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Available FFC Bridge:

- 41 x 6.5 mm (cut from 13 max)
- 36 connections on 1 mm spacing
- Pads are 0.35 mm wide
- Pad width designed to fit on 0.5 mm wide PCB pads
- We have enough for EUDET

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Tungsten Lamp – 118mm

- 500W
- OK for 1 or possibly 2 FFC Bridges at a time
- Variac controller
- Consistently good joints
- Successfully bonded Demonstrator ASUs at Orsay
  - in spite of far-from-optimal pad design

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Tungsten Lamp – 254mm

- Aim to do 4 FFC Bridges at a time (i.e. full ASU width)
- 1000W or 1500W
- Custom controller
  - Microcontroller-based
  - Free standing
  - Simple menu-driven interface

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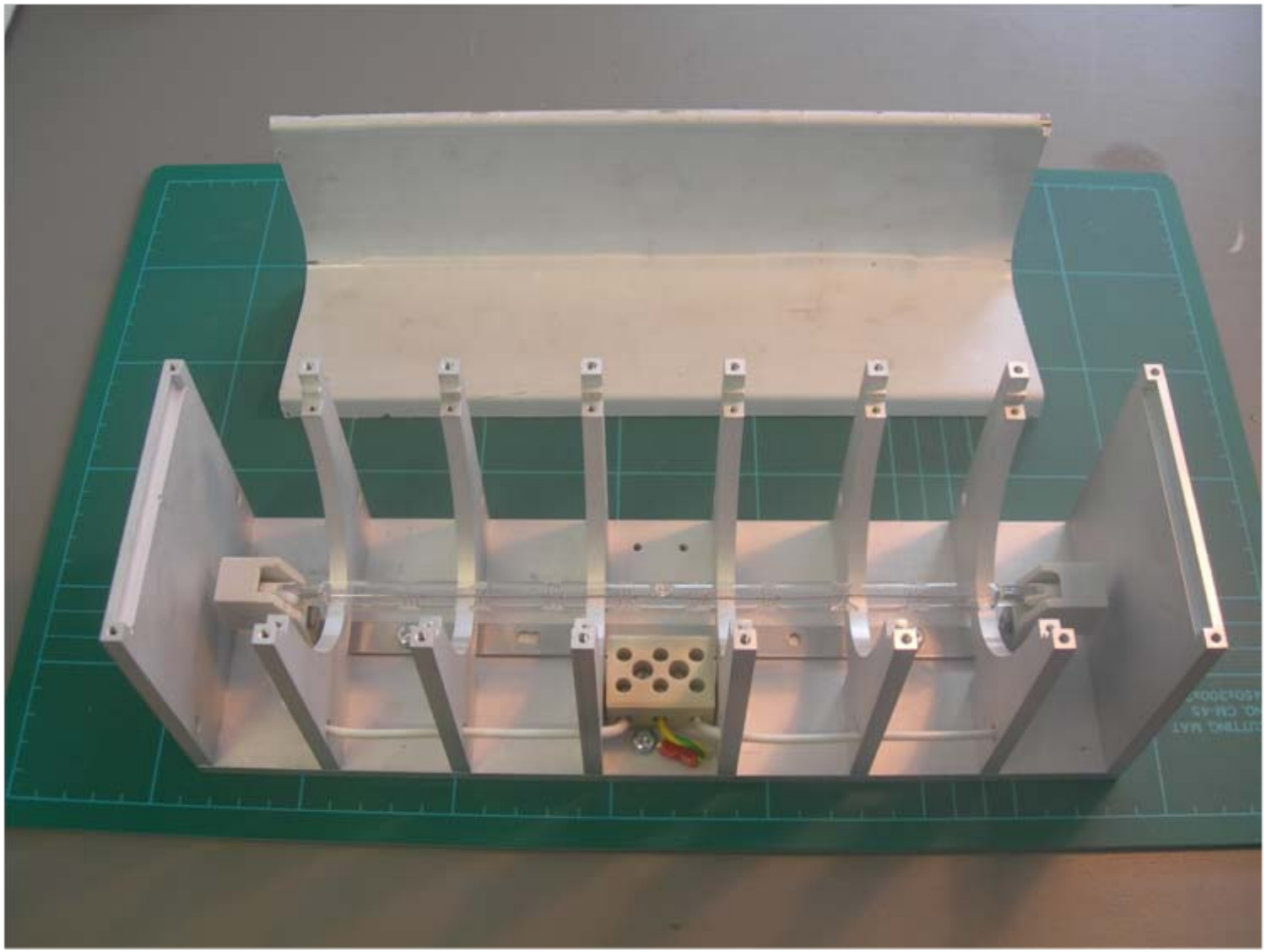
Tungsten Lamp – 254mm



