - 30,000 feet
<b>Shock</b>	MIL-STD-810F 516.5, Procedure I, VI. Storage
<b>Vibration</b>	MIL-STD-810F 514.5, Cat. 4, 10. Storage

## Ordering Information

Model Number*	Output	Nominal Output Voltage Set Point	Set Point Tolerance	Adjustment Range	Current		Output Ripple P/P (0-50 °C)	Max Continuous Power	Combined Line/Load Regulation
					Min	Max			
LCM300L	12 V	12 V	±0.5%	9.6 - 14.4 V	0 A	25.0 A	120 mV	310 W	2%
LCM300N	15 V	15 V	±0.5%	14.25 - 19.5 V	0 A	20.0 A	150 mV	310 W	2%
LCM300Q	24 V	24 V	±0.5%	19.2 - 28.8 V	0 A	12.5 A*	240 mV	310 W	2%
LCM300U	36 V	36 V	±0.5%	28.8 - 43.2 V	0 A	8.4 A*	360 mV	310 W	2%
LCM300W	50 V	48 V	±0.5%	43.0 - 60.0 V	0 A	6.3 A	480 mV	310 W	2%

\* 14.5 A rating on LCM300Q-T and 9.7 A on LCM300U-T when max temp does not exceed 45C (Total Power = 350 W)