TITLE
Project Olympus WORKING PILE TEST LOAD REPORT WTP06-No145 Asite Ref: LCY11-KTB-XX-XX-RP-C-00047 Rev: P01

Comment
Keltbray have reviewed the pile settlements in the attached report and these are in line with our design assumptions and comply with the project specification requirements

To Load

SOCOTEC UK Limited
Wass Way
Durham Lane Industrial Park
Stockton-on-Tees
TS16 0RG

Pile Load Test Report

SOC-FNDS-MLT-25-100.1

Contract Information

SOCOTEC UK Reference	FNDS-25-100	*Contract Reference*	BE0046
Client	Keltbray	*Client Contact*	Graham Smith
Client Address	St Andrew's House Portsmouth Road Esher Surrey KT10 9TA		
Site Address	54A North Woolwich Road Silvertown London E16 2AA		

Abstract

This report describes the load testing carried out by SOCOTEC UK at Project Olympus on WTP6-no145. The data presented in this report represents a summary of the measured readings due to the volume obtained. Full data records can be provided upon request.

Summary

Increment	Load (kN)	Maximum Disp. (mm)	Residual Disp. (mm)
100% DVL	2331	2.88	0.93
100% DVL + 50% F_{REP}	3489	4.10	1.28

Revision History

Revision	Report Date	Issue Date	Author	Verifier	Revision Details
1	07/05/2025	07/05/2025	VST	DM	Initial Document

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Introduction

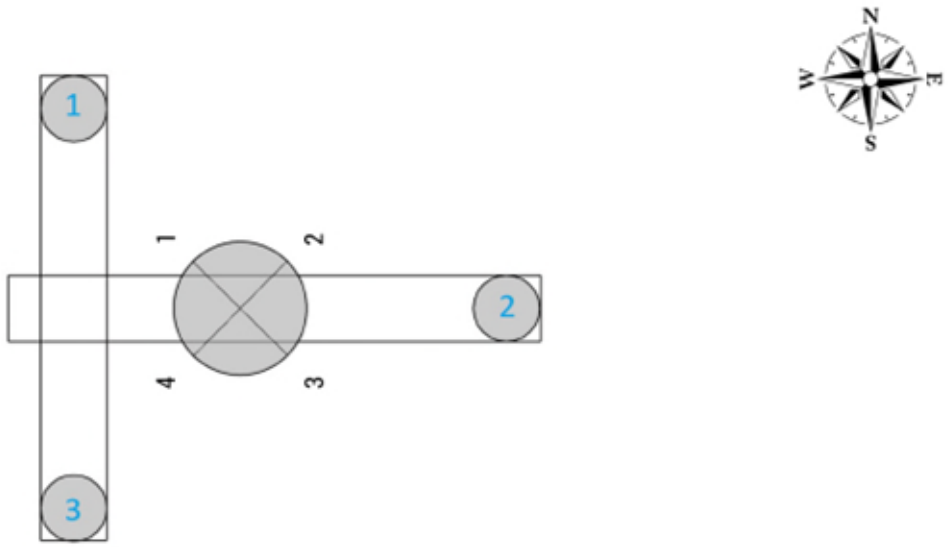
SOCOTEC UK were employed by Keltbray to undertake a Maintained Load Test at Project Olympus between the dates of 06/05/2025 and 07/05/2025. A 750 mm diameter pile designated WTP6-no145 was installed to a depth of 25.14 m by Keltbray on 23/04/2025 using a rotary bored method. The pile was tested in vertical compression to a maximum load of 3,489 kN following ICE SPERW 3rd Edition.

SOCOTEC UK utilised an S450 reaction frame built above the test pile. Load was applied to the test pile using an 8800 kN hydraulic actuator and monitored using a 7500 kN strain gauge load cell calibrated with full traceability to national standards. Load control was performed using SOCOTEC UK's automated system, which maintains the applied load within 5 kN of the target.