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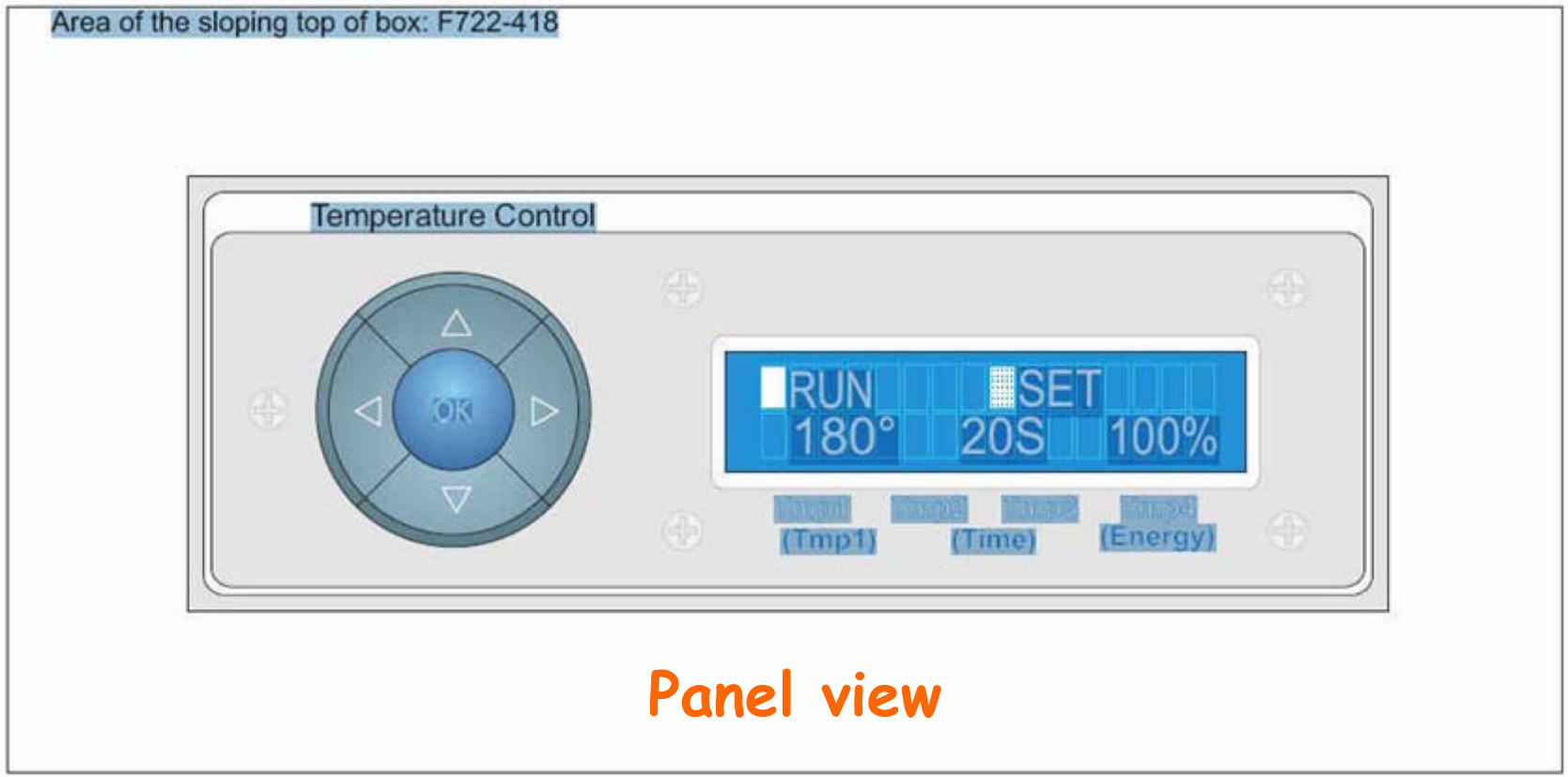
Controller:

