SATRA TECHNOLOGY CENTRE	**Certificate of Calibration**	Certificate Serial No:	N/A
		Date of Issue:	12/12/2017
		SATRA Registration No:	SER 2170 SER 2171 SER 2172 SER 2173
		Page 1 of 2	

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Equipment Description:	**Equipment Model Number:**	**Equipment Serial Number:**
Thermocouples	HI98804	N/A
Equipment Manufacturer:	**Calibration Procedure Used:**	**Certificate Serial Number:**
Hanna	HML05	N/A
SATRA Registration No:	**Specification / Test Method:**	**Location of Calibration:**
SER 2170, 2171, 2172 and 2173	1±0.2°C	N/A

CONCLUSIONS

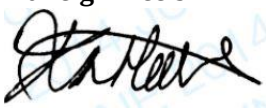
SER 2170 requires a correction of x 0.9990-1.3844
SER 2171 requires a correction of x 1.0018-1.5222
SER 2172 requires a correction of x 0.9987-1.5161
SER 2173 requires a correction of x 0.9939-1.4019

The uncertainty of measurement for the thermocouples are ± 0.35°C

The calibration results are presented on the following pages.

NOTES

This calibration certificate provides traceability of measurement to recognised national standards, and to units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories.

Calibrated By:	**Hannah Pratt**	**Authorised By:**	**Kaileigh Heels**
Signed:		**Signed:**	
Date: 6/12/2017		**Date: 12/12/2017**	

The reported uncertainties are each based on a standard uncertainty multiplied by a coverage factor *k*=2, providing a level of confidence of approximately 95%.

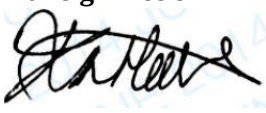
MEASURED VALUES

Reference temperature SER 1709	SER 2170	SER 2171	SER 2172	SER 2173
°C				
23.1	24.7	24.7	24.7	24.7
-23.2	-22.0	-21.8	-21.7	-21.8
68.9	70.4	70.4	70.4	70.4
150.2	151.5	151.3	151.8	152.5
200.5	202.2	201.7	202.4	203.3

slope	0.9990	1.0018	0.9987	0.9939
intercept	-1.3844	-1.5222	-1.5161	-1.4019

r^2 value	1.0000	1.0000	1.0000	1.0000

$$\text{Correction} = \text{Value} \times \text{Slope} + \text{Intercept}$$

Calibrated By:	**Hannah Pratt**	**Authorised By:**	**Kaileigh Heels**
Signed:		**Signed:**	
Date: 6/12/2017		**Date: 12/12/2017**	

The reported uncertainties are each based on a standard uncertainty multiplied by a coverage factor *k*=2, providing a level of confidence of approximately 95%.