Instrumentation – Pile Head

Pile displacement was monitored using four linear potentiometric displacement transducers mounted on a reference frame and connected to a Campbell Scientific CR1000 data logger.

Figure 1 – Pile Head Instrumentation Layout



Testing Schedule

The test was performed as described in ICE SPERW 3rd Edition following multiple loading cycles to 100% DVL + 50% F_{REP}. The loading increments are shown in Table 1.

DVL = 2,331 kN
F_{REP} = 2,316 kN

Table 1 – Loading Increments

Increment	DVL %	F_{REP} %	Load (kN)	Minimum Hold Time (min)
1	25	0	583	30
2	50	0	1166	30
3	75	0	1748	30
4	100	0	2331	360
5	75	0	1748	10
6	50	0	1166	10
7	25	0	583	10
8	0	0	0	60
9	100	0	2331	60
10	100	25	2910	60
11	100	50	3489	360
12	100	25	2910	10
13	100	0	2331	10
14	75	0	1748	10
15	50	0	1166	10
16	25	0	583	10
17	0	0	0	60

Summary of Results – Pile Head

Table 2 – Pile Head Results Summary

Time	Increment	Load (kN)	Average Disp. (mm)	Disp. 1 (mm)	Disp. 2 (mm)	Disp. 3 (mm)	Disp. 4 (mm)	Temp. (°C)
06/05/2025 08:40	0% DVL	1	0.01	0.00	0.00	0.01	0.01	10.0
06/05/2025 08:46	25% DVL Start	580	0.39	0.36	0.35	0.40	0.45	10.1
06/05/2025 09:25	25% DVL End	581	0.59	0.58	0.57	0.58	0.65	10.5
06/05/2025 09:27	50% DVL Start	1163	0.94	0.91	0.89	0.92	1.02	10.5
06/05/2025 10:15	50% DVL End	1164	1.30	1.26	1.22	1.32	1.41	10.7
06/05/2025 10:17	75% DVL Start	1743	1.70	1.64	1.62	1.71	1.83	10.7
06/05/2025 11:20	75% DVL End	1745	1.98	1.94	1.89	1.99	2.12	11.4
06/05/2025 11:22	100% DVL Start	2327	2.45	2.40	2.36	2.45	2.60	11.5
06/05/2025 17:30	100% DVL End	2336	2.88	2.80	2.76	2.88	3.06	13.9
06/05/2025 17:30	75% DVL Start	1756	2.71	2.63	2.58	2.71	2.90	13.9
06/05/2025 17:45	75% DVL End	1753	2.64	2.57	2.52	2.65	2.84	13.9
06/05/2025 17:45	50% DVL Start	1174	2.27	2.19	2.15	2.29	2.46	13.9
06/05/2025 18:00	50% DVL End	1173	2.10	2.02	1.99	2.11	2.26	13.7
06/05/2025 18:01	25% DVL Start	591	1.65	1.58	1.55	1.68	1.81	13.6
06/05/2025 18:15	25% DVL End	591	1.58	1.50	1.48	1.60	1.73	13.4
06/05/2025 18:22	0% DVL Start	0	1.14	1.05	1.06	1.18	1.27	13.4
06/05/2025 19:30	0% DVL End	0	0.93	0.85	0.88	0.97	1.03	12.7
06/05/2025 19:40	100% DVL Start	2327	2.81	2.76	2.74	2.76	2.97	12.6
06/05/2025 20:45	100% DVL End	2330	2.92	2.88	2.86	2.86	3.08	12.2
06/05/2025 20:47	100% DVL + 25% F_{REP} Start	2906	3.30	3.26	3.24	3.25	3.46	12.1
06/05/2025 21:50	100% DVL + 25% F_{REP} End	2908	3.53	3.51	3.46	3.46	3.70	11.6