- Phase control using Photo-Triac SSR
- 4 Thermocouple inputs



Panel view

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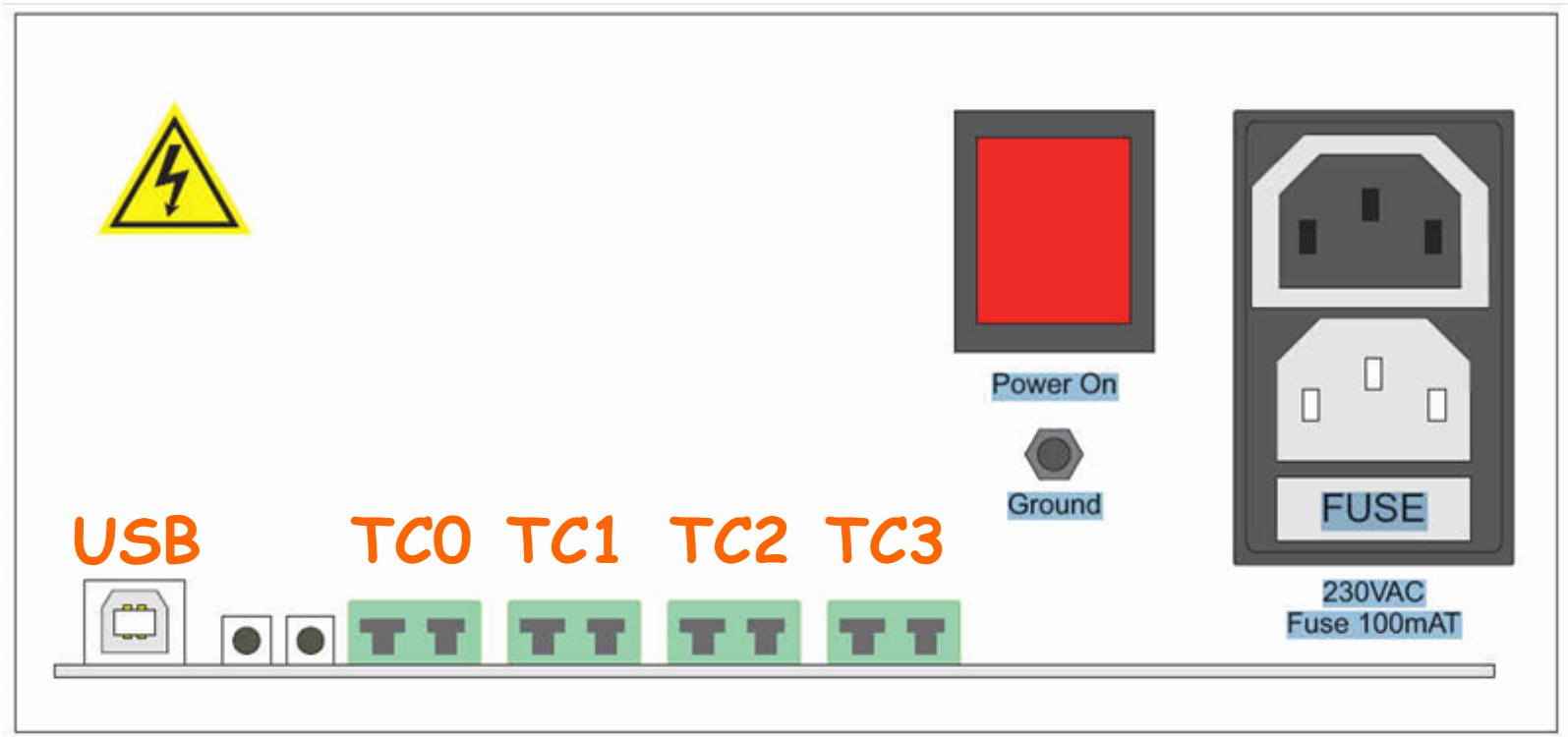
Controller:



Rear view

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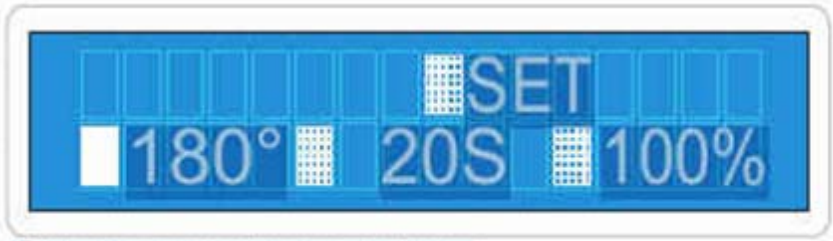
Controller:

