ON Semiconductor®

Test Procedure for the NCL30073LED3GEVB Evaluation Board

Equipment Needed

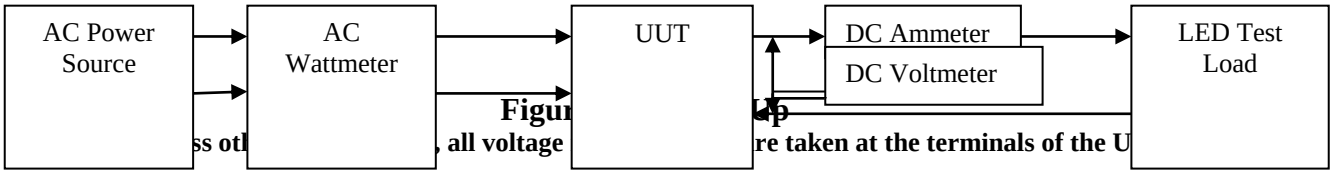
AC Source – 90 to 140 V ac 60 Hz Minimum 100 W capability
AC Wattmeter – 100 W Minimum, True RMS Input Voltage, Current, Power Factor, and THD 0.2% accuracy or better
DC Voltmeter – 300 V dc minimum 0.1% accuracy or better
DC Ammeter – 1 A dc minimum 0.1% accuracy or better
LED Load – 70 V – 80 V @ 110m A

Test Connections

1. Connect the LED Load to the red(+) and black(-) leads through the ammeter shown in Figure 7. Caution: Observe the correct polarity or the load may be damaged.

2. Connect the AC power to the input of the AC wattmeter shown in Figure 5. Connect the white leads to the output of the AC wattmeter

3. Connect the DC voltmeter as shown in Figure 5.



Figu **up**
ss otl , all voltage re taken at the terminals of the U

Functional Test Procedure

1. Set the LED Load for 75V output.
2. Set the input power to 120 V 60 Hz. Caution: Do not touch the ECA once it is energized because there are hazardous voltages present.