Time	Increment	Load (kN)	Average Disp. (mm)	Disp. 1 (mm)	Disp. 2 (mm)	Disp. 3 (mm)	Disp. 4 (mm)	Temp. (°C)
06/05/2025 21:53	100% DVL + 50% F_{REP} Start	3484	3.87	3.84	3.79	3.81	4.04	11.6
07/05/2025 03:55	100% DVL + 50% F_{REP} End	3487	4.10	4.08	4.02	4.03	4.26	8.2
07/05/2025 03:55	100% DVL + 25% F_{REP} Start	2917	4.03	4.07	3.93	3.93	4.18	8.2
07/05/2025 04:10	100% DVL + 25% F_{REP} End	2916	4.02	4.07	3.92	3.92	4.17	8.1
07/05/2025 04:10	100% DVL Start	2339	3.64	3.69	3.55	3.54	3.79	8.1
07/05/2025 04:25	100% DVL End	2339	3.61	3.66	3.52	3.51	3.75	8.0
07/05/2025 04:25	75% DVL Start	1756	3.14	3.19	3.06	3.05	3.27	8.0
07/05/2025 04:40	75% DVL End	1757	3.08	3.12	3.00	2.99	3.20	7.9
07/05/2025 04:41	50% DVL Start	1172	2.55	2.58	2.49	2.48	2.66	7.9
07/05/2025 04:55	50% DVL End	1173	2.46	2.48	2.40	2.40	2.57	7.9
07/05/2025 04:57	25% DVL Start	592	1.93	1.94	1.88	1.88	2.03	7.8
07/05/2025 05:10	25% DVL End	590	1.86	1.86	1.81	1.80	1.95	7.8
07/05/2025 05:20	0% DVL Start	0	1.32	1.30	1.30	1.28	1.39	7.9
07/05/2025 06:35	0% DVL End	0	1.28	1.26	1.28	1.25	1.35	11.0

