

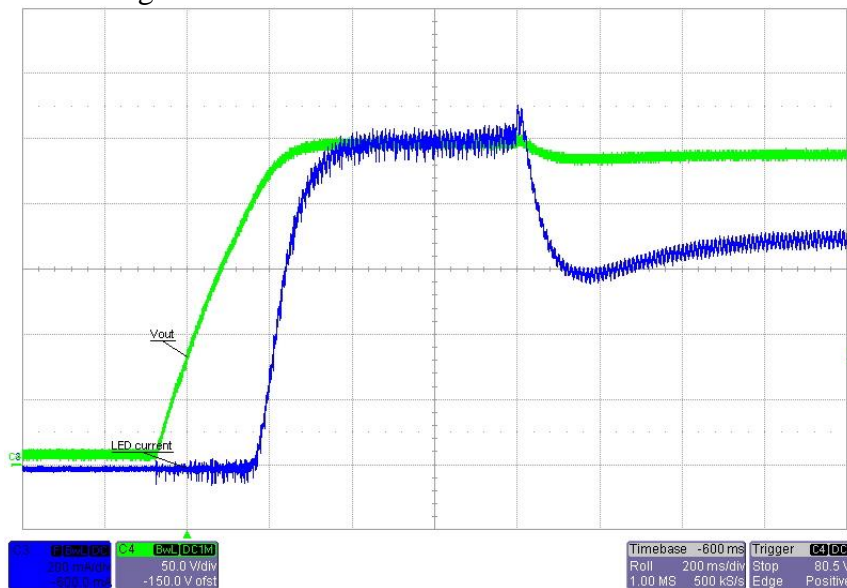
Load: 2 LED strings in parallel. Max. LED current each string: 0.35A