Start-up menue

Run menue, ramp

Run menue, flat



Set menue, temperature

Set menue, flat time

Set menue, energy

RUN Menu

Adjust Menu

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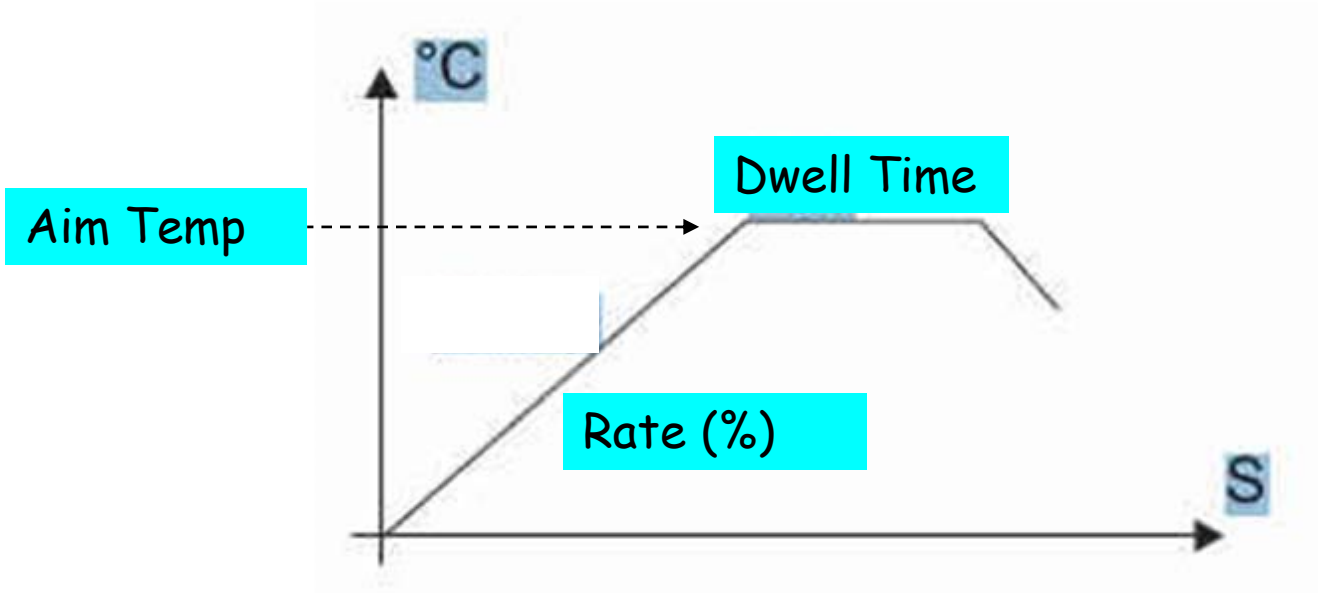
Controller: Adjustment



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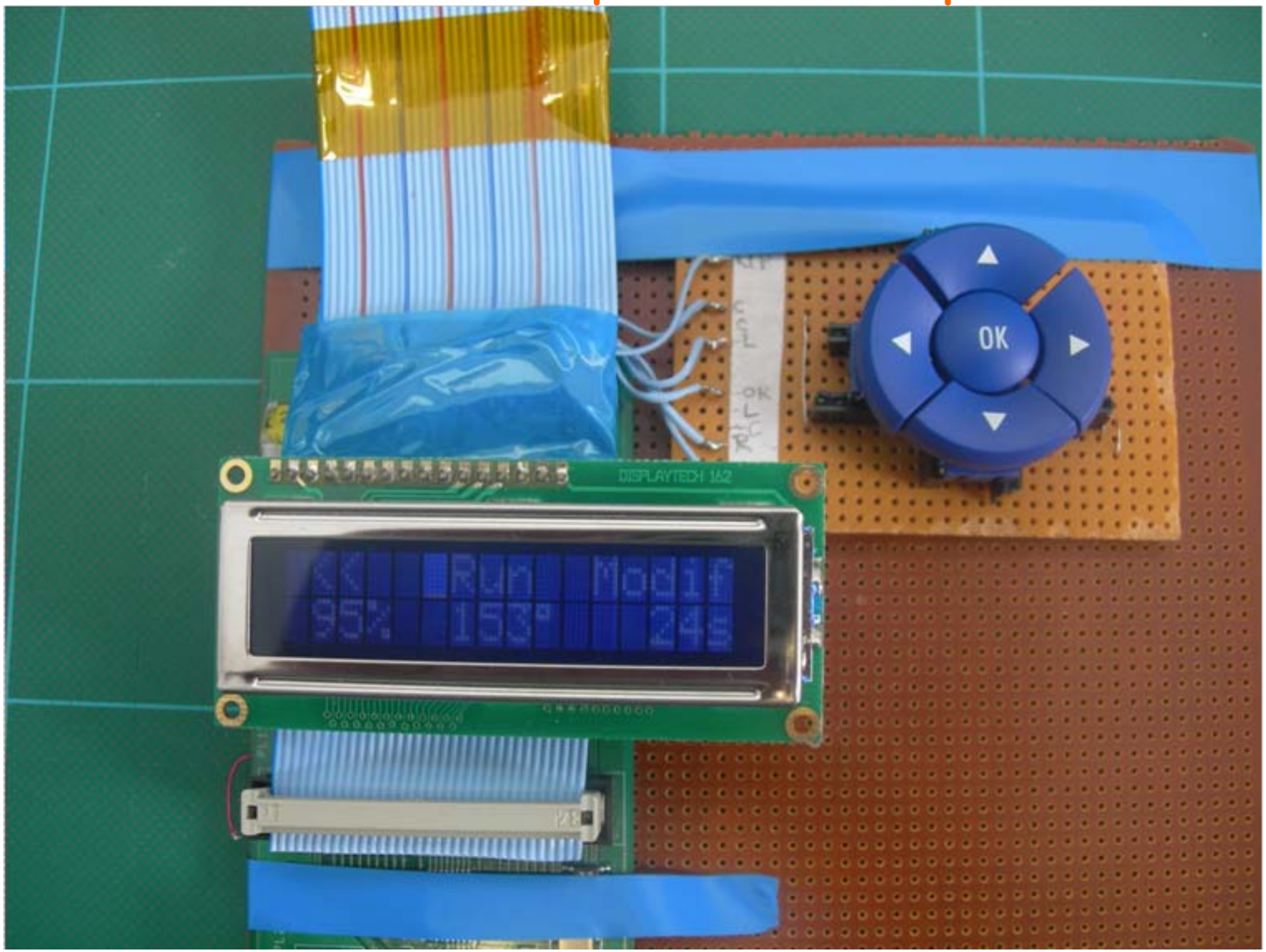
A few pictures: Top