Figure 2 – Load and Displacement vs. Time

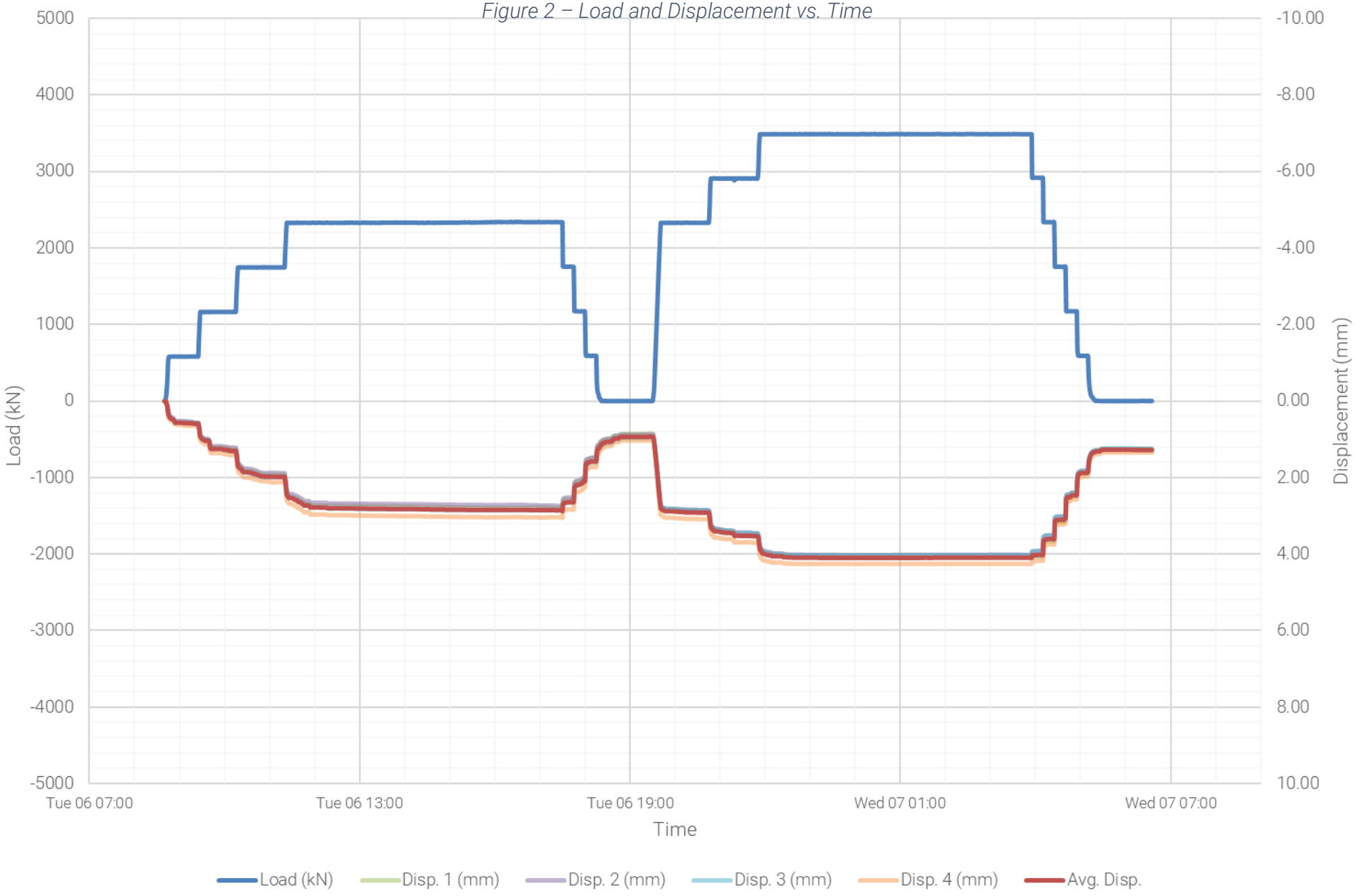
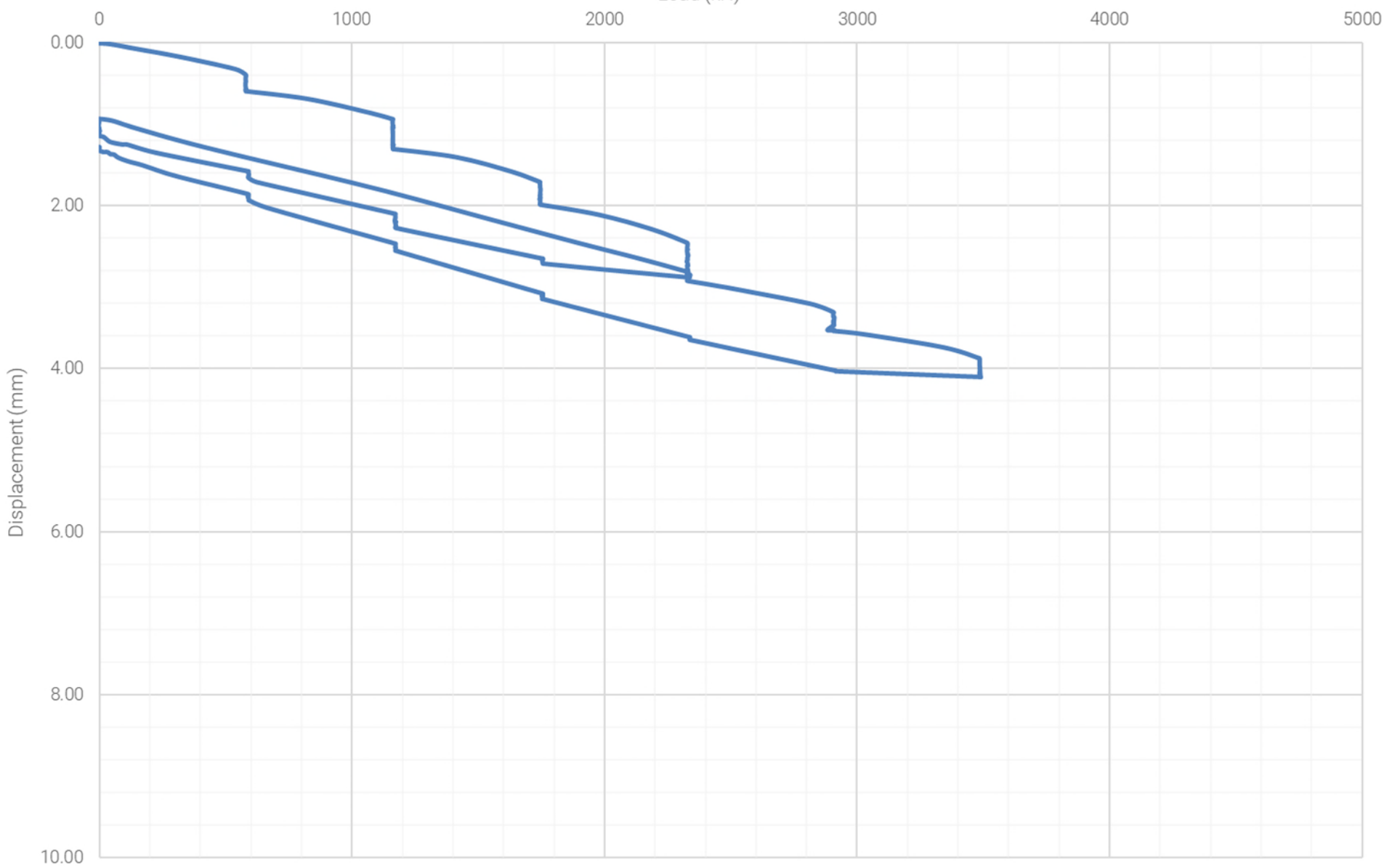