1 Startup

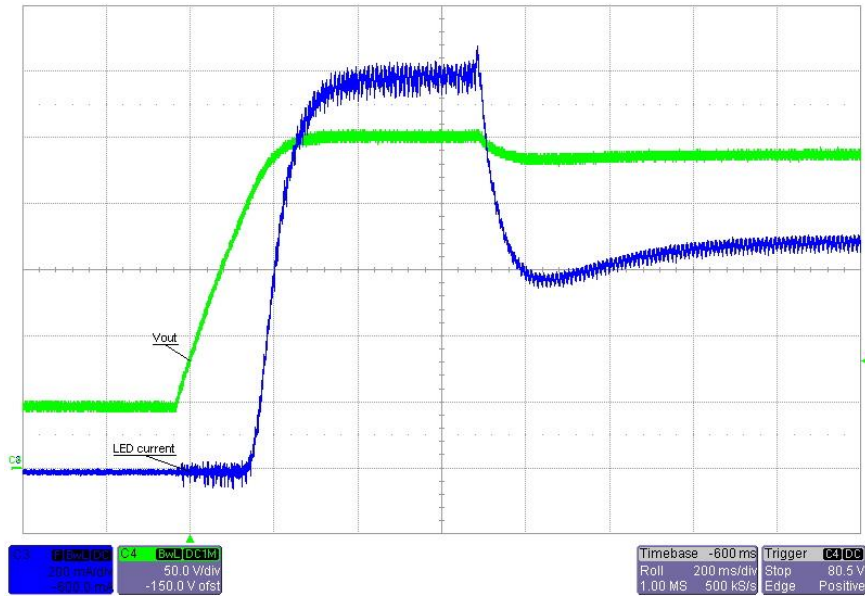
Input voltage = 176VAC

LED current = 0.7A

LED voltage = 233V



Input voltage = 264VAC
LED current = 0.7A
