

CU-LASP Production Capabilities

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LASP Production

- Full array of proven production services
 - Fabrication
 - Polymerics
 - Mechanical Assembly
 - Electrical Assembly (inc. harnesses)
 - Contamination Containment
- As required End-to-end assembly capabilities, or ala carte services
- All Technicians in all areas with many years of Aerospace Flight experience
- Standard ANSI 20.20 ESD procedures through all labs

LASP Production: Fabrication



Equipment includes:

4-axis CNC mill 40"x20"

3-axis CNC mill 36"x18"

2-axis EZ-Trak

8" Chuck CNC Lathe

Other manual milling and lathe equipment
inc Hardinge tool room lathe

30 ton Hydraulic Press

Instrument Shop

Machinists each with over twenty years experience

Flight (Final Production) , Proto-type & GSE
fabrication capabilities

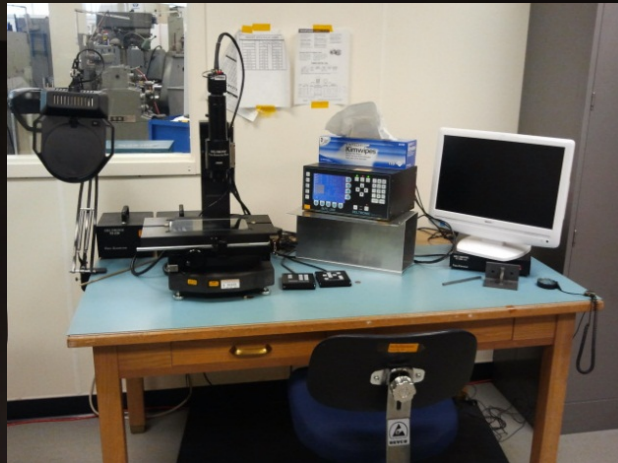
Variety of materials from Aluminum, Delrin and
Stainless to BeCu, Titanium and Macor



Fabrication: Examples



LASP Production: Verification



Metrology Lab

Temperature/Humidity controlled lab

Independent verification of parts fabricated internally

Full metrology report available on request

Laser engraving capability



Metrology Lab Equipment

Zeiss Calypso CMM 24"x24"x24"

Deltronic Video comparator

Brown & Sharpe Micro-Hite

Variety of micrometers and gauges

RMI Laser Engraving System



LASP Production: Electrical Assembly



Electrical Assembly Lab Technicians

Average assembly experience is over 18 years

Technicians certified to

NASA Std 8739.2 & 8739.3 for board assembly

NASA Std 8739.4 for harness assembly

Lead-forming capabilities inc. FPGA up to 352 pin

SMT components as small as 0705

Electrical Assembly Lab

Temperature/Humidity controlled lab

Class-100 flowbenches

Zeiss microscopes on all benches

Fancort Universal leadform tooling and press

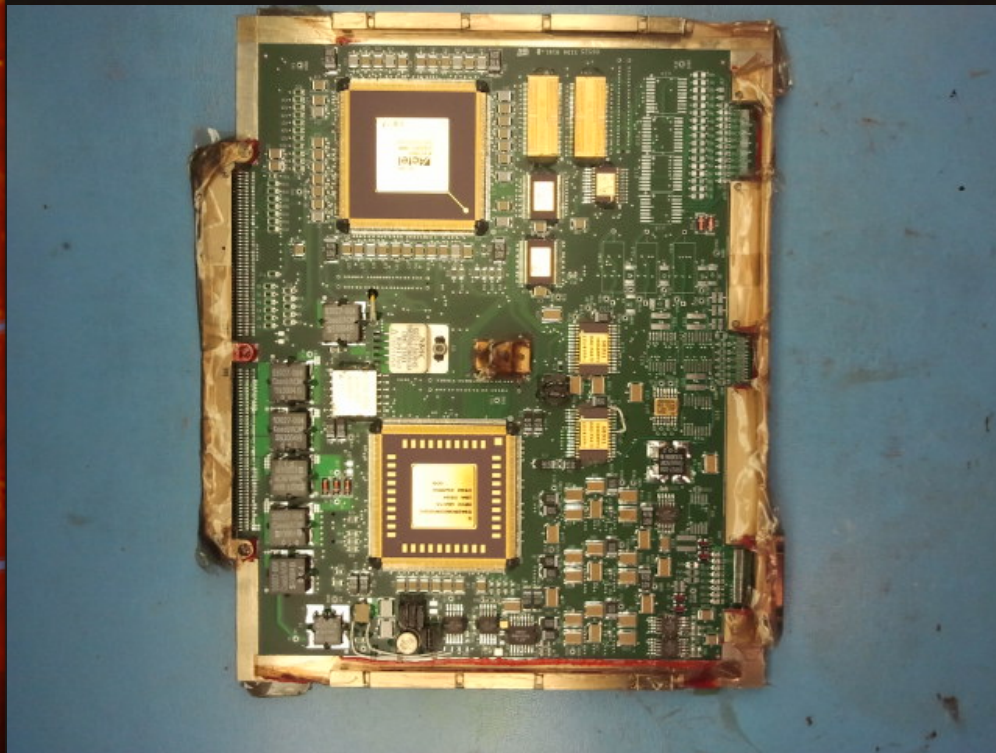
SN63PB37 Solder Kester Flux (R/RMA/RA)

