LEBT to RFQ separation

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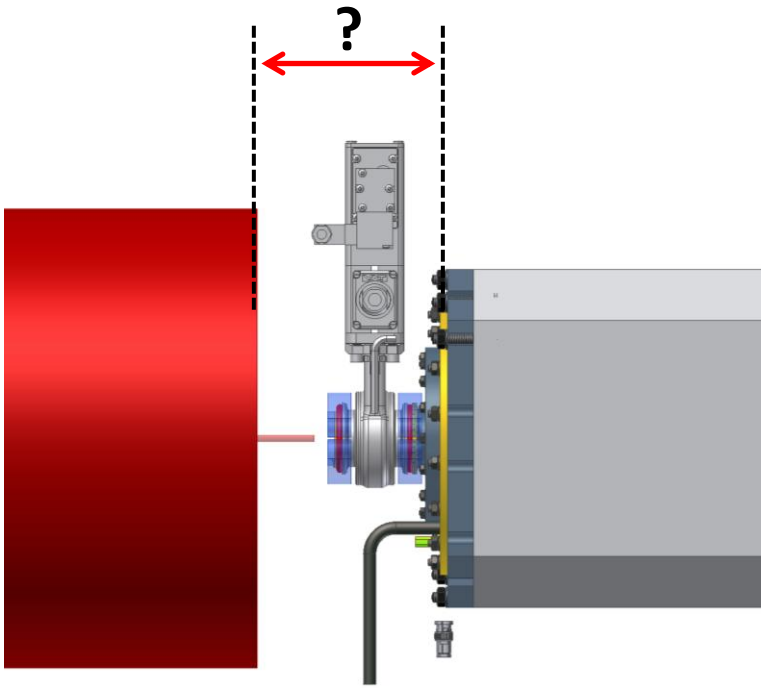
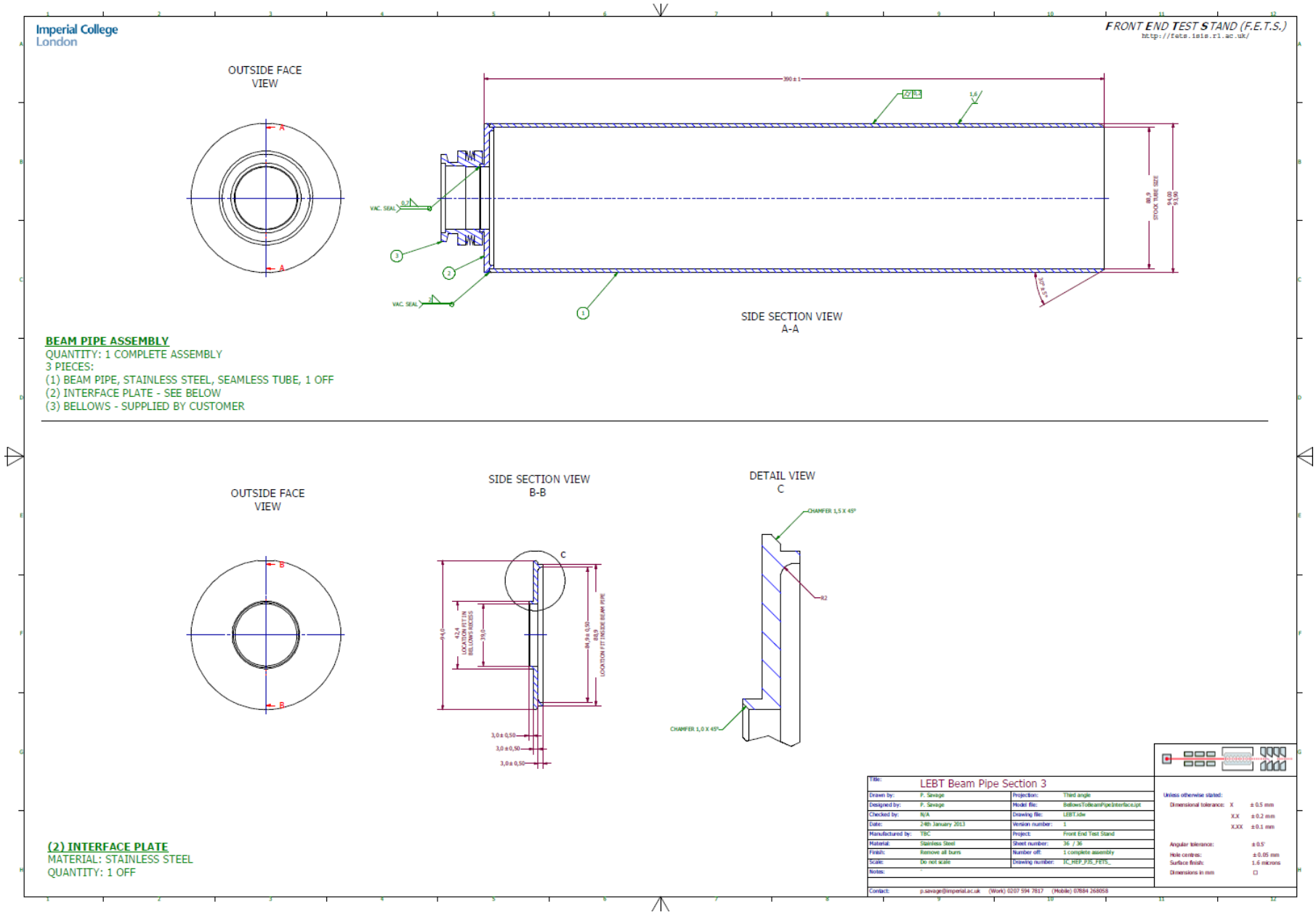
25th February 2013