LED voltage = 232V

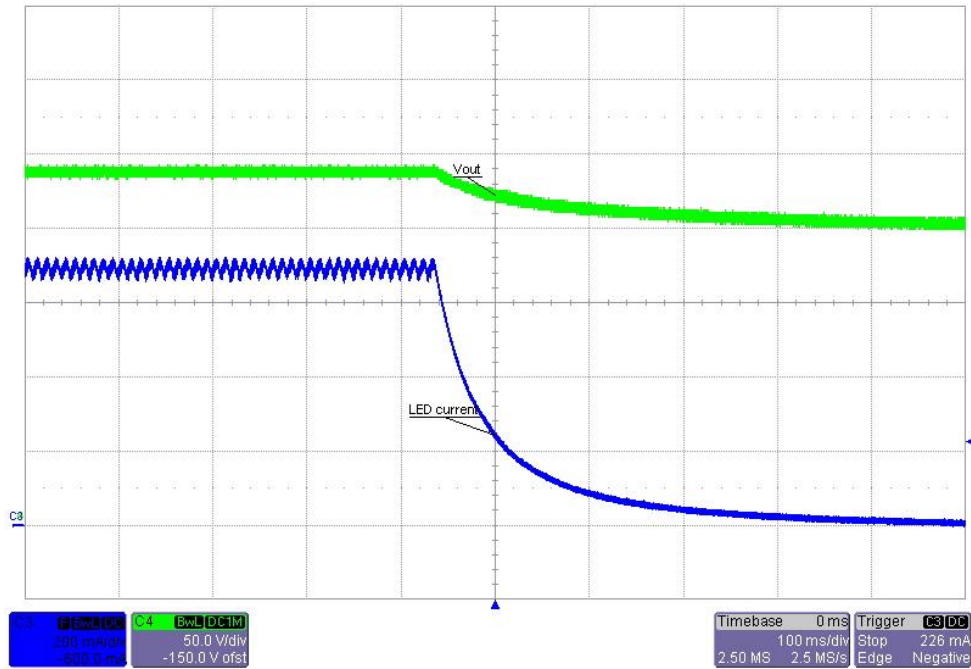


2 Shutdown

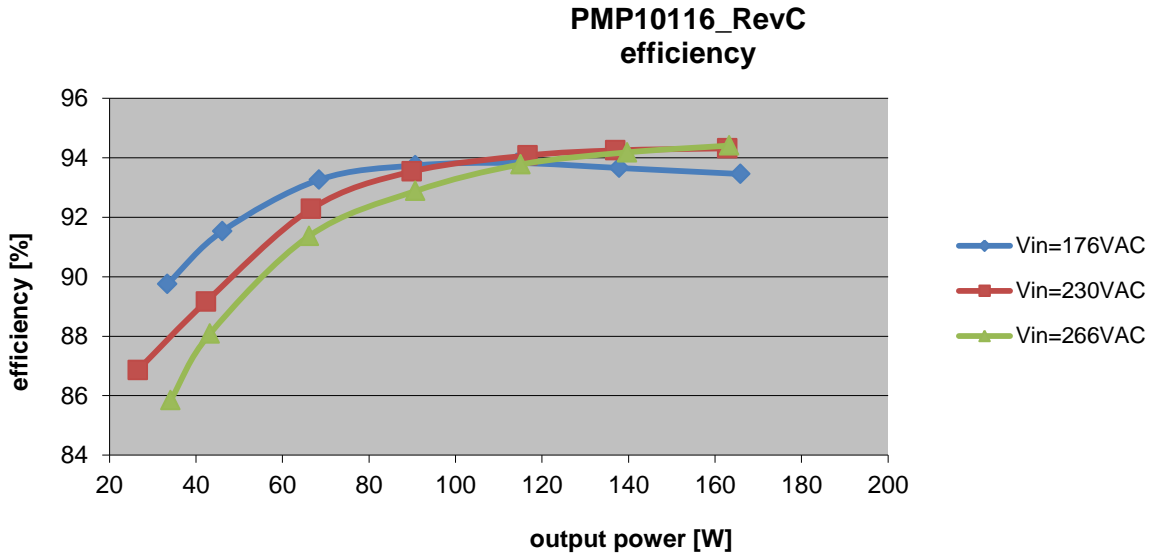
Input voltage = 230VAC

LED current = 0.7A

