



Empirical Power Draw and Power Supply Guidance

ENG-0157

Revision Log

Date	Author	Changes	Rev.
5/27/2021	L Brady	Initial draft	A

Scope

This table applies only to the Raman and non Raman units powered by 12VDC, and is listed by detector (sensor).

How this Information should be Used

This information was gathered using a series ammeter. As such inrush at power up is NOT represented. The empirical measurements were made on a sample size of one unit (n=1).

When selecting a power supply consideration should be given not only to the steady state currents listed, but to dynamic changes in the load (for example at power up, or if the Laser is turned on/off, or the temperature setpoint is changed, or if ambient temperature changes). As such, the minimum recommended power supply column is a guide, but if the system design allows adding more margin is always better.

Types of power supplies

The power supply that is supplied with all our units is a 12VDC barrel jack type connection, center positive, with no shield connection (CUI PJ-057BH 2.5mm x 5.5mm center conductor). As such, the spectrometer anodized baseplate (and cover where applicable) is not connected to the 12VDC ground at this point, rather it is reference to USB chassis ground. It is highly advised that no attempt to tie the spectrometer chassis to 12VDC ground be made as this will likely introduce ground loops in the system.



Detector Designator	Detector PN	Default TEC Setting (deg C)	Pixel Count	Laser Yes/No	Recommended min Power supply Capability	Empirical Values (n = 1)		
						Peak Current w/ TEC On	Constant Current w/ TEC On	Peak Current w/ TEC & Laser On
A	S10420-1007	N/A	1024		1500 mA			
A1	S16010-1006	N/A	1024		1500 mA			
A2	S10420-1106	N/A	2048	No	500 mA	138 mA	137 mA	N/A
R	S16011-1006	10	1024	LMM	1500 mA	651 mA	398 mA	803 mA
R2	S16011-1106	10	2048	LMM	1500mA	538 mA	292 mA	583 mA
R3	S11850-1006	10	1024	No	1500 mA	465 mA	185 mA	N/A
R4	S11850-1106	10	2048	No	1500 mA	495 mA	258 mA	N/A
C	S10141-1007S	-15	1024	No	1100 mA	662 mA	507 mA	N/A
C2	S7031	-15	1024	No	1300 mA	971 mA	745 mA	N/A
C3	G9214	-15	512	No	2000 mA	1040 mA	715 mA	N/A
C4	G9208	-15	512					