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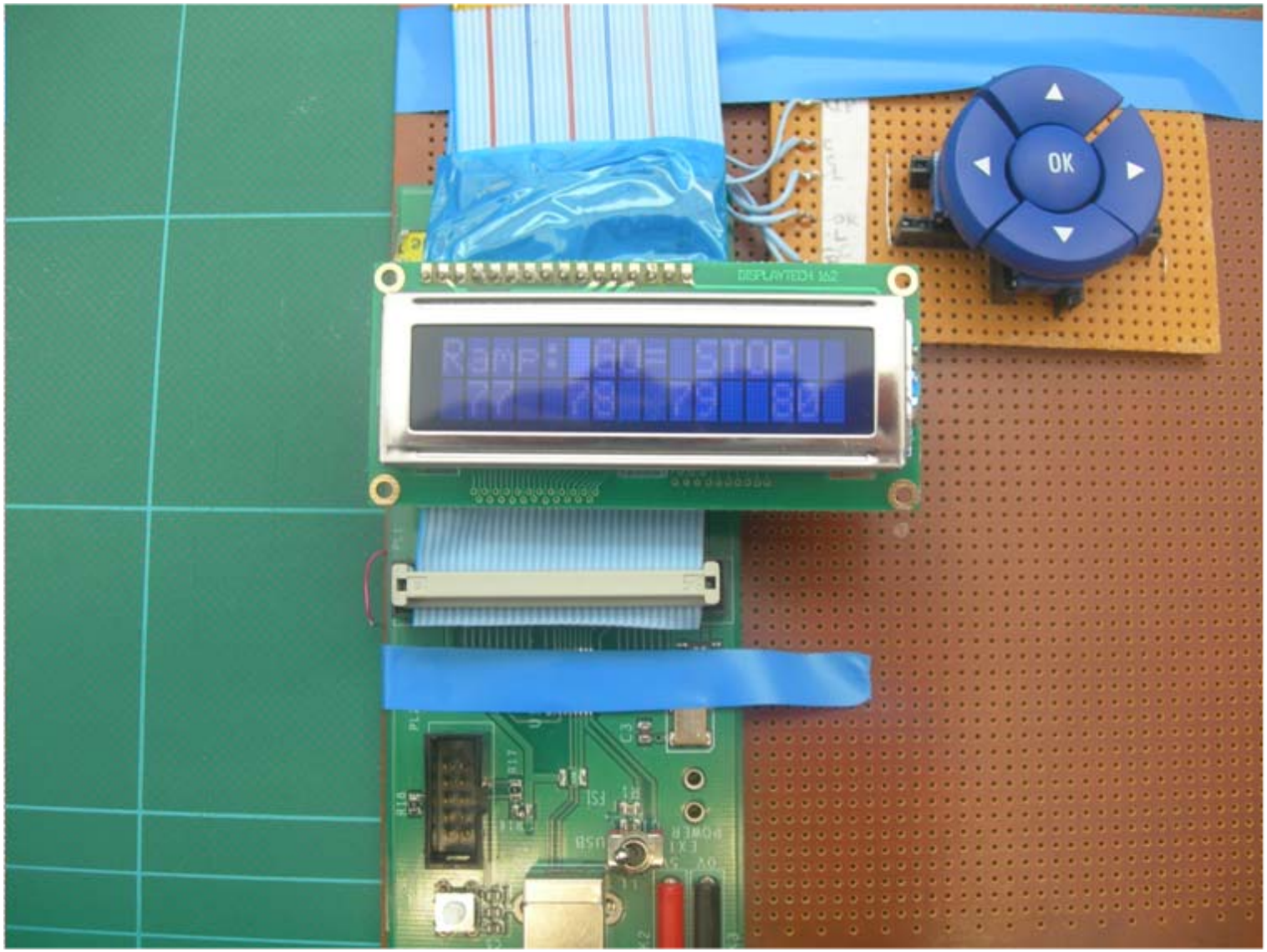
A few pictures: Ramping