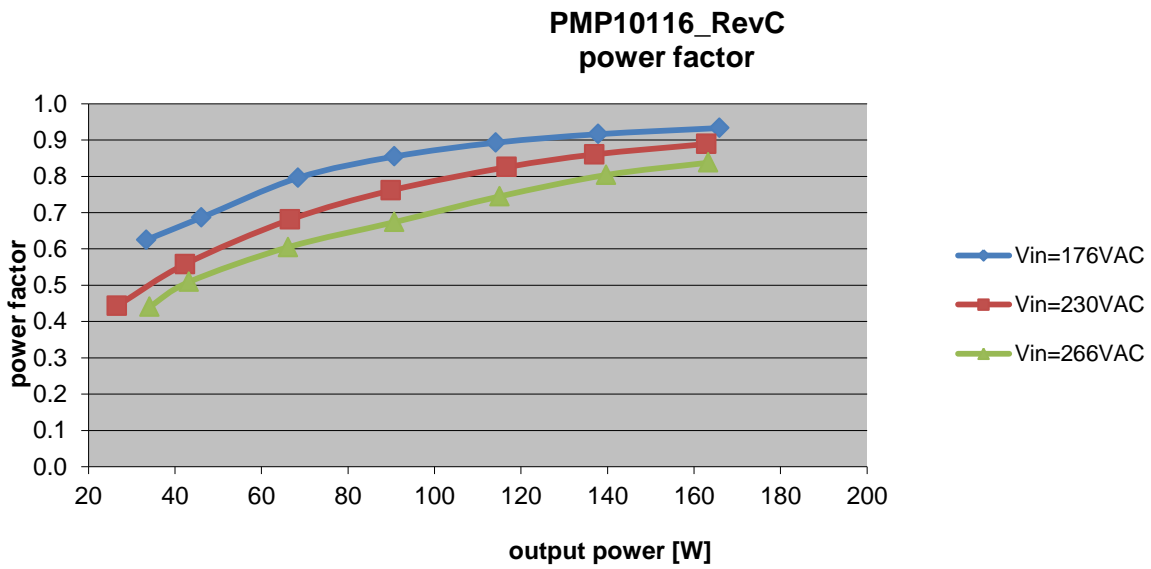
LED voltage = 234V



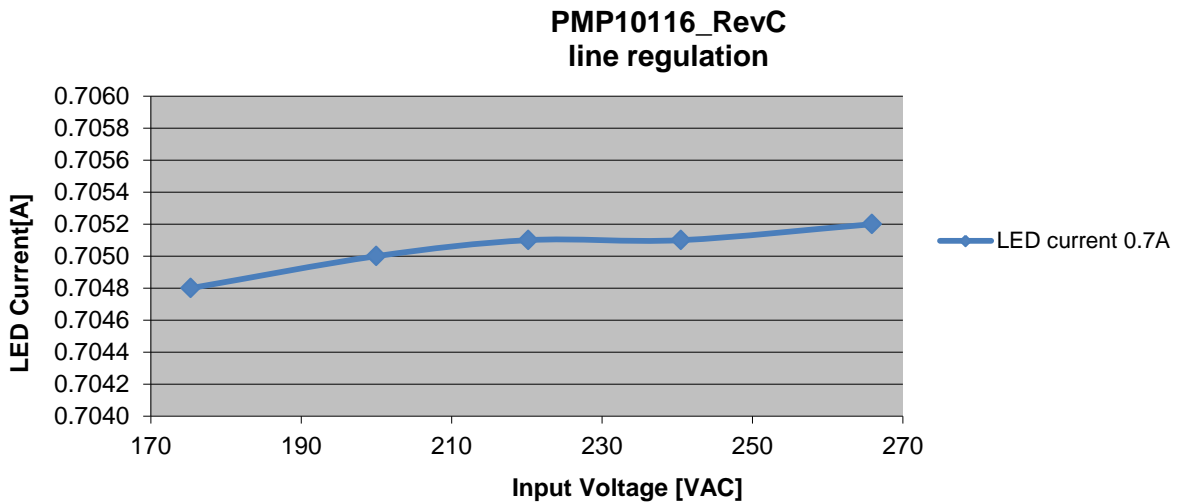
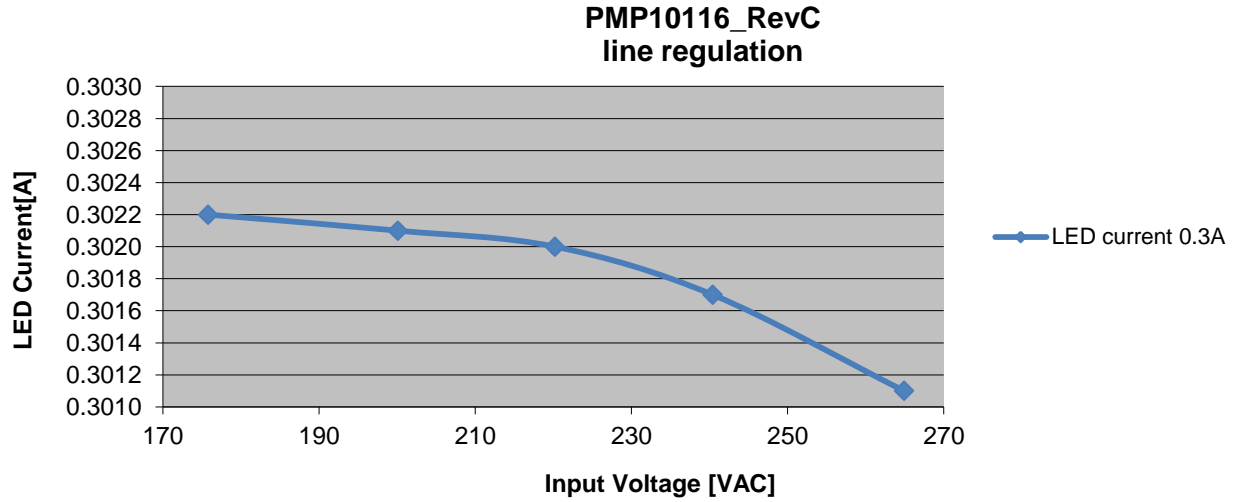
3 Efficiency