Regulation

120 V / Max Load

	Output Current	Output Power	Power Factor	THD
108V				
120V				
132V				

Efficiency = $\frac{Vout \times Iout}{Pin}$ **× 100%**

Test Data

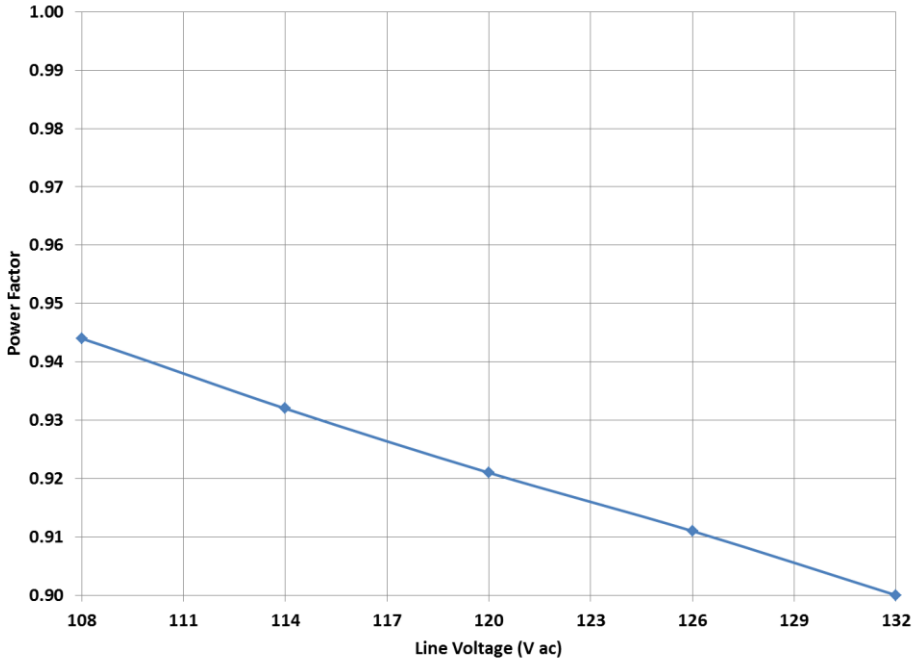


Figure 6. Power Factor over Line

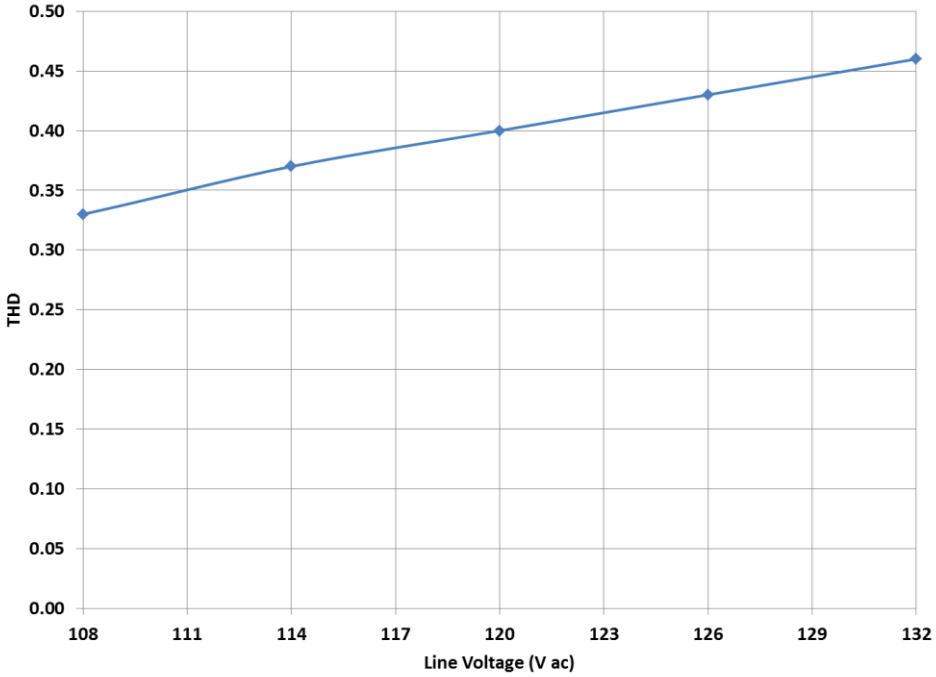


Figure 7. THD over Line

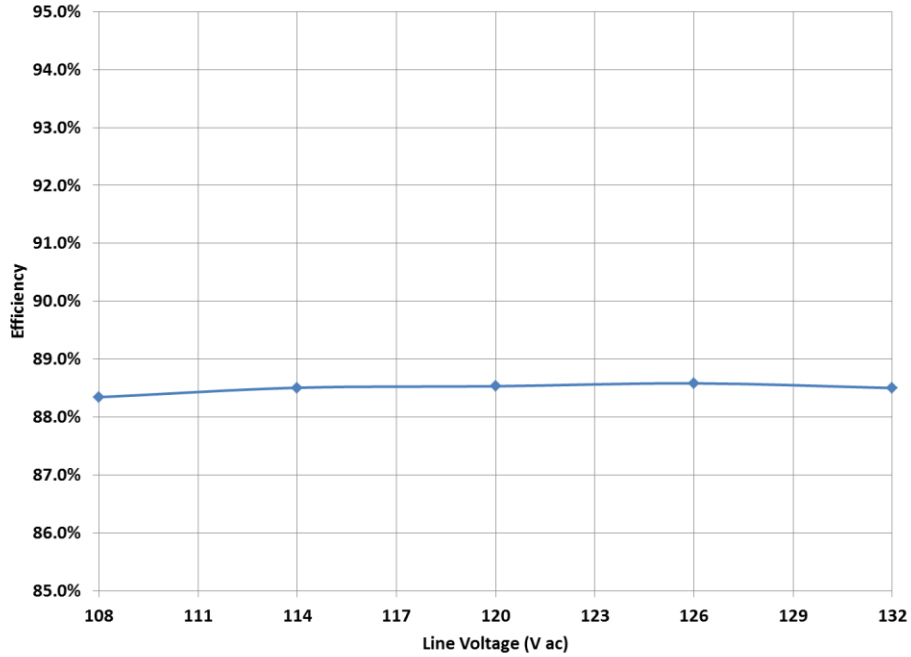


Figure 8. Efficiency

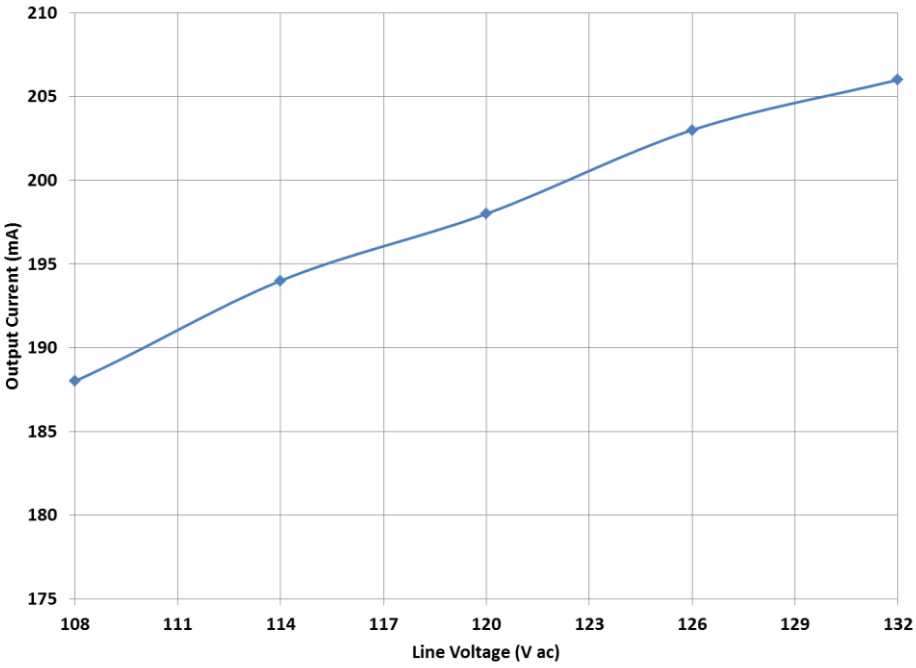


Figure 9. Regulation over Line

