

CALIBRATION REFERENCE CYLINDERS FOR THERMAL NEEDLE PROBES TP02/TP08, TP07 AND TP09

CRC's contain traceable thermal conductivity reference materials for calibration of Non-Steady-State Probes. There are several different CRC types. The geometry of the different types is adapted to fit needles with a certain diameter.

INTRODUCTION

The heart of the CRC cylinders is a specially manufactured amorphous plastic reference material (5). Contrary to other plastics, this material does not have any directionally dependent thermal properties.

In the plastic material a hole is drilled (4), with the approximate outer dimensions (ND Needle Diameter and IL Insertion Length) of the needle that needs to be calibrated.

The plastic material is incorporated in a metal protection casing (2). A plug (7) is provided for sealing purposes.

In order to guarantee perfect contact between needle (1) and reference material (5), the metal casing is filled with a fluid, glycerol (3).

An additional hole (6) is provided in order to be able to perform checks of material stability with thin needle probes.

The user is recommended to send the CRC to Hukseflux for a check of material stability every 5 years.

MORE INFORMATION / OPTIONS

Hukseflux is a leading supplier of Non-Steady-State Probes, and is the inventor of the CRC calibration method.

NOTE: As a low-cost (lower accuracy) alternative reference material Hukseflux promotes use of glycerol filled with plastic fibre material. This is delivered as a standard with most Hukseflux systems.

CRC SERIES SPECIFICATIONS

Test method:	ASTM D 5334-00 and D 5930-97 IEEE Std 442-1981
Temperature range:	0 to 60 degrees C
Thermal conductivity of reference:	0.2 W/mK (nominal value)
Traceability:	to NPL National Physical Laboratory, United Kingdom

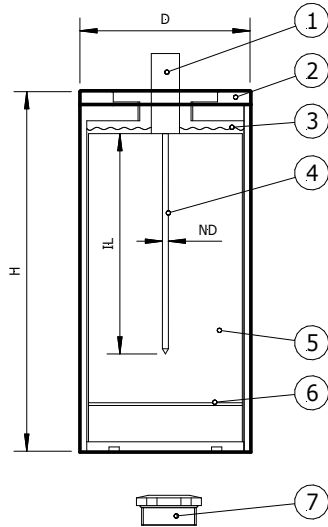


Figure 1
generalised picture of CRC Calibration Reference Cylinder. Explanation can be found under the introduction.

Type	Dimensions	Suitability for needle types
CRC01	H = 260 D = 100 IL = 185 - 30 ND = 1.6	TP02, TP08
CRC04	H = 206 D = 100 IL = 137 - 6 ND = 3.6	TP07
CRC05	H = 260 D = 100 IL = 190 - 12 ND = 6.6	TP09

Table 1
CRC cylinder types and their application