4 Power Factor



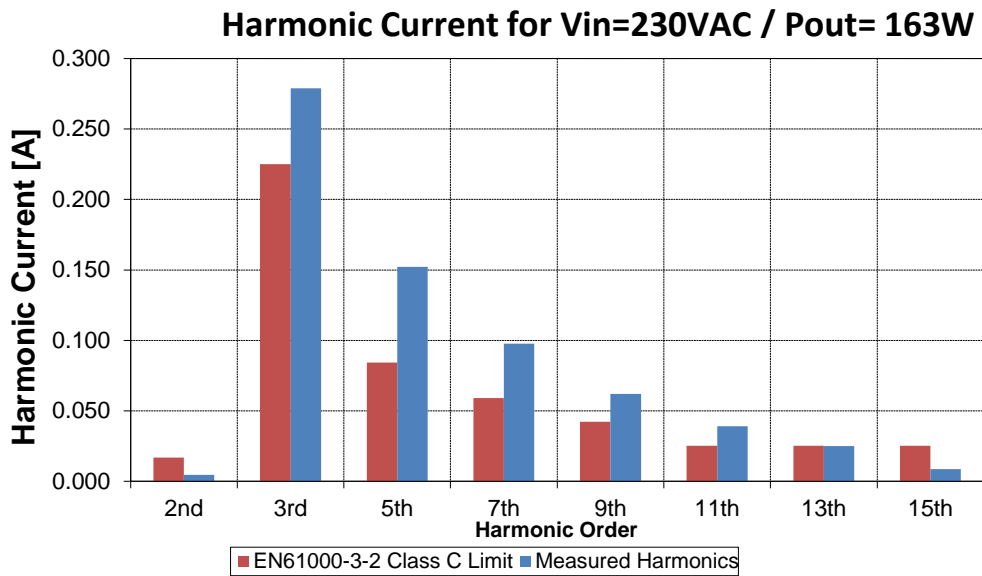
5 Line Regulation



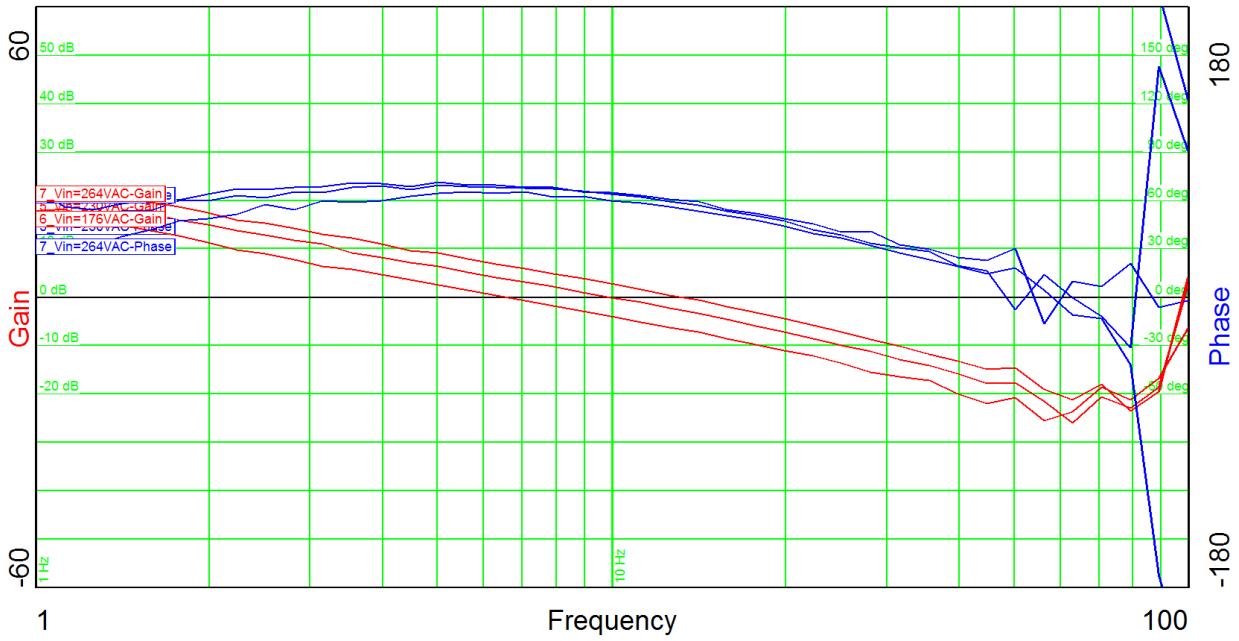
6 Harmonic Current

Input voltage = 230VAC

LED current = 0.7A



5 Control Loop Frequency Response



Input Voltage = 176VAC
 LED Current = 0.71A
 LED Voltage = 233V
 Phase margin = 69°
 Bandwidth = 7Hz

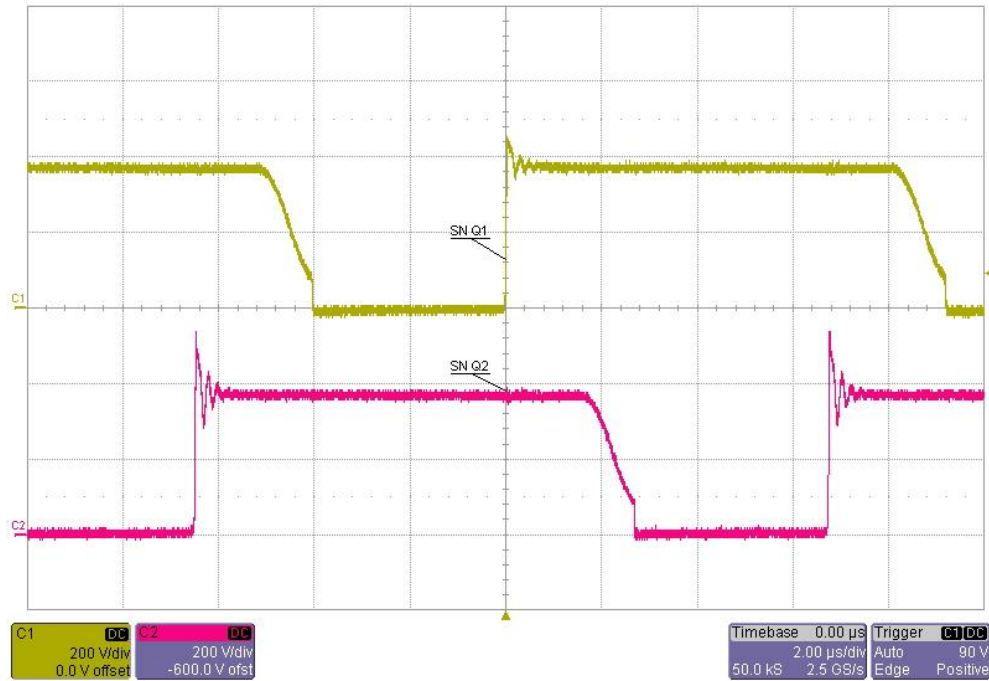
Input Voltage = 230VAC
 LED Current = 0.71A
 LED Voltage = 234V
 Phase margin = 74°
 Bandwidth = 10Hz

Input voltage = 264VAC
 LED Current = 0.71A
 LED Voltage = 232V
 Phase margin = 55°
 Bandwidth = 13Hz

