



海 克 斯 康
HEXAGON
MANUFACTURING INTELLIGENCE
制造智能

海克斯康影測股份有限公司

校 正 報 告

依據 **ISO 10360-2** 與 **VDI/VDE 2617** 規範

名稱：光學影像 **3D** 測量儀

機型： **OPTIV Reference 543**

序號： **220808229**

用戶單位：名頡工業股份有限公司

校正者：蓋彥汝

校正日期： **2023/11/15**

校準單位：海克斯康影測股份有限公司

報告編號： **HMV-CA20231115**

Sam Huang

報告審核人



根據校正結果，此機器符合規格要求

建議下次校正時間間格為一年

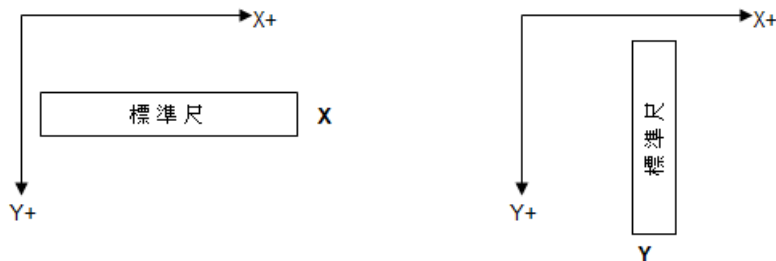


影像_校正說明

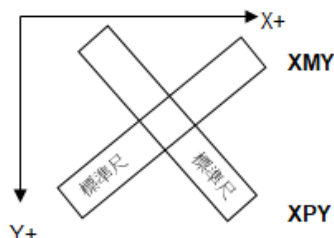
建議環境			
溫度:	22 度	相對溼度:	50%
校準使用標準器			
編號	製造商	名稱	標準件追溯報告實驗室/備註
HL-500 S/N:103859	MITUTOYO	標準尺	名頤提供

校準方法

- 1、校準標準器在現場恆溫 8 小時以上
- 2、分別將標準線紋尺放在 X 和 Y 方向，檢測範圍不小於軸向量測範圍的 66%，測量位置不少於 5 個，得到軸向 E1 示值誤差。



- 3、分別將標準線紋尺沿著對角線 45 度方向放置，檢測範圍不小於軸向量測範圍的 66%. 測量位置不少於 5 個. 得到軸向 E2 示值誤差



結論：根據檢測結果，該影像儀符合技術要求：

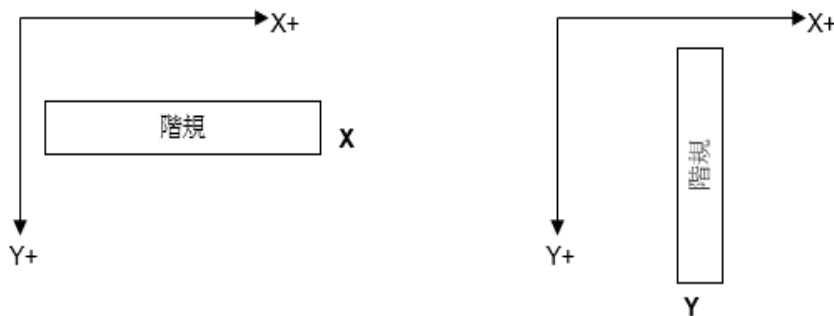
$E1=0.5+L/600$; $E2=0.8+L/600$ (單位: um, L 為 mm)

接觸式_校正說明

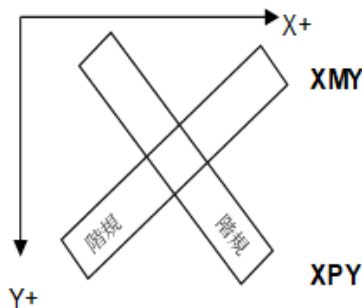
建議環境			
溫度:	22 度	相對溼度:	50%
校準使用標準器			
編號	製造商	名稱	標準件追溯報告實驗室/備註
515-714(1000008)	MITUTOYO	階規	名額提供

校準方法

- 1、校準標準器在現場恆溫 8 小時以上
- 2、分別將標準階規放在 X 和 Y 方向，檢測範圍不小於軸向量測範圍的 66%，測量位置不少於 5 個，得到軸向 E1 示值誤差。



- 3、分別將標準塊規沿著對角線 45 度方向放置，檢測範圍不小於軸向量測範圍的 66%. 測量位置不少於 5 個. 得到軸向 E2 示值誤差。



結論：根據檢測結果，該影像儀符合技術要求：

$E1=0.5+L/300$; $E2=0.8+L/300$ (單位: um, L 為 mm)

CERTIFICATE OF
CALIBRATION REPORT FOR
COORDINATE MEASURING MACHINE
 ISO 10360-2:2001 Length Measurement Error

CMM Type OPTIV Reference 543
 CMM Number 220808229
 Client Ming-Jie
 Sensor Vision / 10X lens
 Standard Glass scale 500mm
 Position 50
 Cycle 3
 MPEe-E1 0.5+L/600 µm
 Field X