Figure 3 – Load vs. Displacement



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SOCOTEC

CALIBRATION CERTIFICATE

as per Documented In-House Technical Procedure MS90

Certificate Number: LCC-5222

Transducer Serial: PMC755 **Equipment Type:** Load Cell, Spherical Seat Platen

Digital Readout: Master Logger - Stockton **Manufacturer:** Woodland Weighing Systems

Date of Calibration: 17/04/2025 **Date of Issue:** 17/04/2025 **Valid Until:** 17/04/2026

CALIBRATION DATA

Reference Load (kN)	Indicated Load (kN) Run 1	Run 2	Run 3	Average (kN)	Uncertainty %
0	0	0	0	0	0
750	743	744	745	744	1.14
1,500	1,501	1,504	1,506	1,504	1.15
2,250	2,258	2,254	2,258	2,257	1.14
3,000	3,010	3,008	3,011	3,010	1.13
3,750	3,757	3,755	3,759	3,757	1.13
4,500	4,506	4,504	4,510	4,507	1.13
5,250	5,251	5,249	5,252	5,251	1.13
6,000	5,995	5,997	6,001	5,998	1.13
6,750	6,742	6,741	6,743	6,742	1.13
7,500	7,488	7,486	7,492	7,489	1.13
0	2	3	6	4	0

Start Temperature: 18.0°C End Temperature: 18.2°C

CALIBRATION EQUIPMENT

Reference	Serial	Description	Calib. Due
Load	PMC 1501	15 MN Master Load Cell	14/03/2027
Temperature	DT-19	Digital Thermometer	31/08/2025

FACTOR: 3499

OFFSET: 25.08

Calibrated by: Ben Mulroy

Approved by: Michael Plummer

CONTROLLED DOCUMENT PMC90T .Results relate only to the item being calibrated

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Calibration of measurement equipment is not included in the schedule of accreditation for UKAS laboratory number 0001.

