ON Semiconductor®

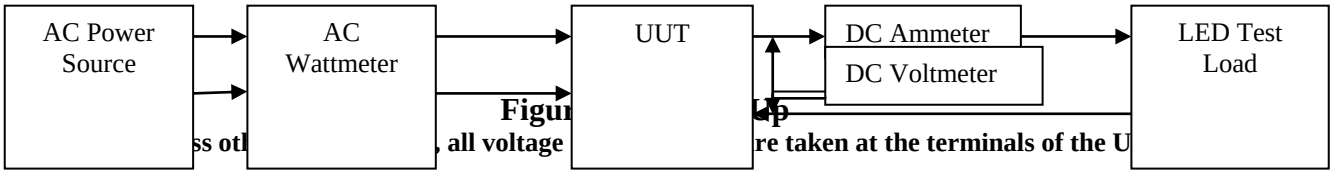
Test Procedure for the NCL30073LED2GEVB Evaluation Board

Equipment Needed

AC Source – 180 to 270 V ac 50/60 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 – 30 V – 36 V @ 415m 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 36V output.
2. Set the input power to 230 V 50 Hz. Caution: Do not touch the ECA once it is energized because there are hazardous voltages present.

Regulation

230 V / Max Load

	Output Current	Output Power	Power Factor	THD
207V				
230V				
253V				

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

Test Data

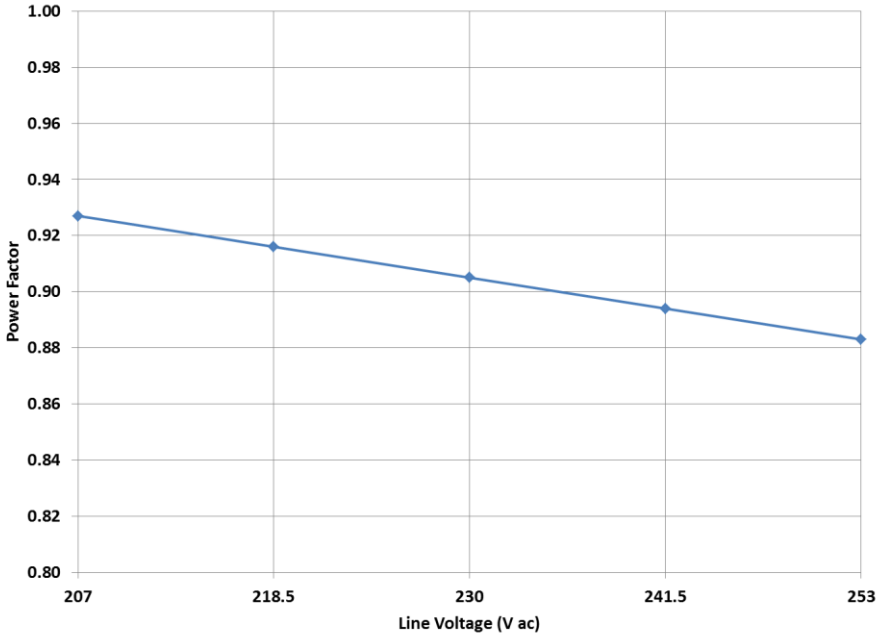


Figure 6. Power Factor over Line

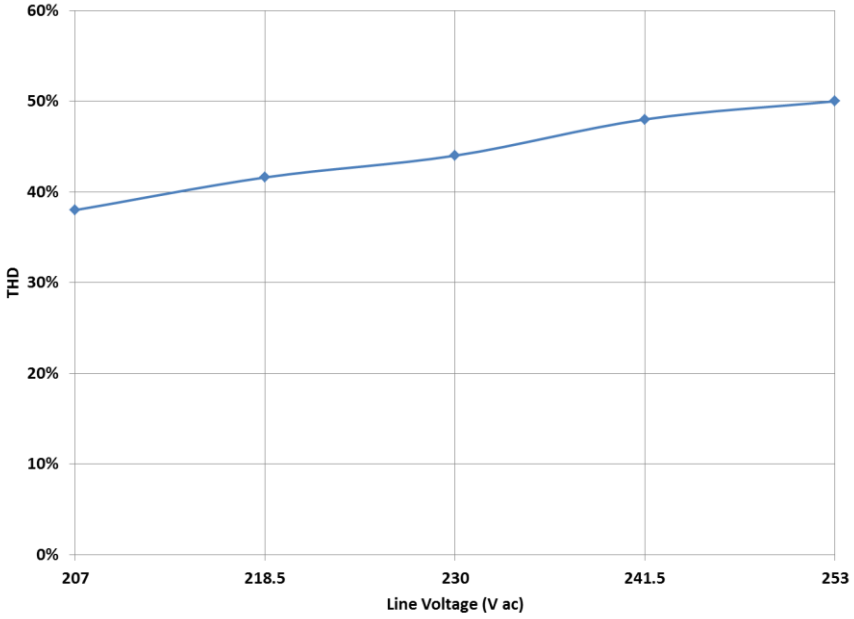


Figure 7. THD over Line

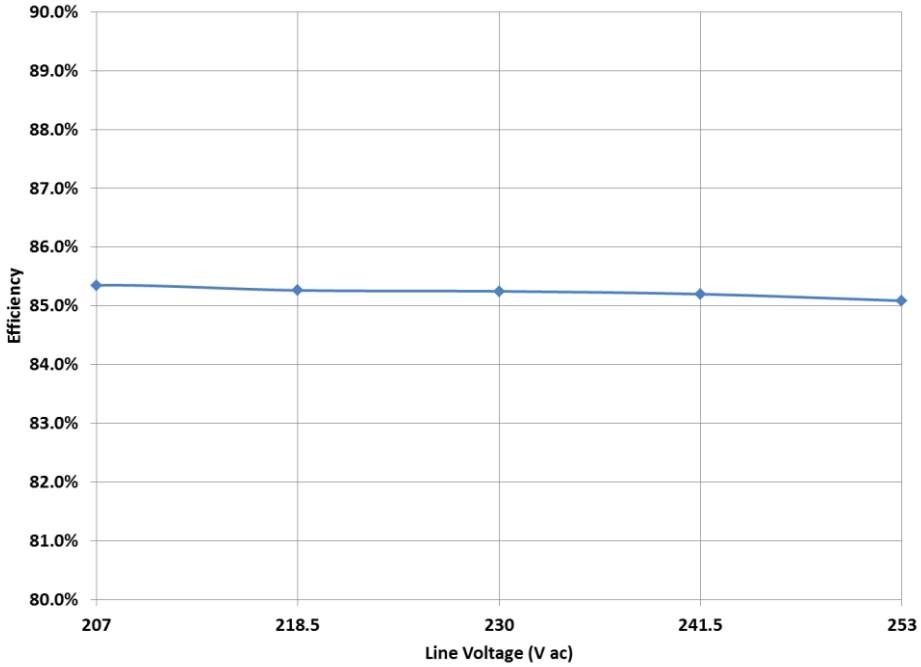


Figure 8. Efficiency

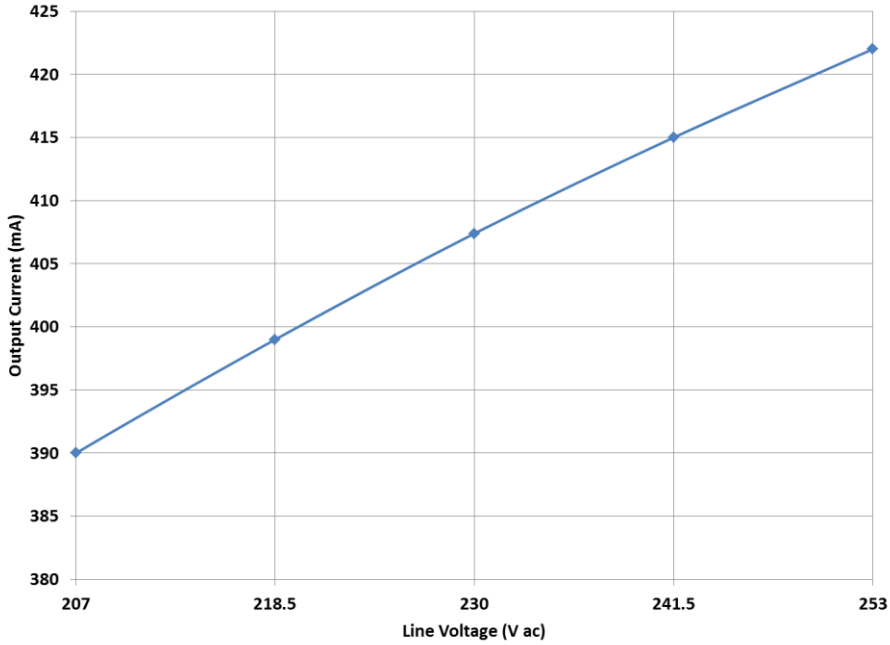


Figure 9. Regulation over Line

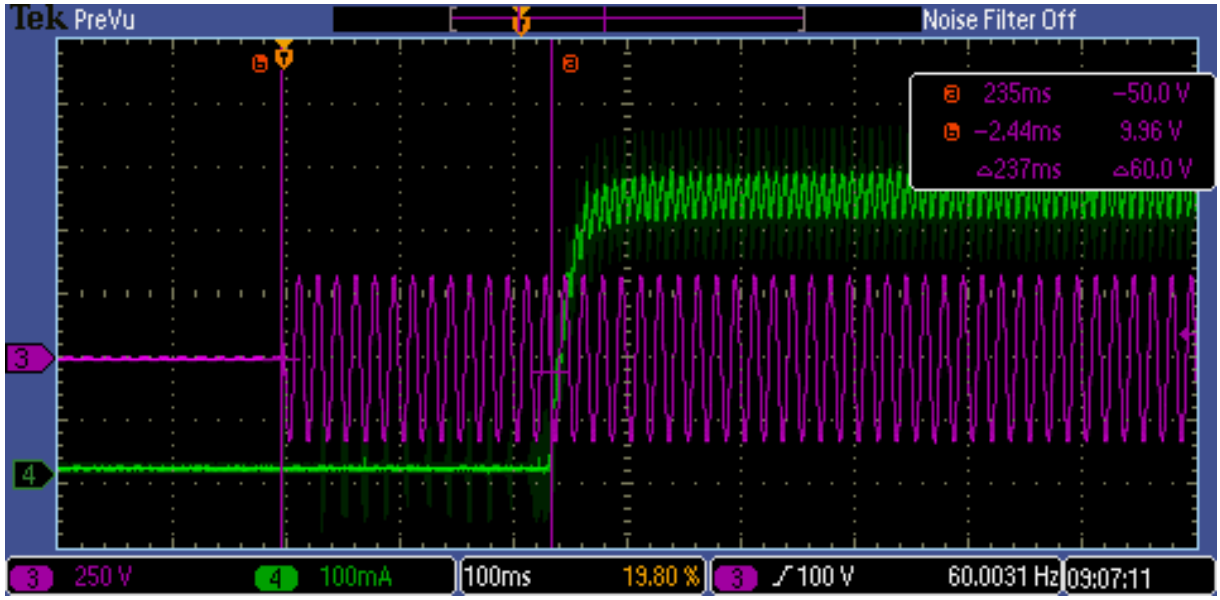


