

The UK ATC has many years of experience of delivering complete facility class instruments and sub-systems to major astronomical facilities, and carries out the whole process from design and simulation to manufacture and commissioning. We specialise in providing complete systems as a whole package - electrical, mechanical, optical and software systems along with documentation and technical project management.



We have expertise in:

- testing instruments in simulated environments
- cryogenics to temperatures as low as 60 mK including precise and reliable cryogenic mechanisms and cryogenic mounting of optics
- software for instrument control and data acquisition

Laboratories and clean rooms

- 13 lab areas including large lab with maximum height of 6.5 m, overhead crane which can handle equipment up to mass of 10 tonnes and services such as compressed air, water cooling, chilled water etc.
- US power supply (110 V 60 Hz)
- Test cryostats of various sizes capable of temperatures down to 4 K, including a 1 m diameter cryostat operating to 20 K.
- Cryogenic support equipment (liquid nitrogen and helium, leak detectors etc.)
- 3 flexure rigs; maximum test capacity is 10 tonnes and 3 cubic metres.
- Three class 1000 clean rooms

- including a class 100 laminar flow cabinet, used for electronic device assembly.
- 4 m x 4 m tented class 10 000 clean room

Mechanical workshop

- CNC and manual mills and lathes
- CMM in semi-clean area with resolution approximately 1.5 μm

Mechanical engineering

Software for mechanical design, version control, thermal and mechanical finite element analysis. Can produce outputs for computer aided manufacture.

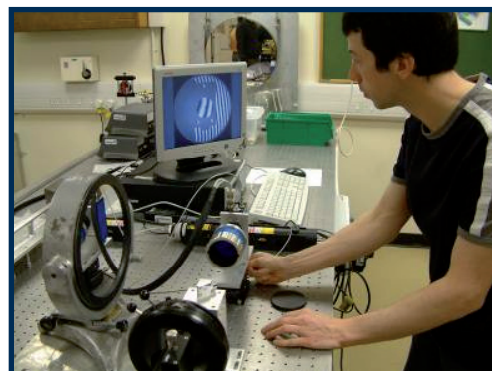
Electronics

- Lexica microscope with TV camera and frame grabber, located in class 1000 clean room
- Two complete data acquisition systems for CCD/Infra-red array measurements (32 channels, 1 MHz sampling per channel, SDSU III/ARC controllers)
- Full scanning monochromator (used for absolute quantum efficiency measurements at optical/IR wavelengths (0.04–1.5 μm))
- NPL calibrated diodes for calibrating optical CCD detectors
- Test cryostats for IR detector characterization (cool to 45 K using closed cycle coolers)
- JHK band filters (1 to 2.5 μm)
- Fe55 X-ray source (used to measure charge transfer efficiency of CCDs)
- Calibrated 4 inch square black

- body source
- Full FPGA design environment (Altera devices)
- Software: Protel for schematic capture, PSPICE

Optics

- Six large optical benches
- Three portable fully phase shifting optical interferometers (used to measure flatness etc.) – up to 100 mm beam diameter
- Perkin Elmer spectrophotometer (0.4 – 3 μm) (used for measuring filter transmission etc.)
- Two alignment telescopes
- TM5100A theodolite
- Cooled CCD camera



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