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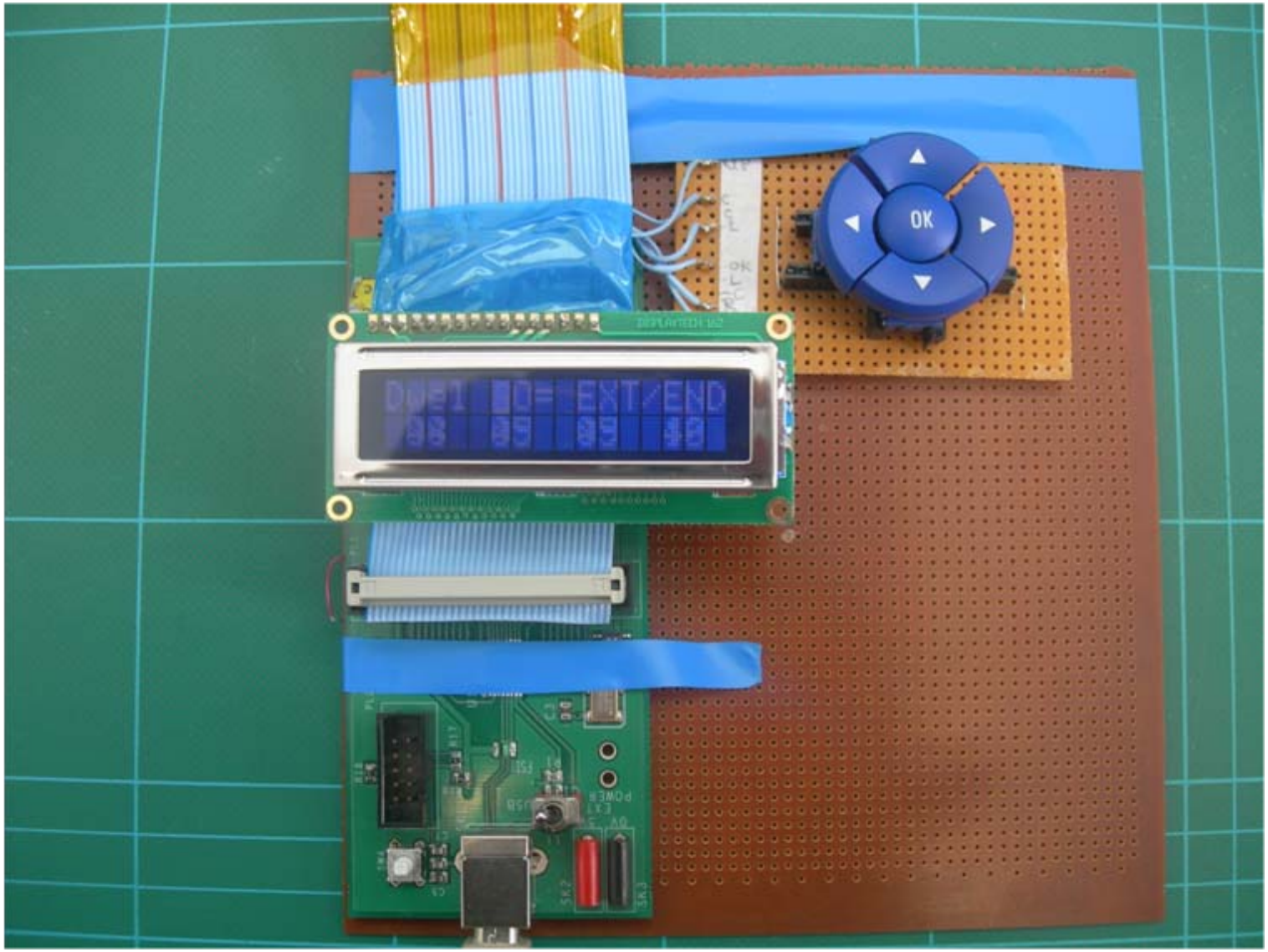
A few pictures: Dwell



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Status

- Lamphousing built
- Have window
- Reflector: have ordered thinner polished s/s sheet
- Bricolaged power OK for 118mm lamp – no human I/F
- Human interface (HIF) software 95% done
- Controller PCB design needs 3-4 weeks to finish
  - then 2 weeks to manufacture
  - Then 3-4 weeks to assemble and commission

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Spare Slides

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ECAL Thermal Demonstrator Interconnection