6 Switch Node

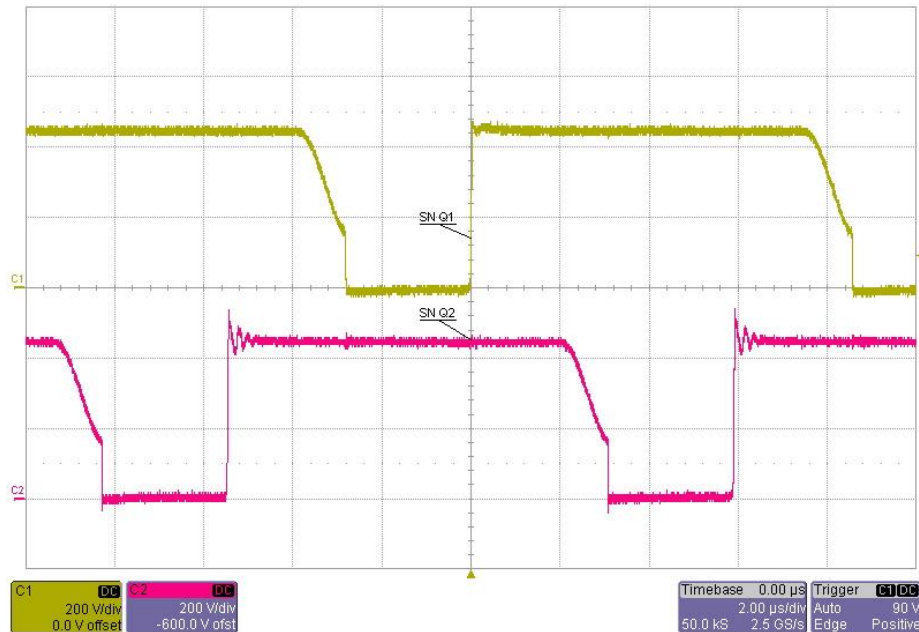
Input voltage = 248VDC

LED current = 0.7A



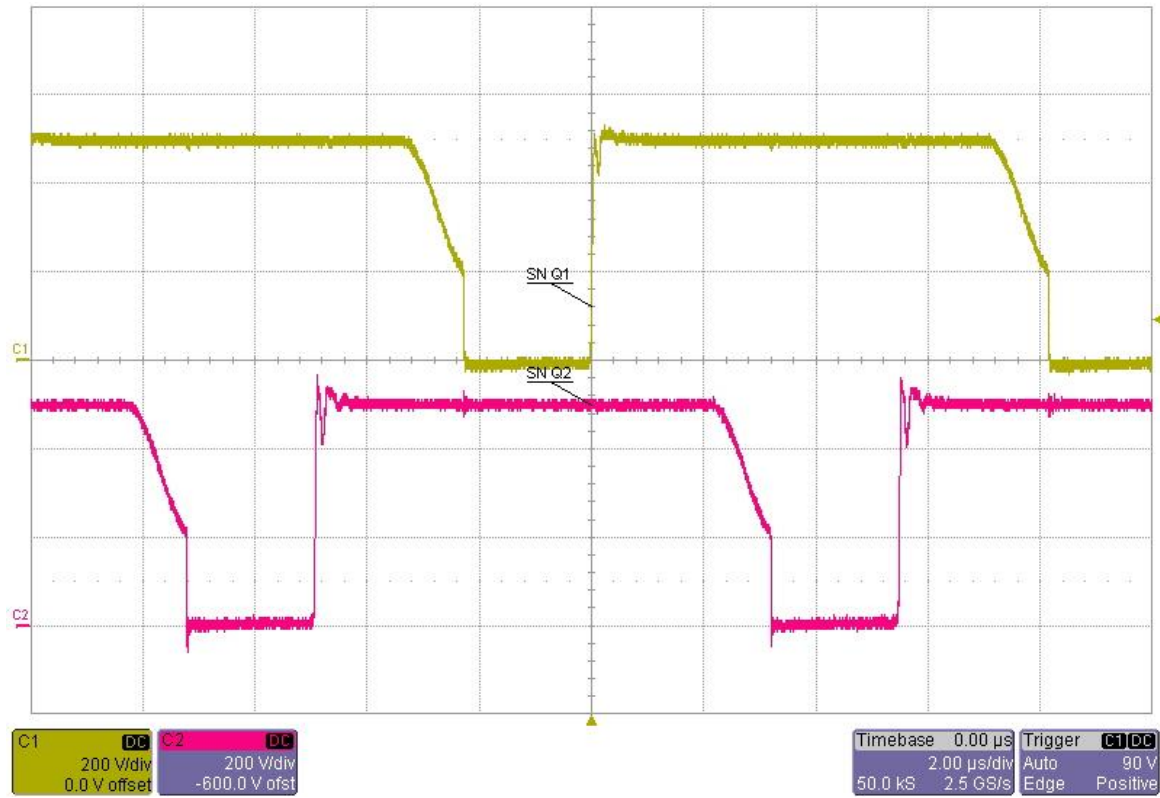
Input voltage = 248VDC

LED current = 0.7A



Input voltage = 374VDC

LED current = 0.7A

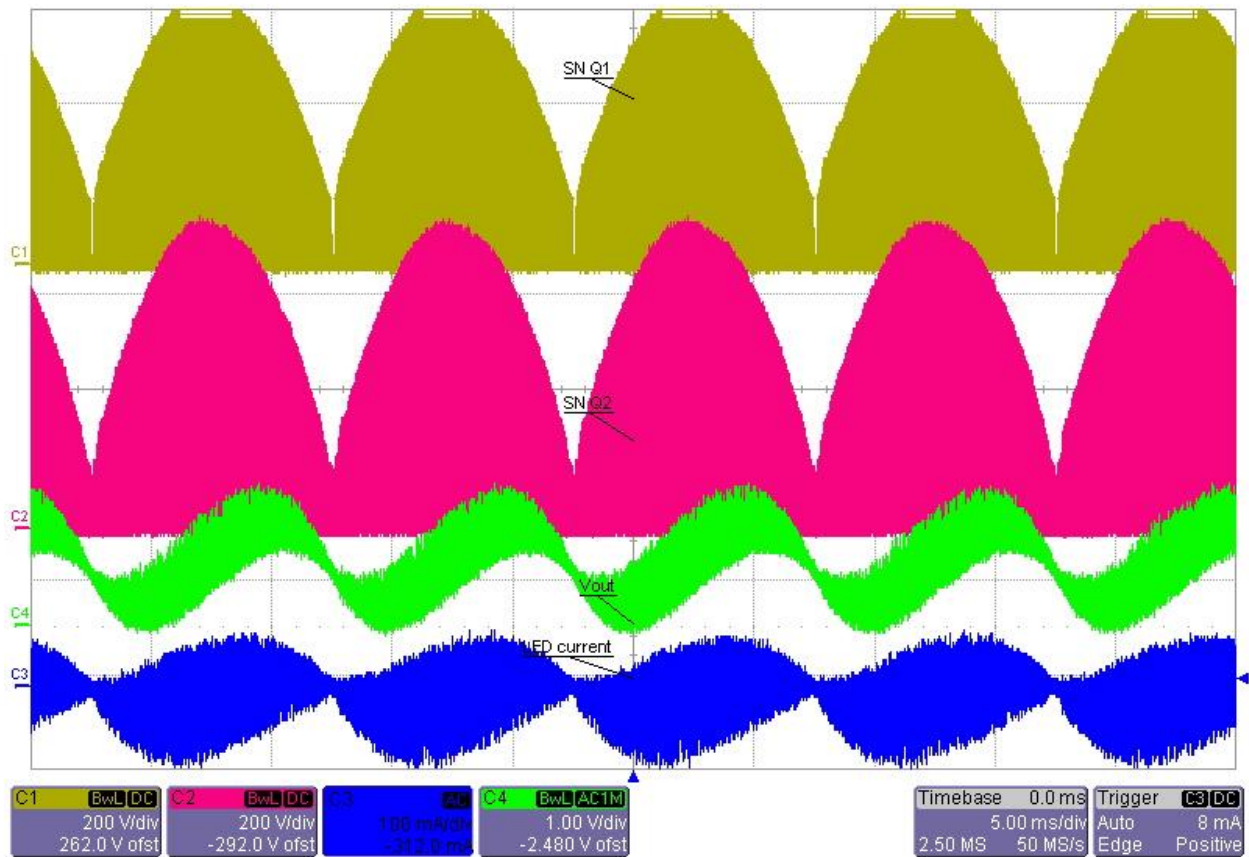


7 Output ripple voltage and LED current

Input voltage = 230VAC

LED current = 0.71A

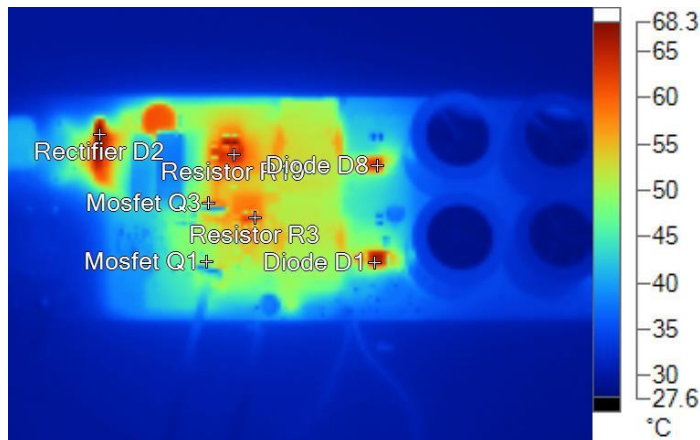
LED voltage = 234V



8 Thermal Analysis

The images below show the infrared images taken from the FlexCam after 15min at 0.71A LED current.

