#### NOTES (UNLESS OTHERWISE SPECIFIED):

### GENERAL

- 1) PCB IS x-LAYER. .062" THICK.
- 2) CONSTRUCTION IS SOLDER-MASK-OVER-BARE-COPPER (SMOBC).
- 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
  - \*.G1 MID LAYER 1 GERBER DATA
  - \*.GP1 INTERNAL PLANE 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
  - \*.GBL BOTTOM LAYER GERBER DATA
  - \*.GTO TOP OVERLAY GERBER DATA \*.GTS - TOP SOLDER MASK GERBER DATA
  - \*.GTP TOP-SIDE SOLDER PASTE MASK
  - \*GBO BOTTOM OVERLAY GERBER DATA
  - \*.GBS BOTTOM SOLDER MASK GERBER DATA
  - \*.GBP BOTTOM-SIDE SOLDER PASTE MASK
- 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) ALL DRILL 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"

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

## PI ATING

- 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.

## COATINGS

- 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

# MARKING

- 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).

## ELECTRICAL TESTING

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: 175-00024_rev2, Backplane, Instrument Crate.PcbDc	
Layer Name	COPPER THICKNESS
Top Layer (*.GTL)	1/2 oz, 1 oz Finished
Mid-Layer 1 (*.G1)	1 oz
+24U (*.GP1)	2 oz
RTN (*.GP2)	2 oz
+3.3U (*.GP3)	1 oz
+12V (*.GP4)	1 oz
Signal GND (*.GP5)	1 oz
Bottom Layer (*.GBL)	1/2 oz, 1 oz Finished

NOTE: 2 OZ COPPER FOR CERTAIN LAYERS

PRIMARY PCB SPECIFICATIONS (REFER TO COMPLETE SPEC LISTING AT LEFT FOR FURTHER DETAILS)

NUMBER OF LAYERS -8 FINISHED THICKNESS .062" FR4

NOTE: BOARD CUTOUTS (11 PLCS)-

BASE MATERIAL GOLD IMMERSION PLATING TYPE **BLACK** 

SOLDER MASK COLOR -

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Las Cumbres Observatory, Inc. as Cumbres Observator 6740 Cortona Dr. Global Telescope Network Goleta, CA 93117 www.lcogt.net Rich Lobdill Rich Lobdill 175-00024, BACKPLANE, INSTRUMENT CRATE 2 SHET 1 OF X - GPT

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