## NOTES (UNLESS OTHERWISE SPECIFIED):

- 1) PCB IS 12-LAYER, .062" THICK.
- 2) CONSTRUCTION IS SOLDER-MASK-OVER-BARE-COPPER (SMOBC).
- 3) ACCEPTABILITY SHALL BE BASED ON IPC-A-600, CLASS 2.
- 4) THE FOLLOWING GERBER RS274X PHOTO TOOL FILES SHALL BE USED TO DEFINE ALL CIRCUIT FEATURES:
- \*.GTL TOP LAYER GERBER DATA
- \*.GP1 INTERNAL PLANE LAYER 1 GERBER DATA
- \*.G1 MID LAYER 1 GERBER DATA
- \*.GP2 INTERNAL PLANE LAYER 2 GERBER DATA
- \*.GP3 INTERNAL PLANE LAYER 3 GERBER DATA
- \*.GP4- INTERNAL PLANE LAYER 4 GERBER DATA
- \*.GP5- INTERNAL PLANE LAYER 5 GERBER DATA
- \*.GP6- INTERNAL PLANE LAYER 6 GERBER DATA
- \*.GP7- INTERNAL PLANE LAYER 7 GERBER DATA
- \*.GP8- INTERNAL PLANE LAYER 8 GERBER DATA
- \*.GP9- INTERNAL PLANE LAYER 9 GERBER DATA \*.GBL - BOTTOM LAYER GERBER DATA
- \*.GTO TOP OVERLAY GERBER DATA
- \*GBO -- BOTTOM OVERLAY GERBER DATA
- \*.GTP TOP-SIDE SOLDER PASTE MASK
- \*.GTS TOP SOLDER MASK GERBER DATA
- $\star$ .GBS BOTTOM SOLDER MASK GERBER DATA
- 5) THE PHOTO TOOL SHALL NOT BE COMPENSATED WITHOUT PRIOR ENGINEERING APPROVAL. PCB DESIGNER: RICH LOBDILL PH (805) 880-1621 FAX (805) 961-1792.

### FABRICATION TOLERANCES

- 6) END PRODUCT CONDUCTOR WIDTHS AND PAD DIAMETERS SHALL NOT VARY MORE THAN
- 0.002" FROM THE 1:1 DIMENSIONS OF THE MASTER ARTWORK.
- 7) THE CONDUCTIVE PATTERN SHALL BE POSITIONED SO THAT THE LOCATION OF ANY PAD OR LAND SHALL BE WITHIN 0.005" DIAMETER TO THE TRUE POSITION OF THE HOLE IT CIRCUMSCRIBES.
- 8.1) DRLL TOLERANCES +/- 0.003"
  8.2) ALL DRLL HOLE SIZES AND TOLERANCES APPLY AFTER PLATING.
- 9) THE MINIMUM ANNULAR RING SHALL BE 0.005".
- 10) BOW AND TWIST SHALL NOT EXCEED 0.010" PER INCH.
  11) FOR PCB ROUTING DIMENSIONS: .XXX = +/-.005" .XX = +/-.020"

### MATERIAL

- 12) BASE MATERIAL IS FR4 EPOXY FIBERGLASS
- 13) SEE STACK-UP LEGEND FOR COPPER CLADDING CALL OUTS

# PLATING

- 14) ALL HOLES AND CONDUCTIVE SURFACES SHALL BE PLATED WITH A MINIMUM OF 0.001" COPPER.15) AFTER SOLDERMASK, ALL EXPOSED HOLES AND CONDUCTIVE SURFACES SHALL BE COATED WITH A GOLD IMMERSION PLATING TO PRESERVE SOLDERABILITY.

- 16) THE SOLDERMASK SHALL BE BLACK LIQUID PHOTO-IMAGEABLE PER IPC-SM-840, TYPE-B, CLASS 2.
- 17) THE SOLDERMASK REGISTRATION ALLOWANCE IS 0.003". THERE SHALL BE NO SOLDERMASK ON ANY SOLDER PAD OR LAND.

- 18) THE LEGEND SHALL BE SCREEN-PRINTED USING PERMANENT YELLOW EPOXY INK.
- 19) THE SCREEN PRINTING REGISTRATION ALLOWANCE IS 0.007". THERE SHALL BE NO INK ON ANY SOLDER PAD OR LAND
- 20) THE VENDOR CODE AND UL FLAMMABILITY RATING MAY BE ETCHED IN THE FOIL OR MARKED IN PERMANENT EPOXY INK (VENDOR'S OPTION).

21) ALL BOARDS SHALL BE ELECTRICALLY TESTED TO THE SUPPLIED IPC-D-356A NET LIST FOR CONTINUITY, OPENS AND SHORTS.

| Layer Stack Up Detail for: 175-00014_Rev1, PCB, Sinistro Backplane.PcbDoc |                          |
|---|--------------------------|
| Layer<br>Name   | Copper cladding          |
| Top Layer (*.GTL)   | 1/2 oz. (1 oz. Finished) |
| AGND (*.GP1)  | 1/2 oz                   |
| Mid-Layer 1 (*.G1)  | 1/2 oz                   |
| GND (*.GP2)   | 1/2 oz                   |
| +12V (*.GP3)  | 1/2 oz                   |
| -12U (*.GP4)  | 1/2 oz                   |
| +5ANA (*.GP5)   | 1/2 oz                   |
| -5ANA (*.GP6)   | 1/2 oz                   |
| +28V (*.GP7)  | 1/2 oz                   |
| VCC (*.GP8)   | 1/2 oz                   |
| +24V (*.GP9)  | 1/2 oz                   |
| Bottom Layer (*.GBL> 1/2 oz. (1 oz. Finished)                             |                          |
| ·   |                          |

(REFER TO COMPLETE SPEC LISTING AT LEFT FOR FURTHER DETAILS) NUMBER OF LAYERS -12 .062" FINISHED THICKNESS BASE MATERIAL FR4 GOLD IMMERSION

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5.00

PLATING TYPE SOLDER MASK COLOR -

Las Cumbres Observatory, Inc. 6740 Cortona Dr. Las Cumbres Observatory Global Telescope Network oleta, CA SC. www.lcogt.net Rich Lobdill 12/20/2012 Rich Lobdill 175-00014, Sinistro Backplane - GPT 3 | Sect 1 of 20

# PRIMARY PCB SPECIFICATIONS

**BLACK**