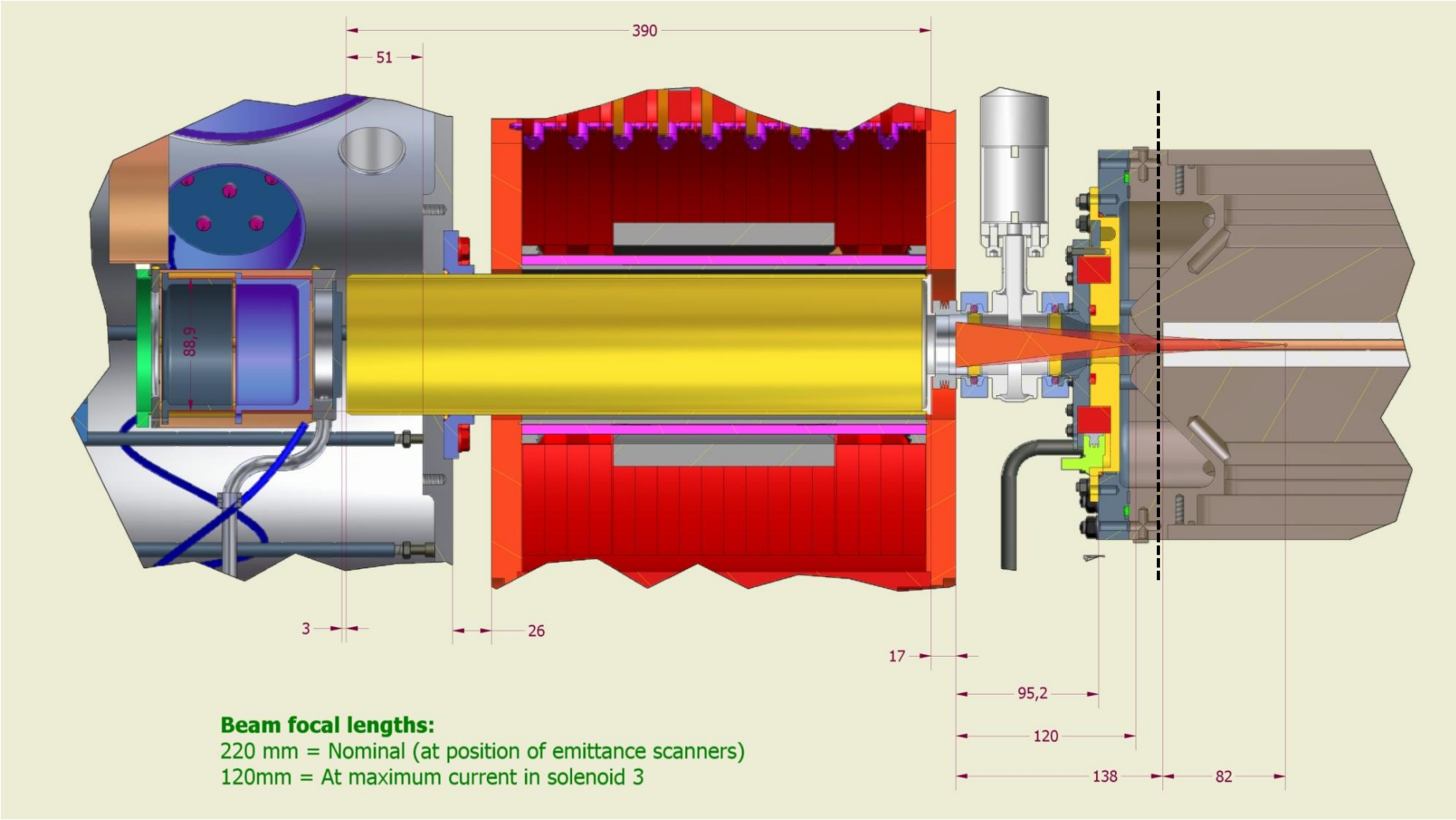


- LEBT beam pipe section 3 is being manufactured now and is due for completion before end March 2013.
- The RFQ to LEBT separation can have a range of 51mm.
- The range is provided by the repositioning of the LEBT beam pipe section 3 within the LEBT drift vessel.
- There is an additional +/- 5mm provided by the wee bellows upstream of the vacuum valve.
- Consider the 'RFQ entrance' to be at the end of the radial matcher.
- The RFQ cannot be positioned any closer to the LEBT than the position 1 shown.
- The RFQ can be as far away as you like, we just need to manufacture a longer beam pipe.
- The position range is 51mm.



LEBT beam pipe section 3 Engineering drawing

Position 1: Beam pipe section 3 fully inserted into the drift vessel.
Beam pipe section 3 is 390mm long (not including the bellows at the downstream end)
In this position the LEBT to RFQ separation = 95mm
At maximum current in solenoid 3 (focal length = 120mm) the beam focus is at 18mm Upstream of the RFQ entrance.
At nominal current in solenoid 3 (focal length = 220mm) the beam focus is at 82mm DOWNstream of the RFQ entrance.
The RFQ entrance is at the end of the radial matching section which is denoted by the dotted line.



Position 2: Beam pipe section 3 fully retracted from the drift vessel.
Beam pipe section 3 is 390mm long (not including the bellows at the downstream end)
In this position the LEBT to RFQ separation = 146mm
At maximum current in solenoid 3 (focal length = 120mm) the beam focus is at 69mm Upstream of the RFQ entrance.
At nominal current in solenoid 3 (focal length = 220mm) the beam focus is at 31mm DOWNstream of the RFQ entrance.
The RFQ entrance is at the end of the radial matching section which is denoted by the dotted line.