aLIGO DC Power Strip Test Results LIGO-T1000657-v1 R. Abbott 29 October, 2010

- Overview DC power distribution within a rack is served by a custom plug strip (LIGO-D1002189). Versions 1 and 2 of this design are covered by this set of test results. The design current rating of the plug strip is 20A DC and the usable voltage range is from 0 to 48 VDC. This note records some relevant parameters associated with the ampacity of the plug strip.
- 2. Test Setup The testing was performed in a setup as shown in Figure 1.



3. Test Results – Results are presented in Table 1. At the time of measurement, 30 amps were flowing through the loop formed by the positive rail and the negative rail as depicted in Figure 1. All references are relative to the voltages and positions shown in Figure 1. Voltage measured with Fluke DVM, temperature measured with IR Non-contact Probe. Input cable is 6 feet of General Cable Catalog #02008, 14AWG, 3-conductor, Carol Super VU-Tron, yellow cable rated at 105 deg. C.

Parameter	Measured Value
Power Supply Current	30 Amperes
Voltage at V1	1.326 VDC
Voltage at V2	0.551 VDC
Voltage at V3	0.558 VDC
Voltage at V4	0.220 VDC
Voltage at V5	0.106 VDC
Voltage at V6	0.107 VDC
Ambient Temperature	73.5 Deg. F
Jacket Temperature of input cable at point A.	117 Deg. F
Bus Bar Conductor Temperature at point B	76.6 Deg. F

Table 1