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CALIBRATION CERTIFICATE

as per Documented In-House Technical Procedure MS91

Certificate Number: DTC-7384

Transducer Serial: TLP064 **Equipment Type:** Linear Potentiometric Displacement Transducer

Digital Readout: PMC1238 / 7132 **Manufacturer:** Variohm

Date of Calibration: 18/10/2024 **Date of Issue:** 18/10/2024 **Valid Until:** 18/10/2025

CALIBRATION DATA

Reference Disp.(mm)	Indicated Disp. (mm) Run 1	Run 2	Run 3	Average (mm)	Uncertainty (mm)
0.00	0.00	0.00	0.00	0.00	0.00
1.00	0.99	0.99	0.99	0.99	0.00
5.00	5.00	5.00	5.00	5.00	0.00
10.00	10.00	10.00	10.00	10.00	0.00
15.00	15.01	15.00	15.00	15.00	0.00
20.00	20.01	20.01	20.01	20.01	0.00
30.00	29.99	29.99	29.99	29.99	0.00
40.00	40.01	40.01	40.01	40.01	0.00
30.00	29.99	29.99	29.99	29.99	0.00
20.00	20.01	20.01	20.01	20.01	0.00
15.00	15.01	15.01	15.01	15.01	0.00
10.00	10.00	10.00	10.00	10.00	0.00
5.00	5.00	5.00	5.00	5.00	0.00
1.00	0.99	0.99	0.99	0.99	0.00
0.00	0.00	0.00	0.00	0.00	0.00

Start Temperature: 19.6°C End Temperature: 19.9°C

CALIBRATION EQUIPMENT

Reference	Serial	Description	Calib. Due
Displacement	M4	50 mm Digital Micrometer	27/09/2025
Temperature	70230	Digital Thermometer	28/10/2025

FACTOR: 52.0770

OFFSET: 0

Calibrated by: Stephen Williams

Approved by: Michael Plummer

CONTROLLED DOCUMENT PMC91T Results relate only to the item being calibrated

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CALIBRATION CERTIFICATE

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Certificate Number: DTC-7389

Transducer Serial: TLP100 **Equipment Type:** Linear Potentiometric Displacement Transducer

Digital Readout: PMC1238 / 7132 **Manufacturer:** Variohm

Date of Calibration: 23/10/2024 **Date of Issue:** 23/10/2024 **Valid Until:** 23/10/2025

CALIBRATION DATA

Reference Disp.(mm)	Indicated Disp. (mm) Run 1	Run 2	Run 3	Average (mm)	Uncertainty (mm)
0.00	0.00	0.00	0.00	0.00	0.00
1.00	1.02	1.02	1.02	1.02	0.00
5.00	5.08	5.08	5.08	5.08	0.00
10.00	10.09	10.10	10.10	10.10	0.00
15.00	15.10	15.10	15.10	15.10	0.00
20.00	20.06	20.06	20.06	20.06	0.00
30.00	29.94	29.94	29.94	29.94	0.00
40.00	39.88	39.88	39.88	39.88	0.00
30.00	29.94	29.94	29.94	29.94	0.00
20.00	20.06	20.06	20.06	20.06	0.00
15.00	15.10	15.10	15.10	15.10	0.00
10.00	10.10	10.10	10.10	10.10	0.00
5.00	5.08	5.08	5.08	5.08	0.00
1.00	1.02	1.02	1.02	1.02	0.00
0.00	0.00	0.00	0.00	0.00	0.00

Start Temperature: 21.3°C End Temperature: 21.2°C

CALIBRATION EQUIPMENT

Reference	Serial	Description	Calib. Due
Displacement	M4	50 mm Digital Micrometer	27/09/2025
Temperature	70230	Digital Thermometer	28/10/2025