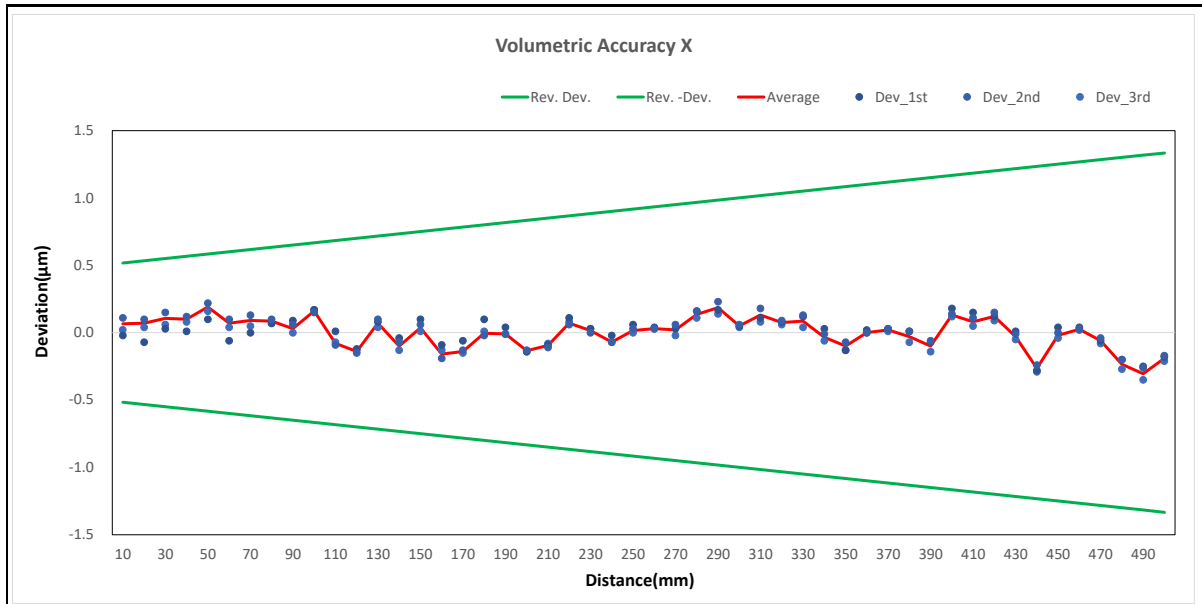


Temperature : 20.2 °C

No.	Meas. Pos.	Ref. dist.	Meas 1st	Meas 2nd	Meas 3rd	Dev 1st	Dev 2nd	Dev 3rd	Average	RI	Rev. Dev.	Rev.-Dev.	Result
1	10	10	10.0000	9.9999	10.0000	-0.02	0.11	0.02	0.06	0.13	0.5	-0.5	PASS
2	20	20	20.0001	19.9999	20.0000	-0.07	0.10	0.04	0.07	0.17	0.5	-0.5	PASS
3	30	30	30.0000	29.9999	29.9999	0.03	0.15	0.06	0.11	0.12	0.6	-0.6	PASS
4	40	40	40.0000	39.9999	39.9999	0.01	0.12	0.08	0.10	0.11	0.6	-0.6	PASS
5	50	50	49.9999	49.9998	49.9998	0.10	0.22	0.16	0.19	0.12	0.6	-0.6	PASS
6	60	60	60.0001	59.9999	60.0000	-0.06	0.10	0.04	0.07	0.16	0.6	-0.6	PASS
7	70	70	70.0000	69.9999	70.0000	0.00	0.13	0.05	0.09	0.13	0.6	-0.6	PASS
8	80	80	79.9999	79.9999	79.9999	0.07	0.10	0.07	0.08	0.03	0.6	-0.6	PASS
9	90	90	89.9999	89.9999	90.0000	0.09	0.06	0.00	0.03	0.09	0.7	-0.7	PASS
10	100	100	99.9998	99.9999	99.9998	0.17	0.15	0.17	0.16	0.02	0.7	-0.7	PASS
11	110	110	110.0000	110.0001	110.0001	0.01	-0.09	-0.07	-0.08	0.10	0.7	-0.7	PASS
12	120	120	120.0001	120.0002	120.0001	-0.12	-0.15	-0.13	-0.14	0.03	0.7	-0.7	PASS
13	130	130	129.9999	129.9999	130.0000	0.08	0.10	0.04	0.07	0.06	0.7	-0.7	PASS
14	140	140	140.0000	140.0001	140.0001	-0.04	-0.07	-0.13	-0.10	0.09	0.7	-0.7	PASS
15	150	150	149.9999	149.9999	150.0000	0.10	0.06	0.01	0.03	0.09	0.8	-0.8	PASS
16	160	160	160.0001	160.0002	160.0001	-0.09	-0.19	-0.13	-0.16	0.10	0.8	-0.8	PASS
17	170	170	170.0001	170.0001	170.0002	-0.06	-0.13	-0.15	-0.14	0.09	0.8	-0.8	PASS
18	180	180	179.9999	180.0000	180.0000	0.10	-0.02	0.01	-0.01	0.12	0.8	-0.8	PASS
19	190	190	190.0000	190.0000	190.0000	0.04	-0.01	-0.01	-0.01	0.05	0.8	-0.8	PASS
20	200	200	200.0001	200.0001	200.0001	-0.14	-0.13	-0.14	-0.14	0.01	0.8	-0.8	PASS
21	210	210	210.0001	210.0001	210.0001	-0.09	-0.11	-0.08	-0.10	0.03	0.9	-0.9	PASS
22	220	220	219.9999	219.9999	219.9999	0.11	0.06	0.08	0.07	0.05	0.9	-0.9	PASS
23	230	230	230.0000	230.0000	230.0000	0.03	0.00	0.03	0.02	0.03	0.9	-0.9	PASS
24	240	240	240.0000	240.0001	240.0001	-0.02	-0.07	-0.07	-0.07	0.05	0.9	-0.9	PASS
25	250	250	249.9999	250.0000	250.0000	0.06	0.03	0.00	0.02	0.06	0.9	-0.9	PASS
26	260	260	260.0000	260.0000	260.0000	0.04	0.03	0.03	0.03	0.01	0.9	-0.9	PASS
27	270	270	270.0000	269.9999	270.0000	0.03	0.06	-0.02	0.02	0.08	1.0	-1.0	PASS
28	280	280	279.9998	279.9998	279.9999	0.16	0.16	0.11	0.14	0.05	1.0	-1.0	PASS
29	290	290	289.9998	289.9998	289.9999	0.17	0.23	0.14	0.18	0.09	1.0	-1.0	PASS
30	300	300	300.0000	299.9999	300.0000	0.05	0.06	0.04	0.05	0.02	1.0	-1.0	PASS
31	310	310	309.9999	309.9998	309.9999	0.11	0.18	0.08	0.13	0.10	1.0	-1.0	PASS
32	320	320	319.9999	319.9999	319.9999	0.08	0.09	0.06	0.08	0.03	1.0	-1.0	PASS
33	330	330	329.9999	329.9999	330.0000	0.12	0.13	0.04	0.09	0.09	1.1	-1.1	PASS
34	340	340	340.0000	340.0000	340.0001	0.03	-0.01	-0.06	-0.03	0.09	1.1	-1.1	PASS
35	350	350	350.0001	350.0001	350.0001	-0.13	-0.07	-0.13	-0.10	0.06	1.1	-1.1	PASS
36	360	360	360.0000	360.0000	360.0000	0.02	0.00	0.00	0.00	0.02	1.1	-1.1	PASS
37	370	370	370.0000	370.0000	370.0000	0.03	0.03	0.01	0.02	0.02	1.1	-1.1	PASS
38	380	380	380.0000	380.0000	380.0001	0.01	0.01	-0.07	-0.03	0.08	1.1	-1.1	PASS
39	390	390	390.0001	390.0001	390.0001	-0.07	-0.06	-0.14	-0.10	0.08	1.2	-1.2	PASS
40	400	400	399.9998	399.9999	399.9999	0.18	0.14	0.12	0.13	0.06	1.2	-1.2	PASS
41	410	410	409.9999	409.9999	410.0000	0.15	0.11	0.05	0.08	0.10	1.2	-1.2	PASS
42	420	420	419.9999	419.9999	419.9999	0.12	0.15	0.09	0.12	0.06	1.2	-1.2	PASS
43	430	430	430.0000	430.0000	430.0001	0.01	-0.01	-0.05	-0.03	0.06	1.2	-1.2	PASS
44	440	440	440.0003	440.0002	440.0003	-0.28	-0.24	-0.29	-0.27	0.05	1.2	-1.2	PASS
45	450	450	450.0000	450.0000	450.0000	0.04	0.00	-0.04	-0.02	0.08	1.3	-1.3	PASS
46	460	460	460.0000	460.0000	460.0000	0.04	0.03	0.02	0.02	0.02	1.3	-1.3	PASS
47	470	470	470.0001	470.0000	470.0001	-0.06	-0.04	-0.08	-0.06	0.04	1.3	-1.3	PASS
48	480	480	480.0002	480.0002	480.0003	-0.20	-0.20	-0.27	-0.24	0.07	1.3	-1.3	PASS
49	490	490	490.0003	490.0003	490.0004	-0.25	-0.26	-0.35	-0.31	0.10	1.3	-1.3	PASS
50	500	500	500.0002	500.0002	500.0002	-0.18	-0.17	-0.21	-0.19	0.04	1.3	-1.3	PASS

E1-X ALL Result

PASS



服務工程師 Service Engineer:	黃彥三	日期 Date:	11/15/2023
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CERTIFICATE OF
CALIBRATION REPORT FOR
COORDINATE MEASURING MACHINE
 ISO 10360-2:2001 Length Measurement Error

CMM Type OPTIV Reference 543
 CMM Number 220808229
 Client Ming-Jie
 Sensor Vision / 10X lens
 Standard Glass scale 500mm
 Postion 40
 Cycle 3
 MPEe-E1 0.5+L/600 μm
 Field Y