Solder pot, Motorized crimp pull tester

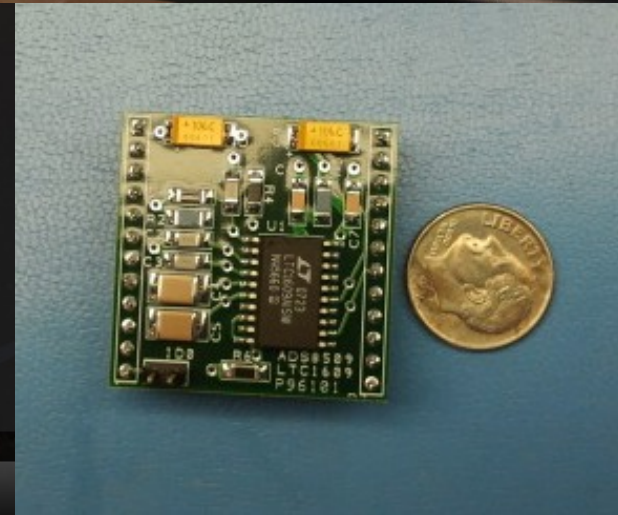
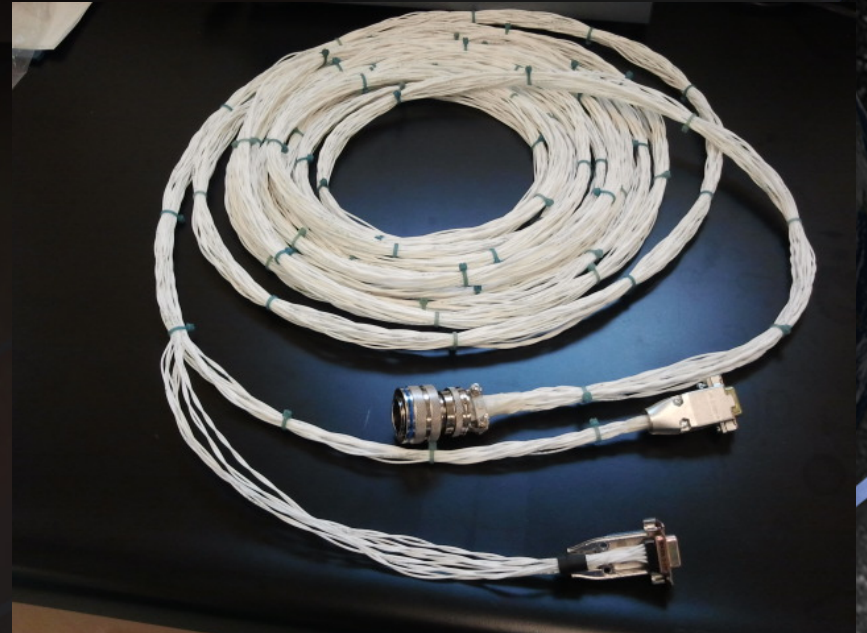
N2 Purge storage available for consigned parts