Input voltage = 230VAC
 Output power = 232V@0.71A
 Ambient temperature = 25°C
 No heatsink, no airflow



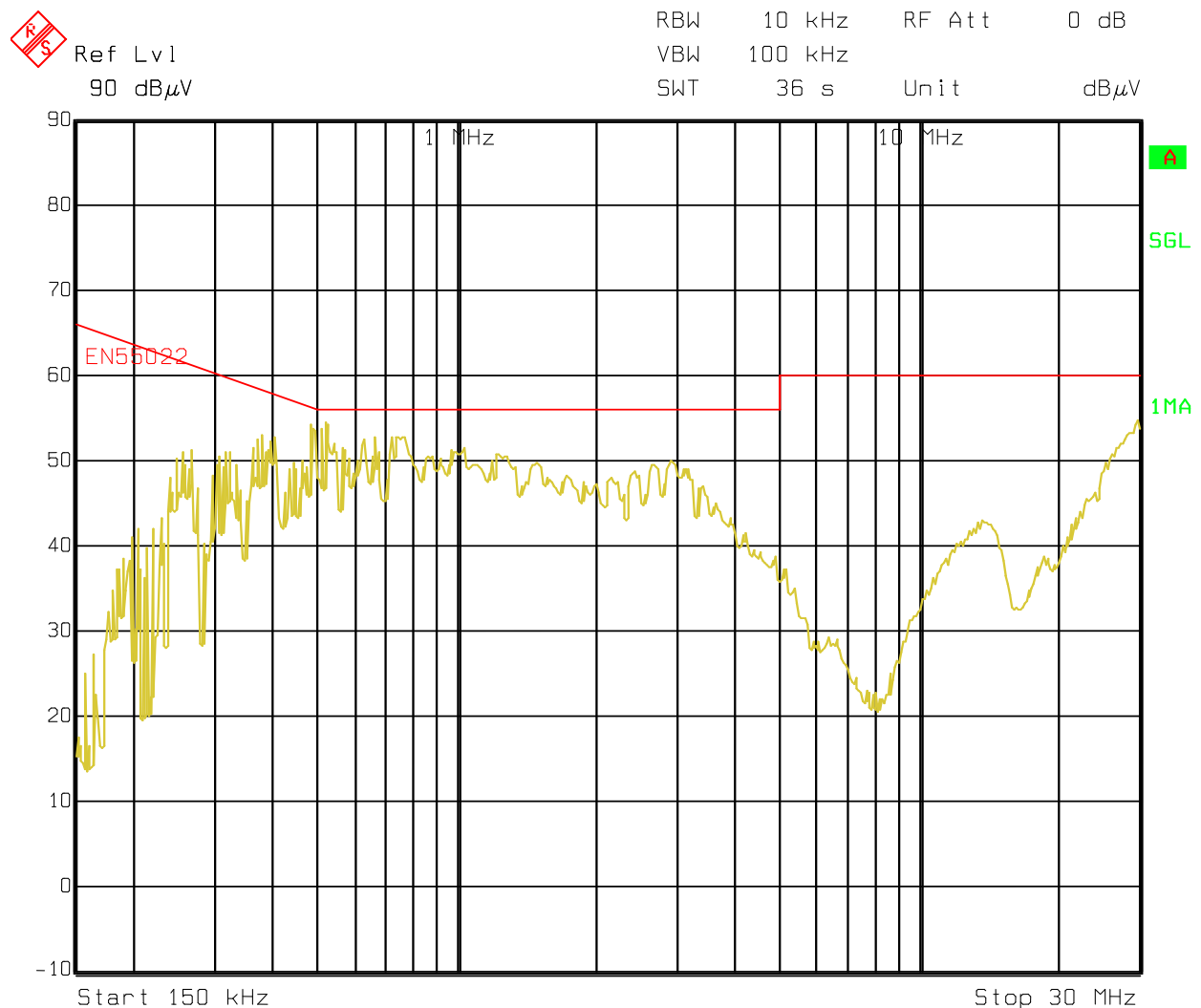
Name	Temperature
Rectifier D2	68.3°C
Resistor R19	65.3°C
Resistor R3	62.8°C
Mosfet Q1	52.3°C
Diode D8	63.4°C
Mosfet Q3	54.1°C
Diode D1	64.3°C

0623_Vin=230VAC Vout=232V@0.71A Top.is2

9 EMI Measurement

The graph below shows the conducted emission EMI noise and the EN55022 Class-B Quasi-Peak limits (measurement from the worst case line). The load was connected to a LISN and an isolation transformer; the load was a LED string (232V@0.71A), while the input voltage was 230Vac. The receiver was set to Quasi-peak detector, 10 KHz bandwidth.

The secondary side GND of the converter has been connected to the ground of the LISN.



Date: 1.JAN.1997 4:23:07

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