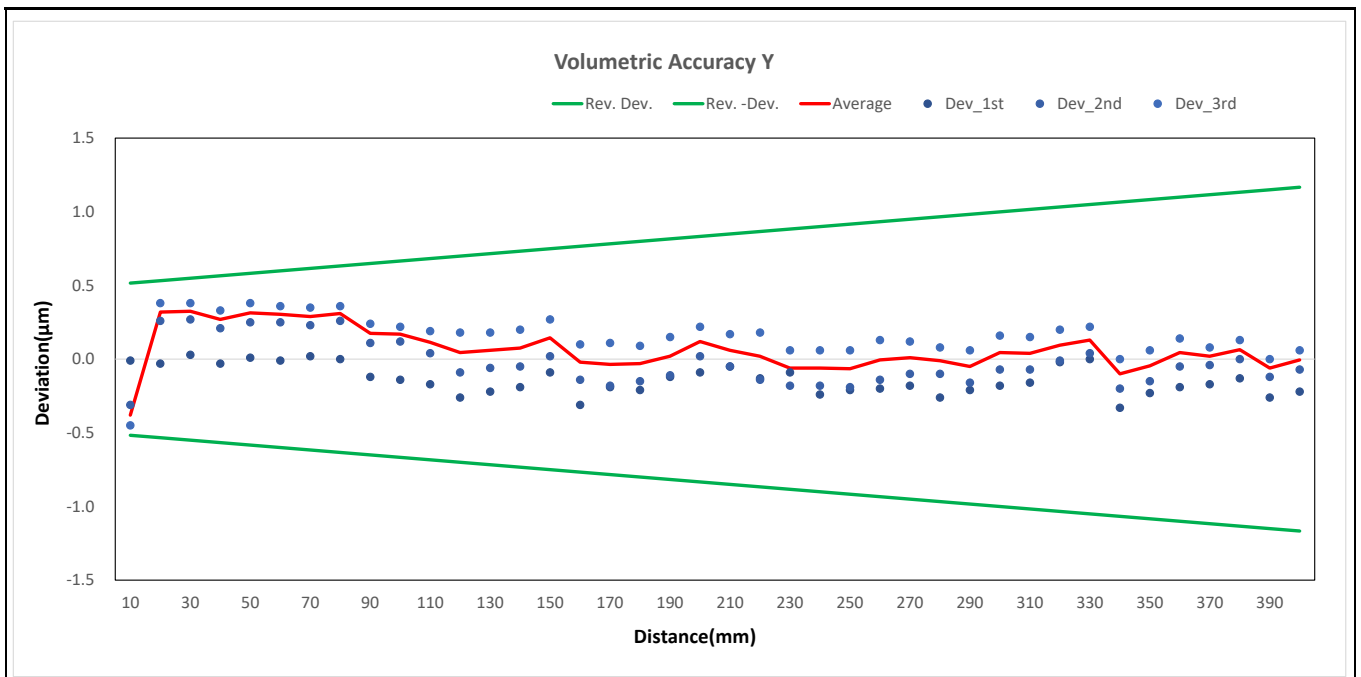
Temperature : 20.2 °C

No.	Meas. Pos.	Ref. dist.	Meas 1st	Meas 2nd	Meas 3rd	Dev 1st	Dev 2nd	Dev 3rd	Average	R1	Rev. Dev.	Rev. -Dev.	Result
1	10	10	10.0000	10.0003	10.0005	-0.01	-0.31	-0.45	-0.38	0.44	0.5	-0.5	PASS
2	20	20	20.0000	20.0003	20.0004	-0.03	0.26	0.38	0.32	0.41	0.5	-0.5	PASS
3	30	30	30.0000	30.0003	30.0004	0.03	0.27	0.38	0.33	0.35	0.6	-0.6	PASS
4	40	40	40.0000	40.0002	40.0003	-0.03	0.21	0.33	0.27	0.36	0.6	-0.6	PASS
5	50	50	50.0000	50.0003	50.0004	0.01	0.25	0.38	0.32	0.37	0.6	-0.6	PASS
6	60	60	60.0000	60.0003	60.0004	-0.01	0.25	0.36	0.31	0.37	0.6	-0.6	PASS
7	70	70	70.0000	70.0002	70.0004	0.02	0.23	0.35	0.29	0.33	0.6	-0.6	PASS
8	80	80	80.0000	80.0003	80.0004	0.00	0.26	0.36	0.31	0.36	0.6	-0.6	PASS
9	90	90	89.9999	90.0001	90.0002	-0.12	0.11	0.24	0.18	0.36	0.7	-0.7	PASS
10	100	100	99.9999	100.0001	100.0002	-0.14	0.12	0.22	0.17	0.36	0.7	-0.7	PASS
11	110	110	109.9998	110.0000	110.0002	-0.17	0.04	0.19	0.12	0.36	0.7	-0.7	PASS
12	120	120	119.9997	119.9999	120.0002	-0.26	-0.09	0.18	0.05	0.44	0.7	-0.7	PASS
13	130	130	129.9998	129.9999	130.0002	-0.22	-0.06	0.18	0.06	0.40	0.7	-0.7	PASS
14	140	140	139.9998	140.0000	140.0002	-0.19	-0.05	0.20	0.08	0.39	0.7	-0.7	PASS
15	150	150	149.9999	150.0000	150.0003	-0.09	0.02	0.27	0.15	0.36	0.8	-0.8	PASS
16	160	160	159.9997	159.9999	160.0001	-0.31	-0.14	0.10	-0.02	0.41	0.8	-0.8	PASS
17	170	170	169.9998	169.9998	170.0001	-0.19	-0.18	0.11	-0.03	0.30	0.8	-0.8	PASS
18	180	180	179.9998	179.9999	180.0001	-0.21	-0.15	0.09	-0.03	0.30	0.8	-0.8	PASS
19	190	190	189.9999	189.9999	190.0002	-0.12	-0.11	0.15	0.02	0.27	0.8	-0.8	PASS
20	200	200	199.9999	200.0000	200.0002	-0.09	0.02	0.22	0.12	0.31	0.8	-0.8	PASS
21	210	210	210.0000	210.0000	210.0002	-0.05	-0.05	0.17	0.06	0.22	0.9	-0.9	PASS
22	220	220	219.9999	219.9999	220.0002	-0.13	-0.14	0.18	0.02	0.32	0.9	-0.9	PASS
23	230	230	229.9999	229.9998	230.0001	-0.09	-0.18	0.06	-0.06	0.24	0.9	-0.9	PASS
24	240	240	239.9998	239.9998	240.0001	-0.24	-0.18	0.06	-0.06	0.30	0.9	-0.9	PASS
25	250	250	249.9998	249.9998	250.0001	-0.21	-0.19	0.06	-0.07	0.27	0.9	-0.9	PASS
26	260	260	259.9998	259.9999	260.0001	-0.20	-0.14	0.13	0.00	0.33	0.9	-0.9	PASS
27	270	270	269.9998	269.9999	270.0001	-0.18	-0.10	0.12	0.01	0.30	1.0	-1.0	PASS
28	280	280	279.9997	279.9999	280.0001	-0.26	-0.10	0.08	-0.01	0.34	1.0	-1.0	PASS
29	290	290	289.9998	289.9998	290.0001	-0.21	-0.16	0.06	-0.05	0.27	1.0	-1.0	PASS
30	300	300	299.9998	299.9999	300.0002	-0.18	-0.07	0.16	0.05	0.34	1.0	-1.0	PASS
31	310	310	309.9998	309.9999	310.0002	-0.16	-0.07	0.15	0.04	0.31	1.0	-1.0	PASS
32	320	320	320.0000	320.0000	320.0002	-0.02	-0.01	0.20	0.10	0.22	1.0	-1.0	PASS
33	330	330	330.0000	330.0000	330.0002	0.00	0.04	0.22	0.13	0.22	1.1	-1.1	PASS
34	340	340	339.9997	339.9998	340.0000	-0.33	-0.20	0.00	-0.10	0.33	1.1	-1.1	PASS
35	350	350	349.9998	349.9999	350.0001	-0.23	-0.15	0.06	-0.05	0.29	1.1	-1.1	PASS
36	360	360	359.9998	360.0000	360.0001	-0.19	-0.05	0.14	0.05	0.33	1.1	-1.1	PASS
37	370	370	369.9998	370.0000	370.0001	-0.17	-0.04	0.08	0.02	0.25	1.1	-1.1	PASS
38	380	380	379.9999	380.0000	380.0001	-0.13	0.00	0.13	0.07	0.26	1.1	-1.1	PASS
39	390	390	389.9997	389.9999	390.0000	-0.26	-0.12	0.00	-0.06	0.26	1.2	-1.2	PASS
40	400	400	399.9998	399.9999	400.0001	-0.22	-0.07	0.06	0.00	0.28	1.2	-1.2	PASS

E1-Y

ALL Result

PASS



服務工程師 Service Engineer:	黃彥三	日期 Date:	11/15/2023
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CERTIFICATE OF
CALIBRATION REPORT FOR
COORDINATE MEASURING MACHINE
 ISO 10360-2:2001 Length Measurement Error

CMM Type OPTIV Reference 543
 CMM Number 220808229
 Client Ming-Jie
 Sensor Vision / 10X lens
 Standard Glass scale 500mm
 Position 50
 Cycle 3
 MPE-E2 0.8+L/600 μm
 Field XPY



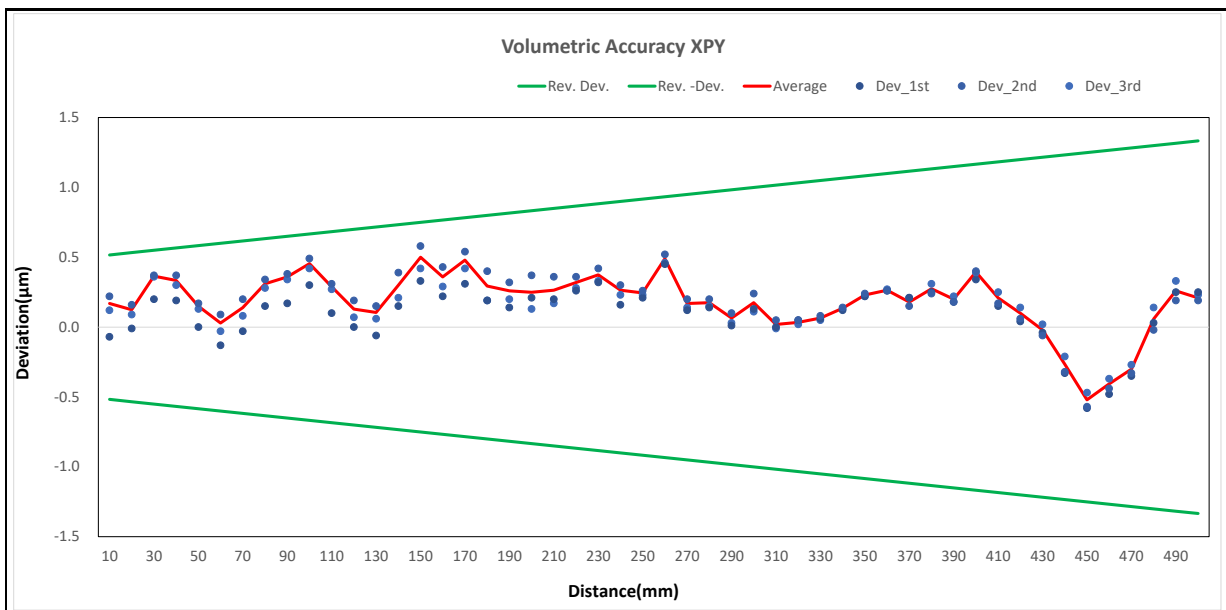
Temperature : 20.2 °C

No.	Meas. Pos.	Ref. dist.	Meas 1st	Meas 2nd	Meas 3rd	Dev 1st	Dev 2nd	Dev 3rd	Average	R1	Rev. Dev.	Rev. -Dev.	Result
1	10	10	9.9999	10.0002	10.0001	-0.07	0.22	0.12	0.17	0.29	0.5	-0.5	PASS
2	20	20	20.0000	20.0002	20.0001	-0.01	0.16	0.09	0.13	0.17	0.5	-0.5	PASS
3	30	30	30.0002	30.0004	30.0004	0.20	0.37	0.36	0.37	0.17	0.6	-0.6	PASS
4	40	40	40.0002	40.0004	40.0003	0.19	0.37	0.30	0.33	0.18	0.6	-0.6	PASS
5	50	50	50.0000	50.0002	50.0001	0.00	0.17	0.13	0.15	0.17	0.6	-0.6	PASS
6	60	60	59.9999	60.0001	60.0000	-0.13	0.09	-0.03	0.03	0.22	0.6	-0.6	PASS
7	70	70	70.0000	70.0002	70.0001	-0.03	0.20	0.08	0.14	0.23	0.6	-0.6	PASS
8	80	80	80.0002	80.0003	80.0003	0.15	0.34	0.28	0.31	0.19	0.6	-0.6	PASS
9	90	90	90.0002	90.0004	90.0003	0.17	0.38	0.34	0.36	0.21	0.7	-0.7	PASS
10	100	100	100.0003	100.0005	100.0004	0.30	0.49	0.42	0.46	0.19	0.7	-0.7	PASS
11	110	110	110.0001	110.0003	110.0003	0.10	0.31	0.27	0.29	0.21	0.7	-0.7	PASS
12	120	120	120.0000	120.0002	120.0001	0.00	0.19	0.07	0.13	0.19	0.7	-0.7	PASS
13	130	130	129.9999	130.0002	130.0001	-0.06	0.15	0.06	0.10	0.21	0.7	-0.7	PASS
14	140	140	140.0002	140.0004	140.0002	0.15	0.39	0.21	0.30	0.24	0.7	-0.7	PASS
15	150	150	150.0003	150.0006	150.0004	0.33	0.58	0.42	0.50	0.25	0.8	-0.8	PASS
16	160	160	160.0002	160.0004	160.0003	0.22	0.43	0.29	0.36	0.21	0.8	-0.8	PASS
17	170	170	170.0003	170.0005	170.0004	0.31	0.54	0.42	0.48	0.23	0.8	-0.8	PASS
18	180	180	180.0002	180.0004	180.0002	0.19	0.40	0.19	0.30	0.21	0.8	-0.8	PASS
19	190	190	190.0001	190.0003	190.0002	0.14	0.32	0.20	0.26	0.18	0.8	-0.8	PASS
20	200	200	200.0002	200.0004	200.0001	0.21	0.37	0.13	0.25	0.24	0.8	-0.8	PASS
21	210	210	210.0002	210.0004	210.0002	0.20	0.36	0.17	0.26	0.19	0.9	-0.9	PASS
22	220	220	220.0003	220.0004	220.0003	0.26	0.36	0.28	0.32	0.10	0.9	-0.9	PASS
23	230	230	230.0003	230.0004	230.0003	0.32	0.42	0.33	0.37	0.10	0.9	-0.9	PASS
24	240	240	240.0002	240.0003	240.0002	0.16	0.30	0.23	0.26	0.14	0.9	-0.9	PASS
25	250	250	250.0002	250.0003	250.0002	0.21	0.26	0.23	0.24	0.05	0.9	-0.9	PASS
26	260	260	260.0005	260.0005	260.0005	0.45	0.52	0.46	0.49	0.07	0.9	-0.9	PASS
27	270	270	270.0001	270.0002	270.0001	0.12	0.20	0.14	0.17	0.08	1.0	-1.0	PASS
28	280	280	280.0001	280.0002	280.0002	0.14	0.20	0.15	0.18	0.06	1.0	-1.0	PASS
29	290	290	290.0000	290.0001	290.0000	0.01	0.10	0.03	0.06	0.09	1.0	-1.0	PASS
30	300	300	300.0001	300.0002	300.0001	0.13	0.24	0.11	0.18	0.13	1.0	-1.0	PASS
31	310	310	310.0000	310.0001	310.0000	0.00	0.05	-0.01	0.02	0.06	1.0	-1.0	PASS
32	320	320	320.0001	320.0001	320.0000	0.05	0.05	0.02	0.03	0.03	1.0	-1.0	PASS
33	330	330	330.0001	330.0001	330.0001	0.06	0.08	0.05	0.07	0.03	1.1	-1.1	PASS
34	340	340	340.0001	340.0001	340.0001	0.12	0.14	0.13	0.14	0.02	1.1	-1.1	PASS
35	350	350	350.0002	350.0002	350.0002	0.22	0.24	0.22	0.23	0.02	1.1	-1.1	PASS
36	360	360	360.0003	360.0003	360.0003	0.26	0.26	0.27	0.27	0.01	1.1	-1.1	PASS
37	370	370	370.0002	370.0002	370.0002	0.21	0.15	0.21	0.18	0.06	1.1	-1.1	PASS
38	380	380	380.0003	380.0002	380.0003	0.25	0.24	0.31	0.28	0.07	1.1	-1.1	PASS
39	390	390	390.0002	390.0002	390.0002	0.18	0.18	0.22	0.20	0.04	1.2	-1.2	PASS
40	400	400	400.0003	400.0004	400.0004	0.34	0.40	0.39	0.39	0.06	1.2	-1.2	PASS
41	410	410	410.0002	410.0002	410.0003	0.15	0.17	0.25	0.21	0.10	1.2	-1.2	PASS
42	420	420	420.0000	420.0001	420.0001	0.04	0.06	0.14	0.10	0.10	1.2	-1.2	PASS
43	430	430	430.0000	429.9999	430.0000	-0.04	-0.06	0.02	-0.02	0.08	1.2	-1.2	PASS
44	440	440	439.9997	439.9997	439.9998	-0.33	-0.32	-0.21	-0.26	0.12	1.2	-1.2	PASS
45	450	450	449.9994	449.9994	449.9995	-0.58	-0.57	-0.47	-0.52	0.11	1.3	-1.3	PASS
46	460	460	459.9995	459.9996	459.9996	-0.48	-0.44	-0.37	-0.41	0.11	1.3	-1.3	PASS
47	470	470	469.9997	469.9997	469.9997	-0.35	-0.33	-0.27	-0.30	0.08	1.3	-1.3	PASS
48	480	480	480.0000	480.0000	480.0001	0.03	-0.02	0.14	0.06	0.16	1.3	-1.3	PASS
49	490	490	490.0003	490.0002	490.0003	0.25	0.19	0.33	0.26	0.14	1.3	-1.3	PASS
50	500	500	500.0003	500.0002	500.0002	0.25	0.19	0.23	0.21	0.06	1.3	-1.3	PASS