FACTOR: 51.777

OFFSET: 0

Calibrated by: Stephen Williams

Approved by: Michael Plummer

CONTROLLED DOCUMENT PMC91T Results relate only to the item being calibrated

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CALIBRATION CERTIFICATE

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Certificate Number: DTC-7396

Transducer Serial: TLP146 **Equipment Type:** Linear Potentiometric Displacement Transducer

Digital Readout: 13653 **Manufacturer:** Variohm

Date of Calibration: 13/12/2024 **Date of Issue:** 13/12/2024 **Valid Until:** 13/12/2025

CALIBRATION DATA

Reference Disp.(mm)	Indicated Disp. (mm) Run 1	Run 2	Run 3	Average (mm)	Uncertainty (mm)
0.00	0.00	0.00	0.00	0.00	0.00
1.00	0.99	0.99	0.99	0.99	0.00
5.00	4.98	4.98	4.98	4.98	0.00
10.00	9.97	9.97	9.97	9.97	0.00
15.00	14.98	14.98	14.98	14.98	0.00
20.00	19.98	19.98	19.98	19.98	0.00
30.00	30.02	30.01	30.01	30.01	0.00
40.00	39.87	39.87	39.87	39.87	0.00
30.00	30.01	30.01	30.01	30.01	0.00
20.00	19.98	19.98	19.98	19.98	0.00
15.00	14.98	14.98	14.97	14.98	0.00
10.00	9.97	9.97	9.97	9.97	0.00
5.00	4.98	4.98	4.98	4.98	0.00
1.00	0.99	0.99	0.99	0.99	0.00
0.00	0.00	0.00	0.00	0.00	0.00

Start Temperature: 20.4°C End Temperature: 20.6°C

CALIBRATION EQUIPMENT

Reference	Serial	Description	Calib. Due
Displacement	M4	50 mm Digital Micrometer	27/09/2025
Temperature	70230	Digital Thermometer	28/10/2025

FACTOR: 51.4098

OFFSET: 0

Calibrated by: Stephen Williams

Approved by: Michael Plummer

CONTROLLED DOCUMENT PMC91T Results relate only to the item being calibrated

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CALIBRATION CERTIFICATE

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Certificate Number: DTC-7432

Transducer Serial: TLP160 **Equipment Type:** Linear Potentiometric Displacement Transducer

Digital Readout: 13653 **Manufacturer:** Variohm

Date of Calibration: 14/03/2025 **Date of Issue:** 14/03/2025 **Valid Until:** 14/03/2026

CALIBRATION DATA

Reference Disp.(mm)	Indicated Disp. (mm) Run 1	Run 2	Run 3	Average (mm)	Uncertainty (mm)
0.00	0.00	0.00	0.00	0.00	0.00
1.00	0.99	0.99	0.99	0.99	0.00
5.00	4.96	4.96	4.96	4.96	0.00
10.00	9.94	9.94	9.94	9.94	0.00
15.00	14.96	14.96	14.96	14.96	0.00
20.00	20.01	20.01	20.01	20.01	0.00
30.00	30.04	30.04	30.04	30.04	0.00
40.00	39.91	39.91	39.91	39.91	0.00
30.00	30.04	30.04	30.04	30.04	0.00
20.00	20.01	20.01	20.01	20.01	0.00
15.00	14.96	14.96	14.96	14.96	0.00
10.00	9.94	9.94	9.94	9.94	0.00
5.00	4.96	4.96	4.96	4.96	0.00
1.00	0.99	0.99	0.99	0.99	0.00
0.00	0.00	0.00	0.00	0.00	0.00

Start Temperature: 21.2°C End Temperature: 21.1°C

CALIBRATION EQUIPMENT

Reference	Serial	Description	Calib. Due
Displacement	M4	50 mm Digital Micrometer	27/09/2025
Temperature	70230	Digital Thermometer	28/10/2025

FACTOR: 51.75

OFFSET: 0

Calibrated by: Stephen Williams

Approved by: Michael Plummer

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