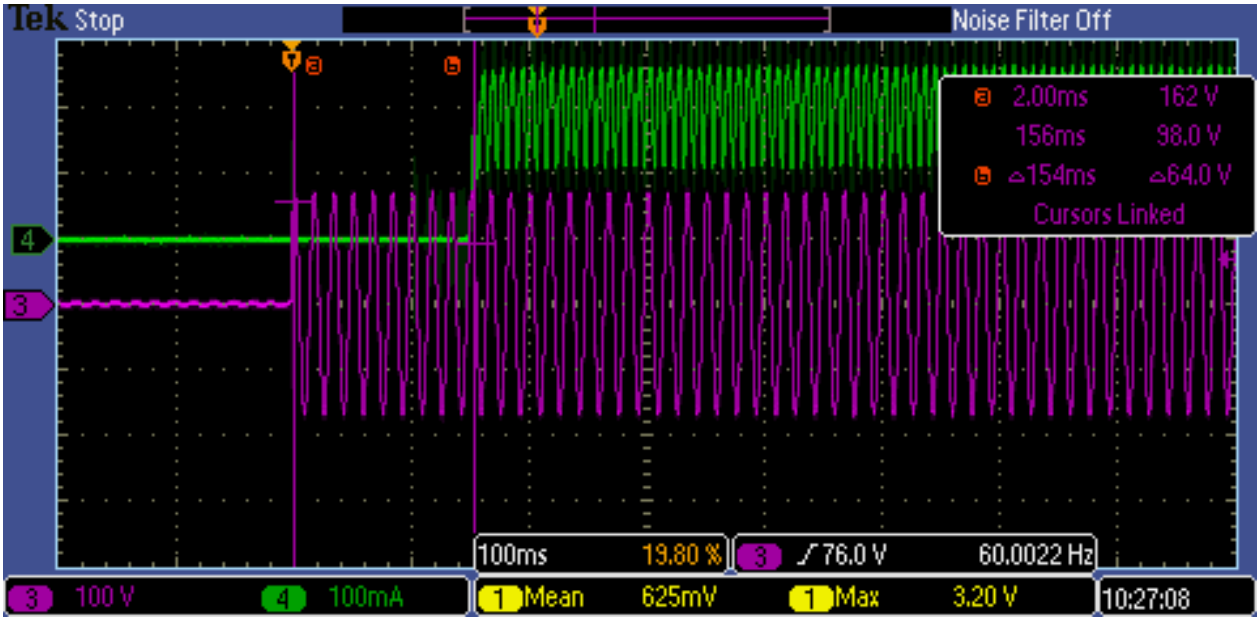


Figure 10. Start Up with AC Applied 120V

Figure 11. Output Ripple 75% Pk - Pk

Vin	Iout	Pin	Pout	PF	THD
100	181	14.84	13.08	0.959	0.28
108	188	15.53	13.72	0.944	0.33
114	194	16	14.161	0.932	0.37
120	198	16.412	14.53	0.921	0.4
126	203	16.73	14.82	0.911	0.43
132	206	17.08	15.116	0.9	0.46

Vin			Vin	
100	0.881402		100	0.959
108	0.883451		108	0.944
114	0.885063		114	0.932
120	0.885328		120	0.921
126	0.885834		126	0.911
132	0.885012		132	0.9