

Fixed Temperature Points

New Fixed Point at CCPI Europe UKAS accredited calibration Laboratory

CCPI Europe has just added another fixed point in its range of points for the calibration of high precision Platinum thermocouples. This new fixed point is the Cobalt Carbon point and has an assigned value of 1324.29°C.

For high precision thermocouple calibrations above 1000°C the only fixed points available have been, up to now, the Gold at 1064.18°C or Copper at 1084.62°C points and then a jump up to the Palladium point at 1553.5°C in air. This new Cobalt Carbon point at 1324.29°C has enabled a high accuracy fixed point to be conducted in the middle of this interpolated range and as such has increased measurement point confidence and reduced uncertainties of measurement by a significant level.

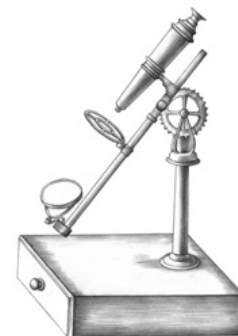
Unlike most high temperature fixed points instead of being a pure metal element the Cobalt Carbon point is a eutectic point and again unlike most fixed points is conducted on the melting phase rather than the freezing phase of the transition.

This point has been developed at the CCPI Europe laboratory in conjunction with the National Physical Laboratory (NPL), which is the UK National Standards Laboratory. Together with NPL we have enabled this newly developed fixed point technology to be transferred from the research laboratory to a practical calibration tool available to help increase the accuracy and reduce uncertainties on thermocouple calibrations for industry.

CCPI Europe has been granted UKAS accreditation for this point and has achieved a staggering $\pm 0.65\text{K}$ uncertainty of measurement at the Cobalt Carbon point. This in conjunction with the existing range of fixed points allows us to offer uncertainty of measurement on range calibrations of type R/S Primary Standard thermocouples with full UKAS certification as listed below: -

Over the range

100 to 1100°C of $\pm 0.5\text{K}$
1101 to 1350°C of $\pm 0.8\text{K}$
1351 to 1600°C of $\pm 1.7\text{K}$



The development and transfer of the Cobalt Carbon fixed point technology has enabled a significant jump in thermocouple calibration accuracy at Primary Standard level which filters down the thermocouple calibration traceability chain enabling CCPI Europe to offer even tighter uncertainty of measurements on all other calibrations for both Platinum and Base Metal thermocouples.

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