E2-XPY

ALL Result

PASS



服務工程師
Service Engineer:

黃彥三

日期
Date:

11/15/2023

CERTIFICATE OF
CALIBRATION REPORT FOR
COORDINATE MEASURING MACHINE
 ISO 10360-2:2001 Length Measurement Error

CMM Type OPTIV Reference 543
 CMM Number 220808229
 Client Ming-Jie
 Sensor Vision / 10X lens
 Standard Glass scale 500mm
 Position 50
 Cycle 3
 MPE-E2 0.8+L/600 μm
 Field XMY



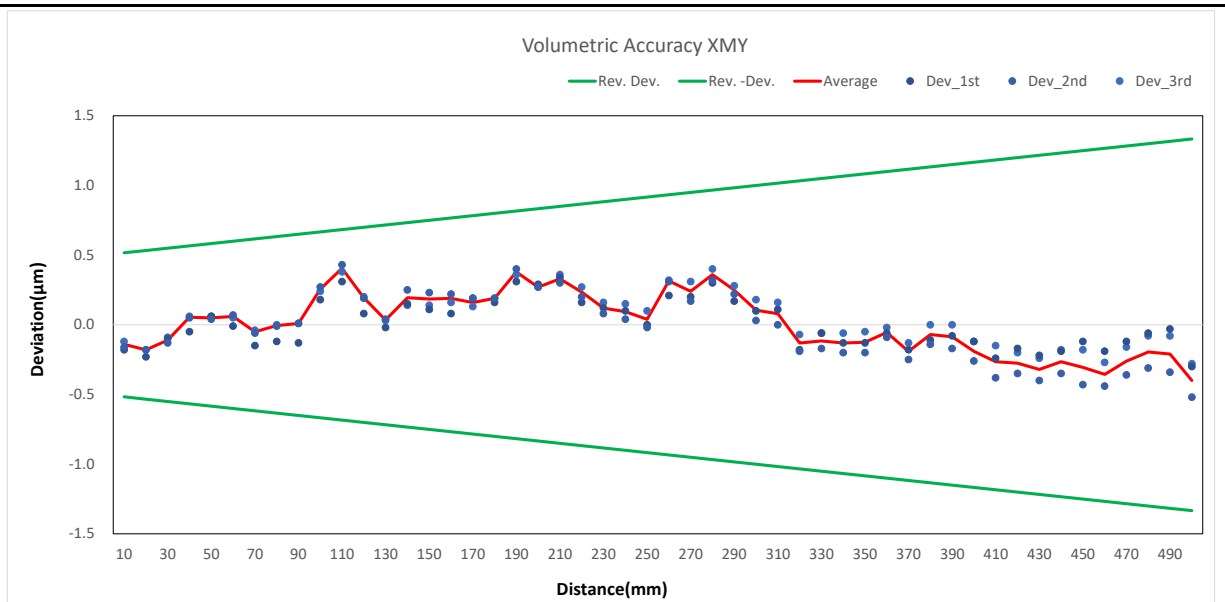
Temperature : 20.2 °C

No.	Meas. Pos.	Ref. dist.	Meas 1st	Meas 2nd	Meas 3rd	Dev 1st	Dev 2nd	Dev 3rd	Average	R1	Rev. Dev.	Rev. -Dev.	Result
1	10	10	9.9998	9.9998	9.9999	-0.18	-0.16	-0.12	-0.14	0.06	0.5	-0.5	PASS
2	20	20	19.9998	19.9998	19.9998	-0.23	-0.18	-0.18	-0.18	0.05	0.5	-0.5	PASS
3	30	30	29.9999	29.9999	29.9999	-0.10	-0.13	-0.09	-0.11	0.04	0.6	-0.6	PASS
4	40	40	40.0000	40.0001	40.0001	-0.05	0.05	0.06	0.05	0.11	0.6	-0.6	PASS
5	50	50	50.0001	50.0000	50.0001	0.06	0.04	0.06	0.05	0.02	0.6	-0.6	PASS
6	60	60	60.0000	60.0001	60.0001	-0.01	0.07	0.05	0.06	0.08	0.6	-0.6	PASS
7	70	70	69.9999	69.9999	70.0000	-0.15	-0.06	-0.04	-0.05	0.11	0.6	-0.6	PASS
8	80	80	79.9999	80.0000	80.0000	-0.12	-0.01	0.00	-0.01	0.12	0.6	-0.6	PASS
9	90	90	89.9999	90.0000	90.0000	-0.13	0.01	0.01	0.01	0.14	0.7	-0.7	PASS
10	100	100	100.0002	100.0003	100.0002	0.18	0.27	0.24	0.26	0.09	0.7	-0.7	PASS
11	110	110	110.0003	110.0004	110.0004	0.31	0.43	0.38	0.41	0.12	0.7	-0.7	PASS
12	120	120	120.0001	120.0002	120.0002	0.08	0.19	0.20	0.20	0.12	0.7	-0.7	PASS
13	130	130	130.0000	130.0000	130.0000	-0.02	0.04	0.03	0.04	0.06	0.7	-0.7	PASS
14	140	140	140.0002	140.0003	140.0001	0.15	0.25	0.14	0.19	0.11	0.7	-0.7	PASS
15	150	150	150.0001	150.0002	150.0001	0.11	0.23	0.14	0.18	0.12	0.8	-0.8	PASS
16	160	160	160.0001	160.0002	160.0002	0.08	0.22	0.16	0.19	0.14	0.8	-0.8	PASS
17	170	170	170.0002	170.0002	170.0001	0.19	0.19	0.13	0.16	0.06	0.8	-0.8	PASS
18	180	180	180.0002	180.0002	180.0002	0.16	0.19	0.19	0.19	0.03	0.8	-0.8	PASS
19	190	190	190.0003	190.0004	190.0004	0.31	0.40	0.36	0.38	0.09	0.8	-0.8	PASS
20	200	200	200.0003	200.0003	200.0003	0.29	0.27	0.27	0.27	0.02	0.8	-0.8	PASS
21	210	210	210.0003	210.0003	210.0004	0.34	0.30	0.36	0.33	0.06	0.9	-0.9	PASS
22	220	220	220.0002	220.0002	220.0003	0.16	0.20	0.27	0.24	0.11	0.9	-0.9	PASS
23	230	230	230.0001	230.0001	230.0002	0.12	0.08	0.16	0.12	0.08	0.9	-0.9	PASS
24	240	240	240.0001	240.0000	240.0002	0.10	0.04	0.15	0.10	0.11	0.9	-0.9	PASS
25	250	250	250.0000	250.0000	250.0001	0.00	-0.02	0.10	0.04	0.12	0.9	-0.9	PASS
26	260	260	260.0002	260.0003	260.0003	0.21	0.31	0.32	0.32	0.11	0.9	-0.9	PASS
27	270	270	270.0002	270.0002	270.0003	0.20	0.17	0.31	0.24	0.14	1.0	-1.0	PASS
28	280	280	280.0003	280.0003	280.0004	0.30	0.32	0.40	0.36	0.10	1.0	-1.0	PASS
29	290	290	290.0002	290.0002	290.0003	0.17	0.22	0.28	0.25	0.11	1.0	-1.0	PASS
30	300	300	300.0001	300.0000	300.0002	0.10	0.03	0.18	0.10	0.15	1.0	-1.0	PASS
31	310	310	310.0001	310.0000	310.0002	0.11	0.00	0.16	0.08	0.16	1.0	-1.0	PASS
32	320	320	319.9998	319.9998	319.9999	-0.18	-0.19	-0.07	-0.13	0.12	1.0	-1.0	PASS
33	330	330	329.9999	329.9998	329.9999	-0.06	-0.17	-0.06	-0.12	0.11	1.1	-1.1	PASS
34	340	340	339.9999	339.9998	339.9999	-0.13	-0.20	-0.06	-0.13	0.14	1.1	-1.1	PASS
35	350	350	349.9999	349.9998	350.0000	-0.13	-0.20	-0.05	-0.12	0.15	1.1	-1.1	PASS
36	360	360	359.9999	359.9999	360.0000	-0.06	-0.09	-0.02	-0.06	0.07	1.1	-1.1	PASS
37	370	370	369.9998	369.9998	369.9999	-0.18	-0.25	-0.13	-0.19	0.12	1.1	-1.1	PASS
38	380	380	379.9999	379.9999	380.0000	-0.11	-0.14	0.00	-0.07	0.14	1.1	-1.1	PASS
39	390	390	389.9999	389.9998	390.0000	-0.08	-0.17	0.00	-0.09	0.17	1.2	-1.2	PASS
40	400	400	399.9999	399.9997	399.9999	-0.12	-0.26	-0.12	-0.19	0.14	1.2	-1.2	PASS
41	410	410	409.9998	409.9996	409.9999	-0.24	-0.38	-0.15	-0.27	0.23	1.2	-1.2	PASS
42	420	420	419.9998	419.9997	419.9998	-0.17	-0.35	-0.20	-0.28	0.18	1.2	-1.2	PASS
43	430	430	429.9998	429.9996	429.9998	-0.22	-0.40	-0.24	-0.32	0.18	1.2	-1.2	PASS
44	440	440	439.9998	439.9997	439.9998	-0.19	-0.35	-0.18	-0.27	0.17	1.2	-1.2	PASS
45	450	450	449.9999	449.9996	449.9998	-0.12	-0.43	-0.18	-0.30	0.31	1.3	-1.3	PASS
46	460	460	459.9998	459.9996	459.9997	-0.19	-0.44	-0.27	-0.36	0.25	1.3	-1.3	PASS
47	470	470	469.9999	469.9996	469.9998	-0.12	-0.36	-0.16	-0.26	0.24	1.3	-1.3	PASS
48	480	480	479.9999	479.9997	479.9999	-0.06	-0.31	-0.08	-0.20	0.25	1.3	-1.3	PASS
49	490	490	490.0000	489.9997	489.9999	-0.03	-0.34	-0.08	-0.21	0.31	1.3	-1.3	PASS
50	500	500	499.9997	499.9995	499.9997	-0.30	-0.52	-0.28	-0.40	0.24	1.3	-1.3	PASS