Electrical Assembly: Examples



Shown with polymeric masking



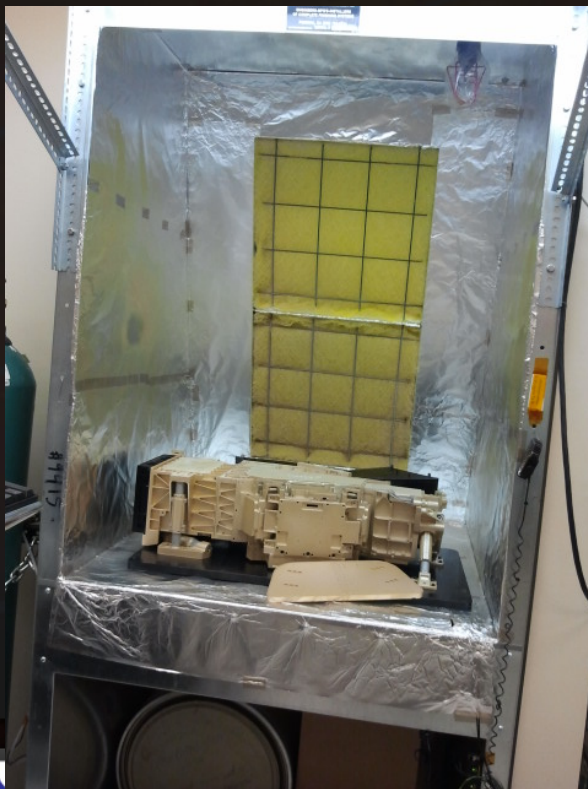
LASP Production: Polymerics Lab

Polymerics Lab Technicians

Technicians certified to NASA Std 8739.1 for polymeric applications

Average of over twenty years of experience

Experience with a wide variety of epoxies, adhesives, primers and coatings



Polymerics Lab

Temperature/Humidity controlled lab

Spray booth for paint or conformal coatings

SCS Ionograph Tester

Class-100 flowbenches with microscopes

Multiple curing ovens

Ambient filtered storage cabinet

LASP Production: Contamination Containment

Cleaning Lab

Class-10K Cleanroom plus Class-100 flowbench

Extreme ESD handling capability

25 material-specific cleaning protocols to insure proper material handling

Ultrasonic methods

Manual wipe methods

Other specialized methods

Experience with a wide variety of surfactants and cleaning agents

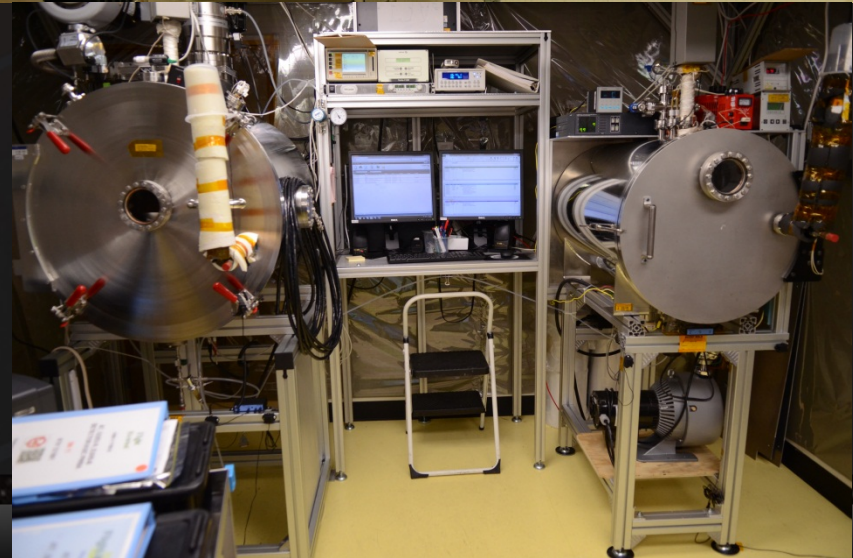
Fume hood available as required

Ionized nitrogen blower used for drying

Vacuum bake-out tank facility with Residual Gas Analyze (RGA) and Thermal Quartz Crystal Microbalance (TQCM) verification available if needed

30-150C Max

Chambers up to 21X22X33"