Figure 10. Start Up with AC Applied 230V

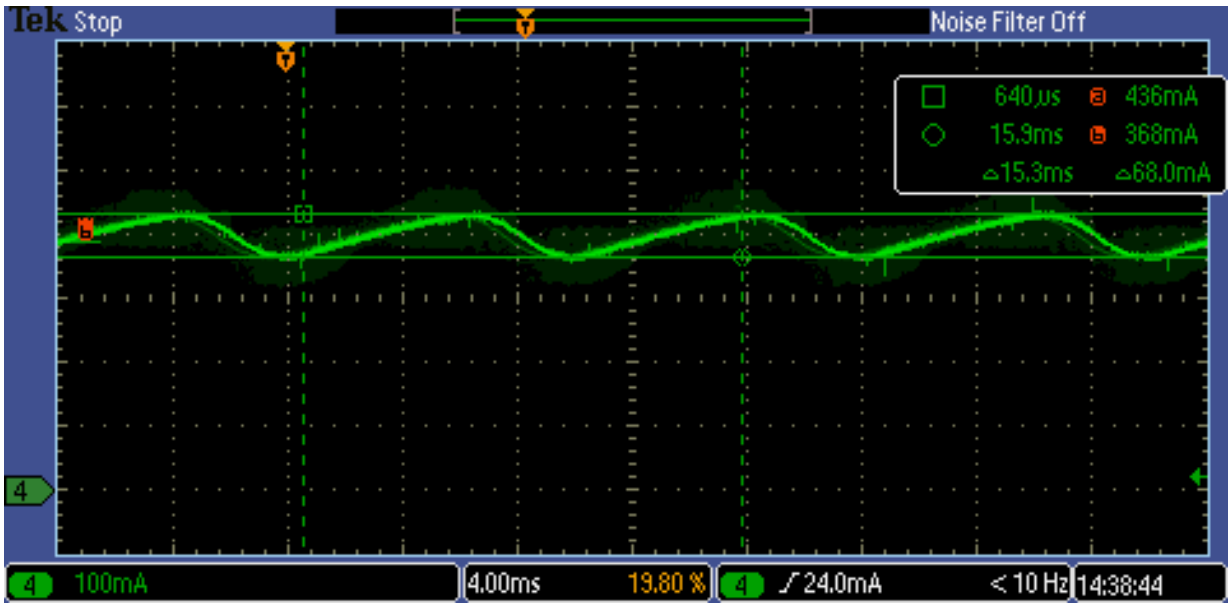


Figure 11. Output Ripple 17% Pk - Pk

Vin	Iout	Pin	Pout	PF	THD
200	376	15.396	13.143	0.956	0.29
207	391.5	16.03	13.724	0.941	0.34
218.5	401	16.476	14.111	0.93	0.38
230	410	16.87	14.46	0.912	0.41
241.5	417.8	17.239	14.769	0.907	0.44
253	425	17.567	15.045	0.896	0.47

Vin			Vin	
100	0.853663		100	0.956
108	0.856145		108	0.941
114	0.856458		114	0.93
120	0.857143		120	0.912
126	0.85672		126	0.907
132	0.856435		132	0.896