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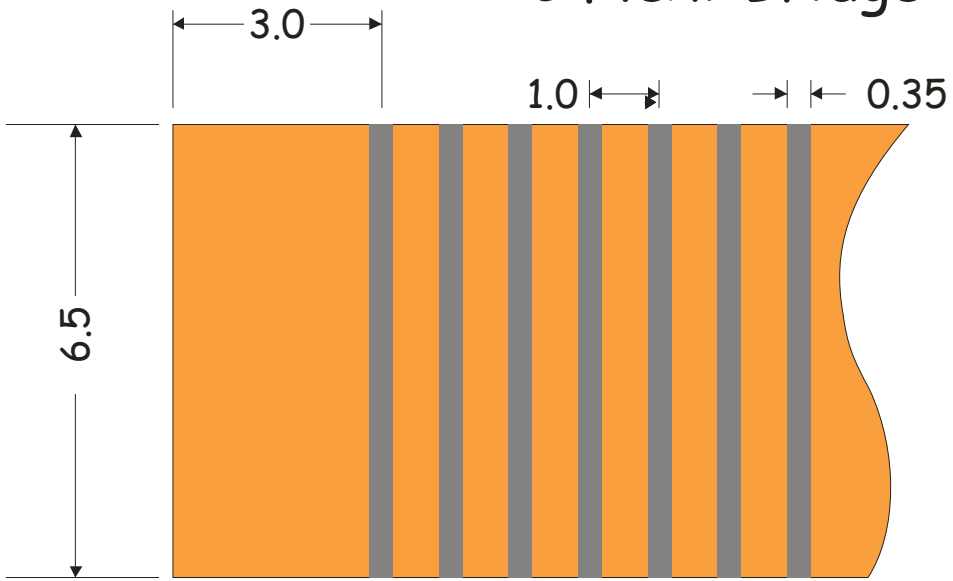
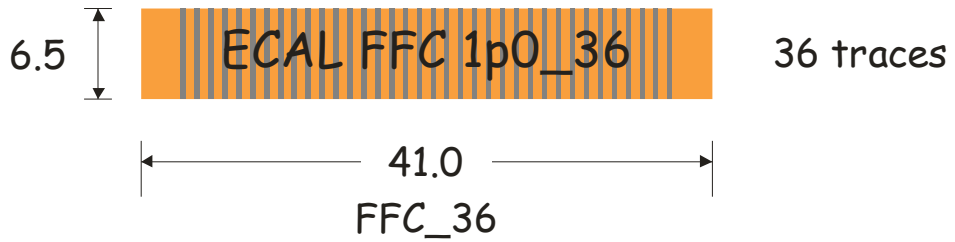
FFC Detail

FFC Flexi-Bridge



Detail x10

Detail x2



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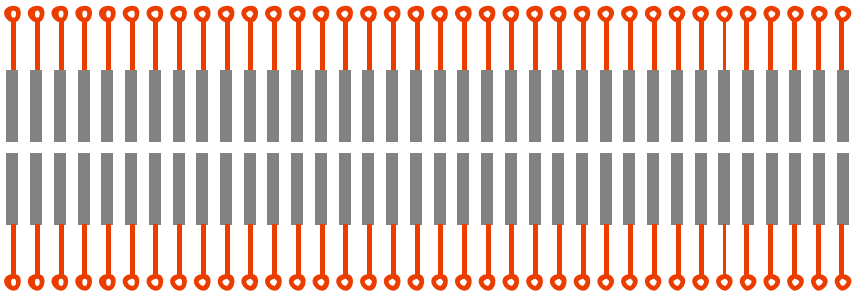
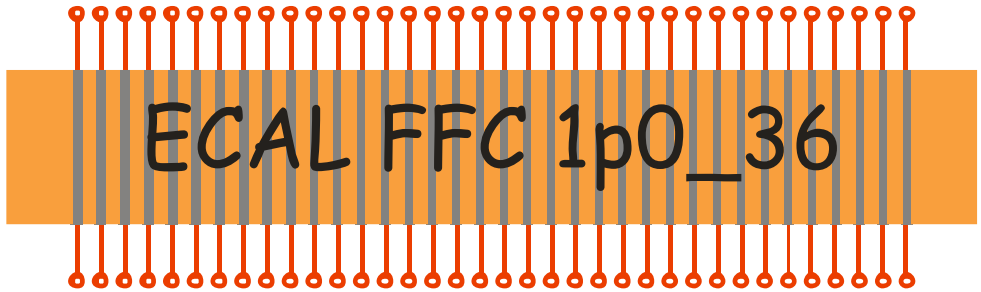