LASP Production: Mechanical Assembly

Mechanical Assembly Labs

Temp/Humidity controlled lab

Class-100 flowbenches for assembly work outside of Cleanroom environment

Access to Class-1K cleanrooms for assembly

Fully stocked tool boxes for each bench

ESD controls

Calibrated granite tables for flatness requirements



Mechanical Assembly Technicians

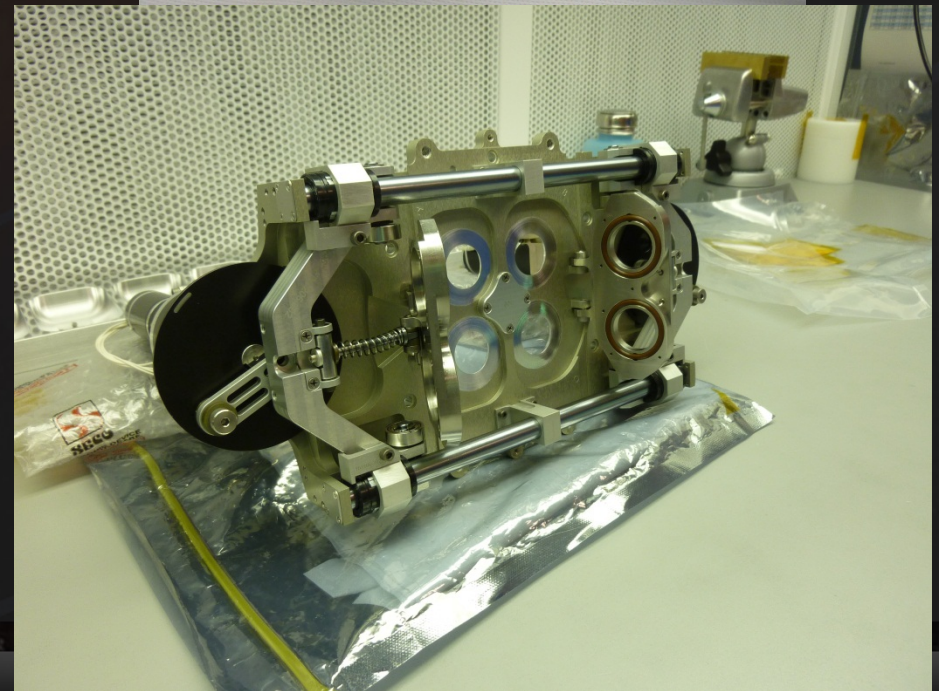
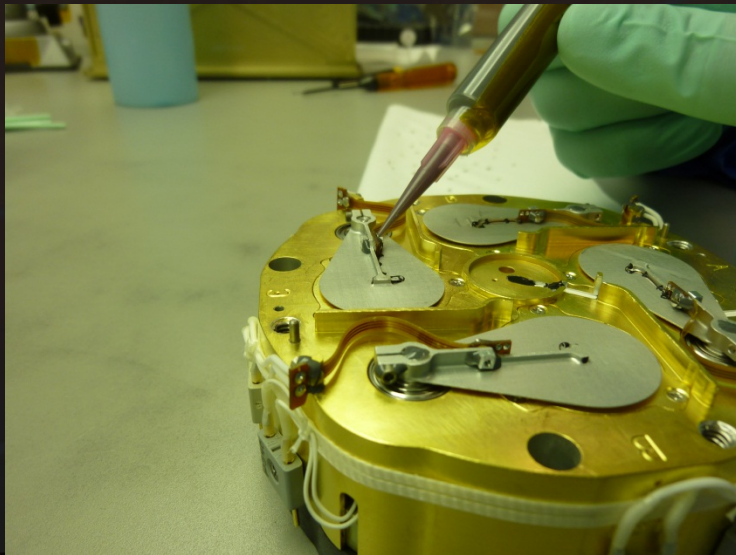
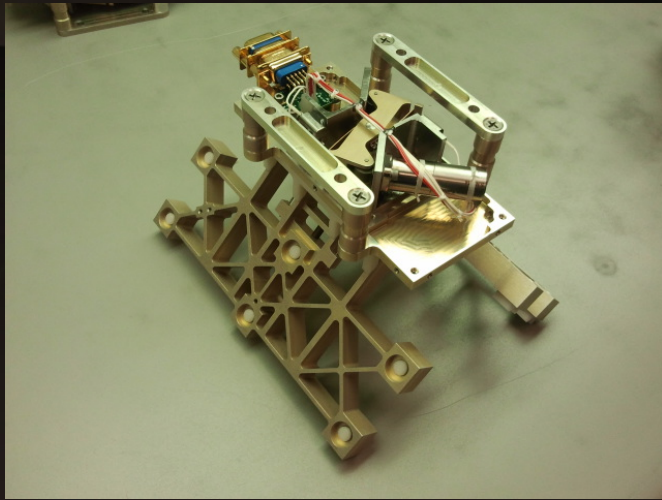
Experienced in handling delicate instruments

Helicoils (1-64 & up) and Fasteners (down to 000)

Bearing, detectors, and optics installations

NASA certified for polymeric applications

Mechanical Assembly: Examples



Mechanical Assembly: Examples