E2-XMY

ALL Result

PASS



服務工程師
Service Engineer:

黃彥三

日期
Date:

11/15/2023

CERTIFICATE OF
CALIBRATION REPORT FOR
COORDINATE MEASURING MACHINE
 ISO 10360-2:2001 Length Measurement Error

CMM Type OPTIV Reference 543
 CMM Number 220808229
 Client Ming-Jie
 Sensor Probe / LSP-X1C
 Standard Step Gauge 450mm
 Position 45
 Cycle 3
 MPEe-EI 0.8+L/300 μm
 Field X



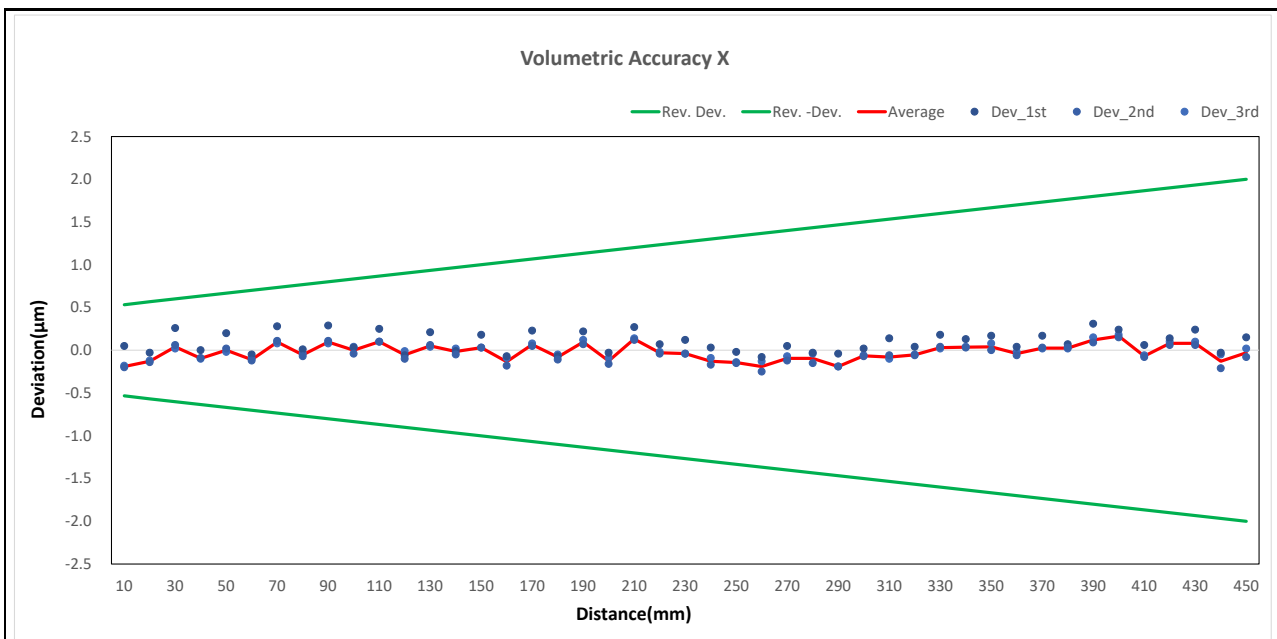
Temperature : 20.1 °C

No.	Meas. Pos.	Ref. dist.	Meas 1st	Meas 2nd	Meas 3rd	Dev 1st	Dev 2nd	Dev 3rd	Average	R1	Rev. Dev.	Rev. -Dev.	Result
1	10	10	10.0001	9.9998	9.9998	0.05	-0.20	-0.18	-0.19	0.25	0.5	-0.5	PASS
2	20	20	20.0000	19.9999	19.9999	-0.03	-0.14	-0.12	-0.13	0.11	0.6	-0.6	PASS
3	30	30	30.0003	30.0001	30.0000	0.26	0.06	0.02	0.04	0.24	0.6	-0.6	PASS
4	40	40	40.0000	39.9999	39.9999	0.00	-0.09	-0.10	-0.10	0.10	0.6	-0.6	PASS
5	50	50	50.0002	50.0000	50.0000	0.20	0.02	-0.02	0.00	0.22	0.7	-0.7	PASS
6	60	60	60.0000	59.9999	59.9999	-0.05	-0.12	-0.10	-0.11	0.07	0.7	-0.7	PASS
7	70	70	70.0003	70.0001	70.0001	0.28	0.11	0.08	0.10	0.20	0.7	-0.7	PASS
8	80	80	80.0000	79.9999	80.0000	0.01	-0.07	-0.04	-0.05	0.08	0.8	-0.8	PASS
9	90	90	90.0003	90.0001	90.0001	0.29	0.11	0.08	0.10	0.21	0.8	-0.8	PASS
10	100	100	100.0000	100.0000	100.0000	0.03	-0.04	0.04	0.00	0.08	0.8	-0.8	PASS
11	110	110	110.0003	110.0001	110.0001	0.25	0.10	0.10	0.10	0.15	0.9	-0.9	PASS
12	120	120	119.9999	119.9999	120.0000	-0.06	-0.10	-0.01	-0.06	0.09	0.9	-0.9	PASS
13	130	130	130.0002	130.0001	130.0000	0.21	0.06	0.04	0.05	0.17	0.9	-0.9	PASS
14	140	140	140.0000	140.0000	140.0000	-0.01	-0.05	0.02	-0.01	0.07	1.0	-1.0	PASS
15	150	150	150.0002	150.0000	150.0000	0.18	0.03	0.03	0.03	0.15	1.0	-1.0	PASS
16	160	160	159.9999	159.9998	159.9999	-0.07	-0.18	-0.09	-0.14	0.11	1.0	-1.0	PASS
17	170	170	170.0002	170.0001	170.0001	0.23	0.05	0.08	0.06	0.18	1.1	-1.1	PASS
18	180	180	179.9999	179.9999	180.0000	-0.07	-0.11	-0.05	-0.08	0.06	1.1	-1.1	PASS
19	190	190	190.0002	190.0001	190.0001	0.22	0.07	0.12	0.10	0.15	1.1	-1.1	PASS
20	200	200	200.0000	199.9998	199.9999	-0.03	-0.16	-0.09	-0.12	0.13	1.2	-1.2	PASS
21	210	210	210.0003	210.0001	210.0001	0.27	0.12	0.14	0.13	0.15	1.2	-1.2	PASS
22	220	220	220.0001	220.0000	220.0000	0.07	-0.04	-0.02	-0.03	0.11	1.2	-1.2	PASS
23	230	230	230.0001	230.0000	230.0000	0.12	-0.04	-0.04	-0.04	0.16	1.3	-1.3	PASS
24	240	240	240.0000	239.9998	239.9999	0.03	-0.17	-0.09	-0.13	0.20	1.3	-1.3	PASS
25	250	250	250.0000	249.9999	249.9999	-0.02	-0.15	-0.14	-0.14	0.13	1.3	-1.3	PASS
26	260	260	259.9999	259.9998	259.9999	-0.08	-0.25	-0.13	-0.19	0.17	1.4	-1.4	PASS
27	270	270	270.0001	269.9999	269.9999	0.05	-0.12	-0.07	-0.09	0.17	1.4	-1.4	PASS
28	280	280	280.0000	279.9999	280.0000	-0.03	-0.15	-0.04	-0.10	0.12	1.4	-1.4	PASS
29	290	290	290.0000	289.9998	289.9998	-0.04	-0.19	-0.19	-0.19	0.15	1.5	-1.5	PASS
30	300	300	300.0000	299.9999	299.9999	0.02	-0.07	-0.06	-0.07	0.09	1.5	-1.5	PASS
31	310	310	310.0001	309.9999	309.9999	0.14	-0.06	-0.10	-0.08	0.24	1.5	-1.5	PASS
32	320	320	320.0000	319.9999	320.0000	0.04	-0.06	-0.05	-0.06	0.10	1.6	-1.6	PASS
33	330	330	330.0002	330.0000	330.0000	0.18	0.04	0.02	0.03	0.16	1.6	-1.6	PASS
34	340	340	340.0001	340.0000	340.0000	0.13	0.03	0.04	0.03	0.10	1.6	-1.6	PASS
35	350	350	350.0002	350.0000	350.0001	0.17	0.00	0.08	0.04	0.17	1.7	-1.7	PASS
36	360	360	360.0000	359.9999	360.0000	0.04	-0.06	-0.02	-0.04	0.10	1.7	-1.7	PASS
37	370	370	370.0002	370.0000	370.0000	0.17	0.03	0.02	0.02	0.15	1.7	-1.7	PASS
38	380	380	380.0001	380.0000	380.0000	0.07	0.03	0.02	0.02	0.05	1.8	-1.8	PASS
39	390	390	390.0003	390.0001	390.0002	0.31	0.09	0.15	0.12	0.22	1.8	-1.8	PASS
40	400	400	400.0002	400.0002	400.0002	0.24	0.15	0.18	0.17	0.09	1.8	-1.8	PASS
41	410	410	410.0001	409.9999	409.9999	0.06	-0.08	-0.06	-0.07	0.14	1.9	-1.9	PASS
42	420	420	420.0001	420.0001	420.0001	0.14	0.06	0.10	0.08	0.08	1.9	-1.9	PASS
43	430	430	430.0002	430.0001	430.0001	0.24	0.06	0.10	0.08	0.18	1.9	-1.9	PASS
44	440	440	440.0000	439.9998	440.0000	-0.03	-0.21	-0.05	-0.13	0.18	2.0	-2.0	PASS
45	450	450	450.0002	449.9999	450.0000	0.15	-0.08	0.02	-0.03	0.23	2.0	-2.0	PASS