36 Pads 6 x 0.5

Footprints

Footprint Detail



Footprints with FFC

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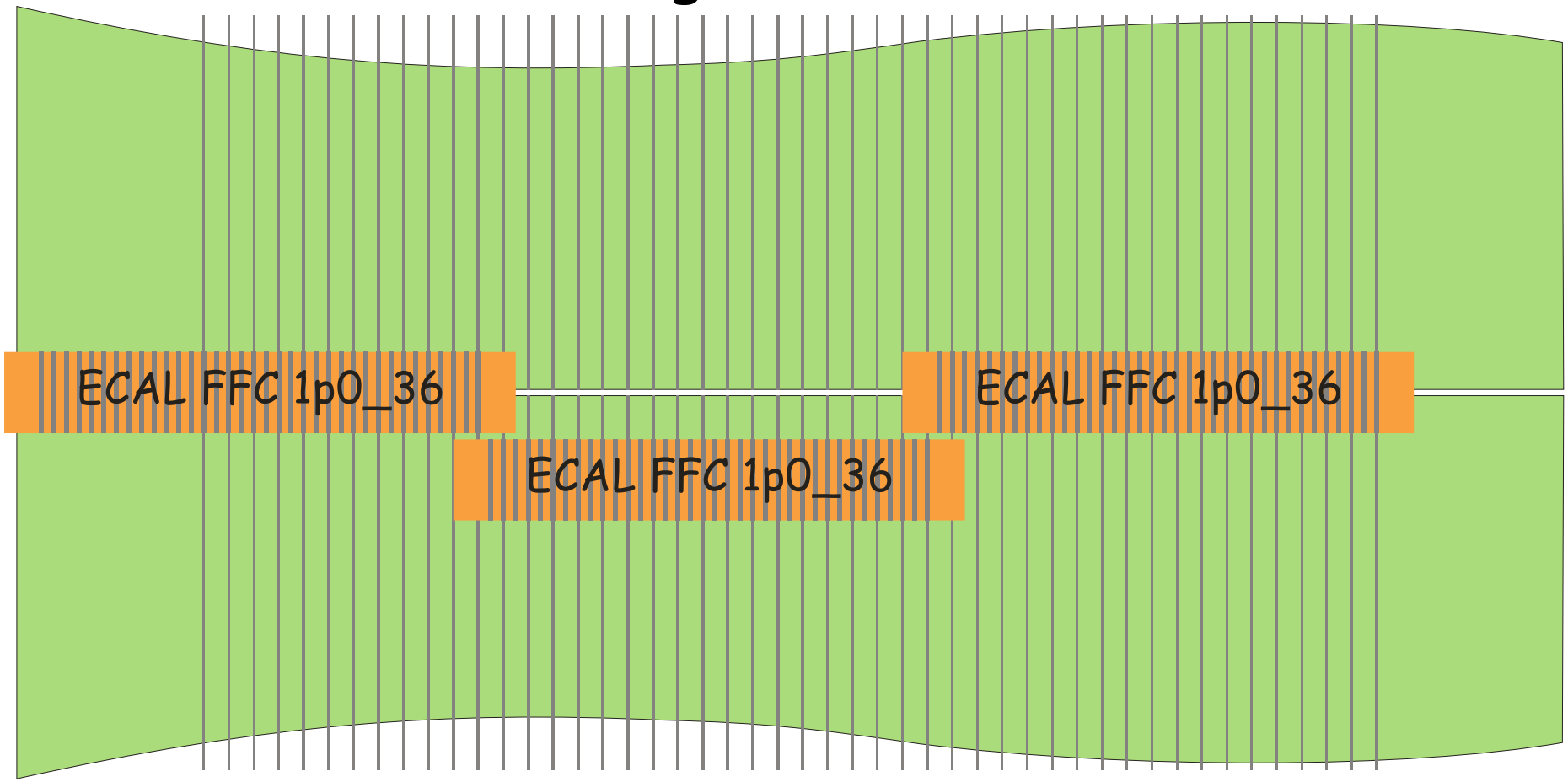
Joining Demo PCBs



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Joining Demo PCBs: Issues

- Need 3 FFCs for 48 connections on 2 mm spacing
  - no problem … can cut
- Overlap of FFCs
  - can cut, can hold in place with glass plate
- Need to remove alternate traces of FFC (?)
  - have shown this is OK
- Soldering
  - 94 mm of connections wider than we have done
  - … we believe this will not be a problem
- Solder Paste Mask
  - not easy: …

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Joining Demo PCBs: Issues

Solder Paste Mask

- 0.2 mm pads on PCB means <= 0.2 apertures
  - Difficult for etched stencils (trial not very good)
  - Have had laser-cut stencil made which looks better
  - … but will it release the solder paste?
    - … we're working on this
    - – maybe close to solving this problem

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Conclusions

- There are difficulties to be overcome
- We are hopeful of success next week at LAL: ~ 80% confident
- Refining the technique should overcome residual problems
- Future ASUs should be designed with the ideal footprints. Main issue is the pad width