EI-X

ALL Result

PASS



服務工程師 Service Engineer:	黃彥三	日期 Date:	11/15/2023
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CERTIFICATE OF
CALIBRATION REPORT FOR
COORDINATE MEASURING MACHINE
 ISO 10360-2:2001 Length Measurement Error

CMM Type OPTIV Reference 543
 CMM Number 220808229
 Client Ming-Jie
 Sensor Probe / LSP-X1C
 Standard Step Gauge 450mm
 Position 38
 Cycle 3
 MPEe-E1 0.8+L/300 μm
 Field Y



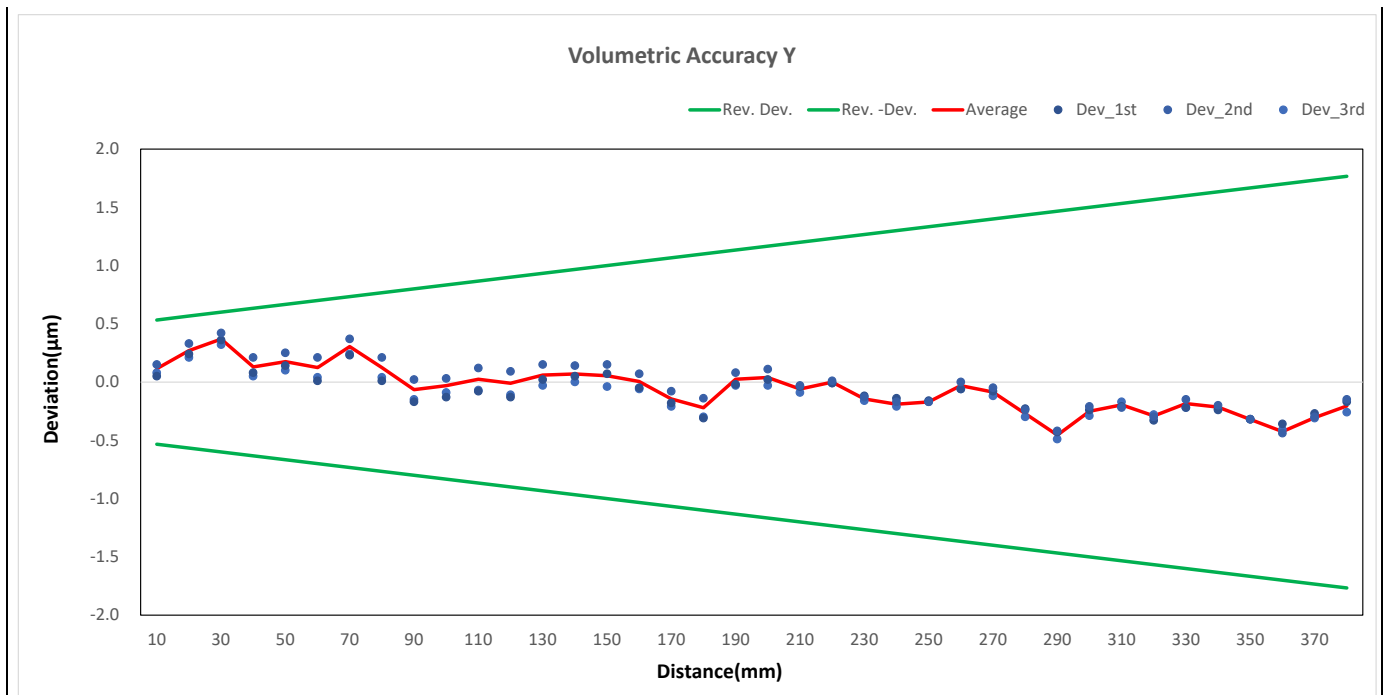
Temperature : 20.3±1 °C

No.	Meas. Pos.	Ref. dist.	Meas 1st	Meas 2nd	Meas 3rd	Dev 1st	Dev 2nd	Dev 3rd	Average	R1	Rev. Dev.	Rev. -Dev.	Result
1	10	10.0000	10.0001	10.0002	10.0001	0.05	0.15	0.08	0.12	0.10	0.5	-0.5	PASS
2	20	20.0000	20.0002	20.0003	20.0002	0.24	0.33	0.21	0.27	0.12	0.6	-0.6	PASS
3	30	30.0000	30.0004	30.0004	30.0003	0.36	0.42	0.32	0.37	0.10	0.6	-0.6	PASS
4	40	40.0000	40.0001	40.0002	40.0001	0.08	0.21	0.05	0.13	0.16	0.6	-0.6	PASS
5	50	50.0000	50.0001	50.0003	50.0001	0.14	0.25	0.10	0.18	0.15	0.7	-0.7	PASS
6	60	60.0000	60.0000	60.0002	60.0000	0.01	0.21	0.04	0.13	0.20	0.7	-0.7	PASS
7	70	70.0000	70.0002	70.0004	70.0002	0.23	0.37	0.24	0.31	0.14	0.7	-0.7	PASS
8	80	80.0000	80.0000	80.0002	80.0000	0.01	0.21	0.04	0.12	0.20	0.8	-0.8	PASS
9	90	90.0000	89.9998	90.0000	89.9999	-0.17	0.02	-0.15	-0.06	0.19	0.8	-0.8	PASS
10	100	100.0000	99.9999	100.0000	99.9999	-0.13	0.03	-0.09	-0.03	0.16	0.8	-0.8	PASS
11	110	110.0000	109.9999	110.0001	109.9999	-0.08	0.12	-0.07	0.03	0.20	0.9	-0.9	PASS
12	120	120.0000	119.9999	120.0001	119.9999	-0.13	0.09	-0.11	-0.01	0.22	0.9	-0.9	PASS
13	130	130.0000	130.0000	130.0002	130.0000	0.02	0.15	-0.03	0.06	0.18	0.9	-0.9	PASS
14	140	140.0000	140.0001	140.0001	140.0000	0.05	0.14	0.00	0.07	0.14	1.0	-1.0	PASS
15	150	150.0000	150.0001	150.0002	150.0000	0.07	0.15	-0.04	0.05	0.19	1.0	-1.0	PASS
16	160	160.0000	160.0000	160.0001	159.9999	-0.05	0.07	-0.06	0.01	0.13	1.0	-1.0	PASS
17	170	170.0000	169.9998	169.9999	169.9998	-0.18	-0.08	-0.21	-0.15	0.13	1.1	-1.1	PASS
18	180	180.0000	179.9997	179.9999	179.9997	-0.31	-0.14	-0.30	-0.22	0.17	1.1	-1.1	PASS
19	190	190.0000	190.0000	190.0001	190.0000	-0.02	0.08	-0.03	0.02	0.11	1.1	-1.1	PASS
20	200	200.0000	200.0000	200.0001	200.0000	0.02	0.11	-0.03	0.04	0.14	1.2	-1.2	PASS
21	210	210.0000	210.0000	210.0000	209.9999	-0.04	-0.03	-0.09	-0.06	0.06	1.2	-1.2	PASS
22	220	220.0000	220.0000	220.0000	220.0000	-0.01	0.01	-0.01	0.00	0.02	1.2	-1.2	PASS
23	230	230.0000	229.9999	229.9999	229.9998	-0.12	-0.13	-0.16	-0.15	0.04	1.3	-1.3	PASS
24	240	240.0000	239.9999	239.9998	239.9998	-0.14	-0.17	-0.21	-0.19	0.07	1.3	-1.3	PASS
25	250	250.0000	249.9998	249.9998	249.9998	-0.16	-0.17	-0.17	-0.17	0.01	1.3	-1.3	PASS
26	260	260.0000	259.9999	260.0000	259.9999	-0.06	0.00	-0.06	-0.03	0.06	1.4	-1.4	PASS
27	270	270.0000	269.9999	270.0000	269.9999	-0.08	-0.05	-0.12	-0.08	0.07	1.4	-1.4	PASS
28	280	280.0000	279.9998	279.9998	279.9997	-0.23	-0.24	-0.30	-0.27	0.07	1.4	-1.4	PASS
29	290	290.0000	289.9996	289.9996	289.9995	-0.43	-0.42	-0.49	-0.46	0.07	1.5	-1.5	PASS
30	300	300.0000	299.9998	299.9998	299.9997	-0.24	-0.21	-0.29	-0.25	0.08	1.5	-1.5	PASS
31	310	310.0000	309.9998	309.9998	309.9998	-0.21	-0.22	-0.17	-0.20	0.05	1.5	-1.5	PASS
32	320	320.0000	319.9997	319.9997	319.9997	-0.33	-0.30	-0.28	-0.29	0.05	1.6	-1.6	PASS
33	330	330.0000	329.9998	329.9999	329.9998	-0.22	-0.15	-0.22	-0.19	0.07	1.6	-1.6	PASS
34	340	340.0000	339.9998	339.9998	339.9998	-0.24	-0.20	-0.23	-0.21	0.04	1.6	-1.6	PASS
35	350	350.0000	349.9997	349.9997	349.9997	-0.32	-0.32	-0.32	-0.32	0.00	1.7	-1.7	PASS
36	360	360.0000	359.9996	359.9996	359.9996	-0.36	-0.44	-0.41	-0.43	0.08	1.7	-1.7	PASS
37	370	370.0000	369.9997	369.9997	369.9997	-0.27	-0.30	-0.31	-0.30	0.04	1.7	-1.7	PASS
38	380	380.0000	379.9998	379.9999	379.9997	-0.17	-0.15	-0.26	-0.21	0.11	1.8	-1.8	PASS

E1-Y

ALL Result

PASS



服務工程師 Service Engineer:	黃彥三	日期 Date:	11/15/2023
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CERTIFICATE OF
CALIBRATION REPORT FOR
COORDINATE MEASURING MACHINE
 ISO 10360-2:2001 Length Measurement Error

CMM Type OPTIV Reference 543
 CMM Number 220808229
 Client Ming-Jie
 Sensor Probe / LSP-X1C
 Standard Step Gauge 450mm
 Position 45
 Cycle 3
 MPE-E2 0.8+L/300 μm
 Field XPY



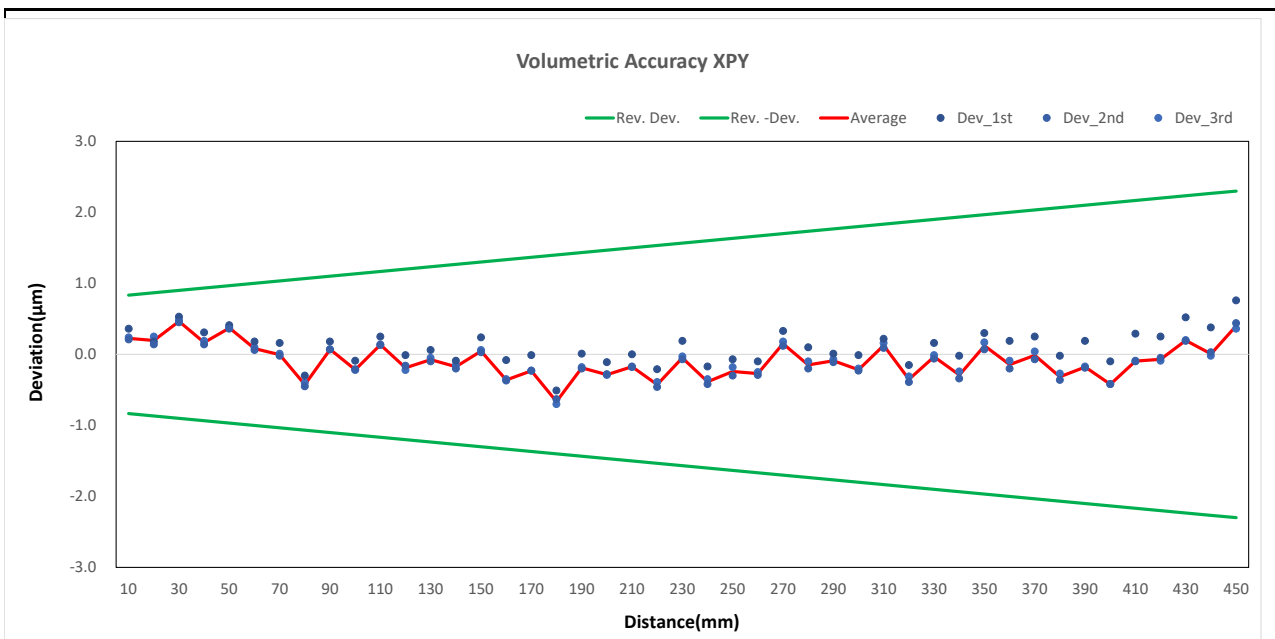
Temperature : 20.2±1 °C

No.	Meas. Pos.	Ref. dist.	Meas 1st	Meas 2nd	Meas 3rd	Dev 1st	Dev 2nd	Dev 3rd	Average	R1	Rev. Dev.	Rev. -Dev.	Result
1	10	10	10.0004	10.0002	10.0002	0.36	0.21	0.24	0.22	0.15	0.8	-0.8	PASS
2	20	20	20.0002	20.0001	20.0003	0.18	0.14	0.25	0.19	0.11	0.9	-0.9	PASS
3	30	30	30.0005	30.0005	30.0005	0.53	0.45	0.48	0.47	0.08	0.9	-0.9	PASS
4	40	40	40.0003	40.0001	40.0002	0.31	0.14	0.19	0.17	0.17	0.9	-0.9	PASS
5	50	50	50.0004	50.0004	50.0004	0.41	0.36	0.38	0.37	0.05	1.0	-1.0	PASS
6	60	60	60.0002	60.0001	60.0001	0.18	0.06	0.10	0.08	0.12	1.0	-1.0	PASS
7	70	70	70.0002	70.0000	70.0000	0.16	-0.02	0.01	-0.01	0.18	1.0	-1.0	PASS
8	80	80	79.9997	79.9996	79.9996	-0.30	-0.45	-0.40	-0.42	0.15	1.1	-1.1	PASS
9	90	90	90.0002	90.0001	90.0001	0.18	0.07	0.07	0.07	0.11	1.1	-1.1	PASS
10	100	100	99.9999	99.9998	99.9998	-0.09	-0.21	-0.22	-0.21	0.13	1.1	-1.1	PASS
11	110	110	110.0003	110.0001	110.0001	0.25	0.13	0.14	0.14	0.12	1.2	-1.2	PASS
12	120	120	120.0000	119.9998	119.9998	-0.01	-0.16	-0.22	-0.19	0.21	1.2	-1.2	PASS
13	130	130	130.0001	129.9999	130.0000	0.06	-0.10	-0.05	-0.07	0.16	1.2	-1.2	PASS
14	140	140	139.9999	139.9998	139.9999	-0.09	-0.20	-0.15	-0.17	0.11	1.3	-1.3	PASS
15	150	150	150.0002	150.0000	150.0001	0.24	0.03	0.06	0.05	0.21	1.3	-1.3	PASS
16	160	160	159.9999	159.9996	159.9997	-0.08	-0.37	-0.35	-0.36	0.29	1.3	-1.3	PASS
17	170	170	170.0000	169.9998	169.9998	-0.01	-0.23	-0.23	-0.23	0.22	1.4	-1.4	PASS
18	180	180	179.9995	179.9994	179.9993	-0.51	-0.63	-0.70	-0.66	0.19	1.4	-1.4	PASS
19	190	190	190.0000	189.9998	189.9998	0.01	-0.20	-0.18	-0.19	0.21	1.4	-1.4	PASS
20	200	200	199.9999	199.9997	199.9997	-0.11	-0.28	-0.29	-0.29	0.18	1.5	-1.5	PASS
21	210	210	210.0000	209.9998	209.9998	0.00	-0.17	-0.18	-0.17	0.18	1.5	-1.5	PASS
22	220	220	219.9998	219.9995	219.9996	-0.21	-0.46	-0.39	-0.43	0.25	1.5	-1.5	PASS
23	230	230	230.0002	229.9999	230.0000	0.19	-0.07	-0.03	-0.05	0.26	1.6	-1.6	PASS
24	240	240	239.9998	239.9996	239.9997	-0.17	-0.42	-0.35	-0.38	0.25	1.6	-1.6	PASS
25	250	250	249.9999	249.9997	249.9998	-0.07	-0.30	-0.18	-0.24	0.23	1.6	-1.6	PASS
26	260	260	259.9999	259.9997	259.9998	-0.10	-0.29	-0.25	-0.27	0.19	1.7	-1.7	PASS
27	270	270	270.0003	270.0001	270.0002	0.33	0.12	0.18	0.15	0.21	1.7	-1.7	PASS
28	280	280	280.0001	279.9998	279.9999	0.10	-0.20	-0.10	-0.15	0.30	1.7	-1.7	PASS
29	290	290	290.0000	289.9999	289.9999	0.01	-0.11	-0.07	-0.09	0.12	1.8	-1.8	PASS
30	300	300	300.0000	299.9998	299.9998	-0.01	-0.23	-0.20	-0.21	0.22	1.8	-1.8	PASS
31	310	310	310.0002	310.0001	310.0002	0.22	0.09	0.16	0.12	0.13	1.8	-1.8	PASS
32	320	320	319.9999	319.9996	319.9997	-0.15	-0.39	-0.31	-0.35	0.24	1.9	-1.9	PASS
33	330	330	330.0002	329.9999	330.0000	0.16	-0.06	-0.01	-0.03	0.22	1.9	-1.9	PASS
34	340	340	340.0000	339.9997	339.9998	-0.02	-0.34	-0.24	-0.29	0.32	1.9	-1.9	PASS
35	350	350	350.0003	350.0001	350.0002	0.30	0.07	0.17	0.12	0.23	2.0	-2.0	PASS
36	360	360	360.0002	359.9998	359.9999	0.19	-0.20	-0.09	-0.15	0.39	2.0	-2.0	PASS
37	370	370	370.0003	369.9999	370.0000	0.25	-0.07	0.04	-0.01	0.32	2.0	-2.0	PASS
38	380	380	380.0000	379.9996	379.9997	-0.02	-0.36	-0.27	-0.32	0.34	2.1	-2.1	PASS
39	390	390	390.0002	389.9998	389.9998	0.19	-0.19	-0.17	-0.18	0.38	2.1	-2.1	PASS
40	400	400	399.9999	399.9996	399.9996	-0.10	-0.42	-0.42	-0.42	0.32	2.1	-2.1	PASS
41	410	410	410.0003	409.9999	409.9999	0.29	-0.10	-0.09	-0.09	0.39	2.2	-2.2	PASS
42	420	420	420.0003	420.0000	419.9999	0.25	-0.05	-0.09	-0.07	0.34	2.2	-2.2	PASS
43	430	430	430.0005	430.0002	430.0002	0.52	0.19	0.20	0.19	0.33	2.2	-2.2	PASS
44	440	440	440.0004	440.0000	440.0000	0.38	0.03	-0.02	0.00	0.40	2.3	-2.3	PASS
45	450	450	450.0008	450.0004	450.0004	0.76	0.44	0.36	0.40	0.40	2.3	-2.3	PASS

E2-XPY

ALL Result

PASS



服務工程師 Service Engineer:	黃彥三	日期 Date:	11/15/2023
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CERTIFICATE OF
CALIBRATION REPORT FOR
COORDINATE MEASURING MACHINE

ISO 10360-2:2001 Length Measurement Error

CMM Type OPTIV Reference 543
CMM Number 220808229
Client Ming-Jie
Sensor Probe / LSP-X1C
Standard Step Gauge 450mm
Position 45
Cycle 3
MPEc-E2 0.8+L/300 μm
Field XMY



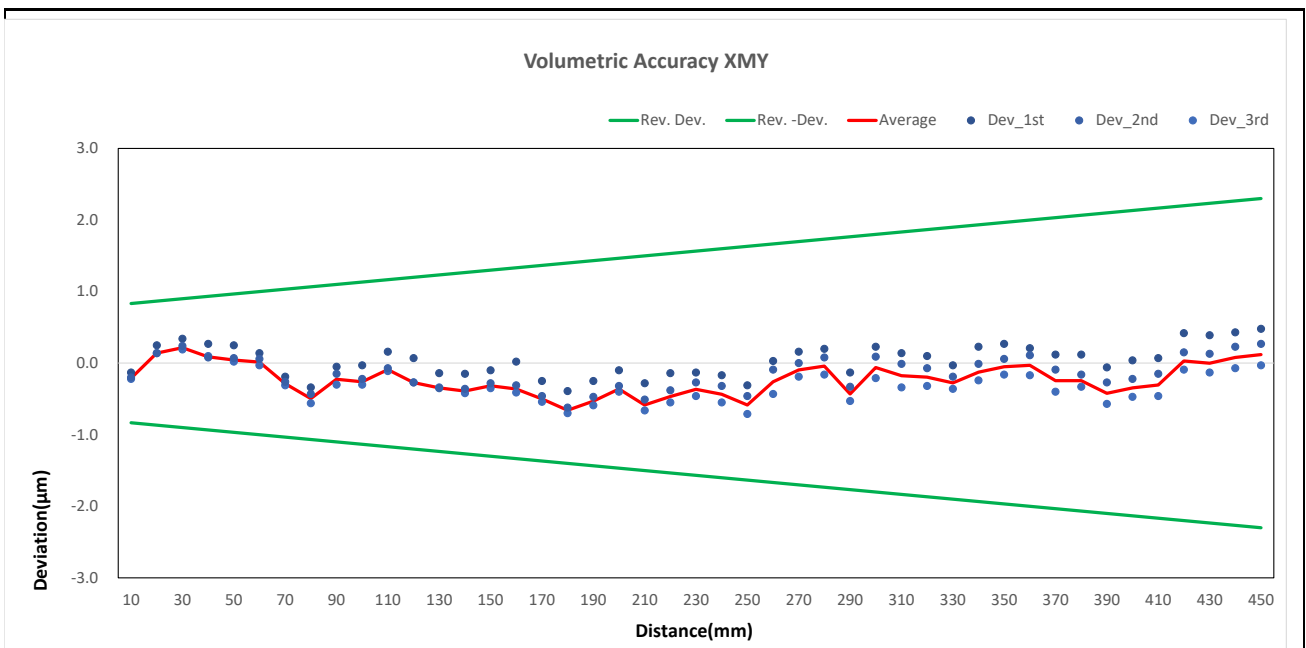
Temperature : 20.2=1 °C

No.	Meas. Pos.	Ref. dist.	Meas 1st	Meas 2nd	Meas 3rd	Dev 1st	Dev 2nd	Dev 3rd	Average	R1	Rev. Dev.	Rev. -Dev.	Result
1	10	10	9.9999	9.9998	9.9998	-0.13	-0.20	-0.22	-0.21	0.09	0.8	-0.8	PASS
2	20	20	20.0003	20.0001	20.0001	0.25	0.14	0.14	0.14	0.11	0.9	-0.9	PASS
3	30	30	30.0003	30.0002	30.0002	0.34	0.24	0.19	0.22	0.15	0.9	-0.9	PASS
4	40	40	40.0003	40.0001	40.0001	0.27	0.08	0.10	0.09	0.19	0.9	-0.9	PASS
5	50	50	50.0003	50.0001	50.0000	0.25	0.07	0.02	0.05	0.23	1.0	-1.0	PASS
6	60	60	60.0001	60.0001	60.0000	0.14	0.06	-0.03	0.01	0.17	1.0	-1.0	PASS
7	70	70	69.9998	69.9997	69.9997	-0.19	-0.26	-0.31	-0.28	0.12	1.0	-1.0	PASS
8	80	80	79.9997	79.9996	79.9994	-0.34	-0.43	-0.56	-0.49	0.22	1.1	-1.1	PASS
9	90	90	90.0000	89.9999	89.9997	-0.05	-0.15	-0.30	-0.23	0.25	1.1	-1.1	PASS
10	100	100	100.0000	99.9998	99.9997	-0.03	-0.22	-0.30	-0.26	0.27	1.1	-1.1	PASS
11	110	110	110.0002	109.9999	109.9999	0.16	-0.07	-0.11	-0.09	0.27	1.2	-1.2	PASS
12	120	120	120.0001	119.9997	119.9997	0.07	-0.27	-0.27	-0.27	0.34	1.2	-1.2	PASS
13	130	130	129.9999	129.9997	129.9997	-0.14	-0.35	-0.34	-0.34	0.21	1.2	-1.2	PASS
14	140	140	139.9999	139.9996	139.9996	-0.15	-0.36	-0.42	-0.39	0.27	1.3	-1.3	PASS
15	150	150	149.9999	149.9997	149.9997	-0.10	-0.28	-0.35	-0.32	0.25	1.3	-1.3	PASS
16	160	160	160.0000	159.9997	159.9996	0.02	-0.31	-0.41	-0.36	0.43	1.3	-1.3	PASS
17	170	170	169.9998	169.9995	169.9995	-0.25	-0.46	-0.54	-0.50	0.29	1.4	-1.4	PASS
18	180	180	179.9996	179.9994	179.9993	-0.39	-0.62	-0.70	-0.66	0.31	1.4	-1.4	PASS
19	190	190	189.9998	189.9995	189.9994	-0.25	-0.47	-0.59	-0.53	0.34	1.4	-1.4	PASS
20	200	200	199.9999	199.9997	199.9996	-0.10	-0.32	-0.40	-0.36	0.30	1.5	-1.5	PASS
21	210	210	209.9997	209.9995	209.9993	-0.28	-0.51	-0.66	-0.59	0.38	1.5	-1.5	PASS
22	220	220	219.9999	219.9996	219.9995	-0.14	-0.38	-0.55	-0.47	0.41	1.5	-1.5	PASS
23	230	230	229.9999	229.9997	229.9995	-0.13	-0.27	-0.46	-0.37	0.33	1.6	-1.6	PASS
24	240	240	239.9998	239.9997	239.9995	-0.17	-0.32	-0.55	-0.43	0.38	1.6	-1.6	PASS
25	250	250	249.9997	249.9995	249.9993	-0.31	-0.46	-0.71	-0.59	0.40	1.6	-1.6	PASS
26	260	260	260.0000	259.9999	259.9996	0.03	-0.09	-0.43	-0.26	0.46	1.7	-1.7	PASS
27	270	270	270.0002	270.0000	269.9998	0.16	0.00	-0.19	-0.09	0.35	1.7	-1.7	PASS
28	280	280	280.0002	280.0001	279.9998	0.20	0.08	-0.16	-0.04	0.36	1.7	-1.7	PASS
29	290	290	289.9999	289.9997	289.9995	-0.13	-0.33	-0.53	-0.43	0.40	1.8	-1.8	PASS
30	300	300	300.0002	300.0001	299.9998	0.23	0.09	-0.21	-0.06	0.44	1.8	-1.8	PASS
31	310	310	310.0001	310.0000	309.9997	0.14	-0.01	-0.34	-0.17	0.48	1.8	-1.8	PASS
32	320	320	320.0001	319.9999	319.9997	0.10	-0.07	-0.32	-0.19	0.42	1.9	-1.9	PASS
33	330	330	330.0000	329.9998	329.9996	-0.03	-0.19	-0.36	-0.27	0.33	1.9	-1.9	PASS
34	340	340	340.0002	340.0000	339.9998	0.23	-0.01	-0.24	-0.12	0.47	1.9	-1.9	PASS
35	350	350	350.0003	350.0001	349.9998	0.27	0.06	-0.16	-0.05	0.43	2.0	-2.0	PASS
36	360	360	360.0002	360.0001	359.9998	0.21	0.11	-0.17	-0.03	0.38	2.0	-2.0	PASS
37	370	370	370.0001	369.9999	369.9996	0.12	-0.09	-0.40	-0.25	0.52	2.0	-2.0	PASS
38	380	380	380.0001	379.9998	379.9997	0.12	-0.16	-0.33	-0.25	0.45	2.1	-2.1	PASS
39	390	390	389.9999	389.9997	389.9994	-0.06	-0.27	-0.57	-0.42	0.51	2.1	-2.1	PASS
40	400	400	400.0000	399.9998	399.9995	0.04	-0.22	-0.47	-0.35	0.51	2.1	-2.1	PASS
41	410	410	410.0001	409.9999	409.9995	0.07	-0.15	-0.46	-0.30	0.53	2.2	-2.2	PASS
42	420	420	420.0004	420.0002	419.9999	0.42	0.15	-0.09	0.03	0.51	2.2	-2.2	PASS
43	430	430	430.0004	430.0001	429.9999	0.39	0.13	-0.13	0.00	0.52	2.2	-2.2	PASS
44	440	440	440.0004	440.0002	439.9999	0.43	0.23	-0.07	0.08	0.50	2.3	-2.3	PASS
45	450	450	450.0005	450.0003	450.0000	0.48	0.27	-0.03	0.12	0.51	2.3	-2.3	PASS

E2-XMY

ALL Result

PASS



服務工程師
Service Engineer:

黃彥三

日期
Date:

11/15/2023