



CC-2102

ULR-CC210223000000886F

MA/FRM/19



TRUE COPY

MECHANICAL CALIBRATION: DIMENSION (Precision Instruments)

MIKRONIX ASSOCIATES
AURANGABAD 431 006

CALIBRATION CERTIFICATES OF
SET OF SLIP GAUGES

Calibration Date	Issued On	Certificate No.	Page	No. of Pages
17-09-2023	17-09-2023	SG 3980	1	5

Tested For : **M/s. NATIONAL CENTRE FOR QUALITY CALIBRATION.**
House No. 4, Abhishree Corporate Park, Nr. Swagat Bunglow, BRTS, Iskcon – Ambli Road, Ambli, AHMEDABAD – 380 058

Your Ref. : DC No. : 05092023/03 Date : 05-09-2023

Description & Identification of Instruments : Tungsten Carbide Slip Gauge-M88/1 Grade : K
Sr No. : 3909 Id No. : NCQC/M-108 Make : Mikronix

Coefficient of Thermal Expansion : $4.7 \times 10^{-6}/^{\circ}\text{C}$

Test Purpose : Measurements of Slip Gauges for their mean length at 20° C to IS:2984 of 2003

Environmental Conditions : Temperature 20.2 °C

Method Used : Comparison method as per MA/PCD/18.

Method Equipments Used : a) Tungsten Carbide Slip Gauge Set M122/1, GR 'K' Set Sr. No. 1212 in house calibrated traceable to CMTI B'lore vide their Certificate No 353 Dtd. 22-11-2021 valid upto 22-11-2023.
b) Electronic Gauge Block Calibrator (Model: GBC 931, Mikronix make). Sr.No- 00197, in house (CC-2102) calibrated traceable to CMTI B.lore vide Certificate No. GBC 29, Dtd. 04-05-2023 valid upto 04-05-2025.

Next Sugg. Due Date : 17-09-2025.

Uncertainty of measurement (AT 95% confidence level with coverage factor k=2) : $\pm 0.09 \mu\text{m}$ upto 25mm
 $\pm 0.10 \mu\text{m}$ above 25 mm & upto 50 mm
 $\pm 0.12 \mu\text{m}$ above 50 mm & upto 75 mm
 $\pm 0.13 \mu\text{m}$ above 75 mm & upto 100 mm

Note: The Calibration Results reported in this Certificate are valid at the time of and the stated condition of measurement.

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NCQC System Certificate No. 98

NCQC
Valid up to 17-09-2025
Reviewed *[Signature]*

ASST. QUALITY MANAGER

MIKRONIX ASSOCIATES

POST BOX NO. 726, W-10, MIDC INDUSTRIAL AREA, CHIKALTHANA, CHHATRAPATI SAMBAJINAGAR (AURANGABAD) - 431006. (M.S.) INDIA.
• Mobile : 8087798954, 9404568909. • E-mail : sales@mikronixassociates.com
• Website : www.mikronixassociates.com



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CALIBRATION RESULTS

Nominal Size in mm	Centre Dev. In μm	Extreme Deviation from Central Length Point (μm)		Variation In Length (fs) in μm
		f(o)	f(u)	
1.0005	+0.06	0.03	0.02	0.05
1.001	+0.08	0.02	0.02	0.04
1.002	+0.03	0.02	0.01	0.03
1.003	+0.08	0.02	0.00	0.02
1.004	+0.12	0.02	0.03	0.05
1.005	+0.09	0.02	0.02	0.04
1.006	+0.05	0.02	0.01	0.03
1.007	+0.02	0.03	0.02	0.05
1.008	+0.06	0.02	0.02	0.04
1.009	+0.10	0.02	0.01	0.03
1.01	+0.09	0.02	0.00	0.02
1.02	-0.04	0.03	0.02	0.05
1.03	+0.10	0.02	0.02	0.04
1.04	+0.11	0.02	0.01	0.03
1.05	+0.12	0.03	0.02	0.05
1.06	+0.09	0.02	0.02	0.04
1.07	+0.11	0.02	0.01	0.03
1.08	+0.09	0.02	0.03	0.05
1.09	+0.10	0.02	0.02	0.04
1.10	+0.09	0.03	0.02	0.05
1.11	+0.12	0.03	0.02	0.05
1.12	+0.06	0.02	0.02	0.04
1.13	+0.12	0.02	0.01	0.03
1.14	+0.11	0.02	0.01	0.03
1.15	+0.10	0.02	0.02	0.04

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CALIBRATION RESULTS

Nominal Size in mm	Centre Dev. In μm	Extreme Deviation from Central Length Point (μm)		Variation In Length (fs) in μm
		f(o)	f(u)	
1.16	+0.05	0.03	0.02	0.05
1.17	+0.10	0.03	0.02	0.05
1.18	+0.11	0.02	0.02	0.04
1.19	+0.07	0.02	0.01	0.03
1.20	+0.10	0.03	0.02	0.05
1.21	+0.11	0.02	0.10	0.12
1.22	+0.12	0.02	0.01	0.03
1.23	+0.10	0.02	0.03	0.05
1.24	+0.09	0.02	0.02	0.04
1.25	+0.12	0.02	0.03	0.05
1.26	+0.10	0.02	0.02	0.04
1.27	+0.10	0.02	0.03	0.05
1.28	+0.08	0.02	0.01	0.03
1.29	+0.10	0.03	0.02	0.05
1.30	+0.09	0.02	0.02	0.04
1.31	+0.10	0.02	0.01	0.03
1.32	+0.08	0.02	0.00	0.02
1.33	+0.09	0.03	0.02	0.05
1.34	+0.03	0.02	0.02	0.04
1.35	+0.10	0.03	0.02	0.05
1.36	+0.12	0.02	0.02	0.04
1.37	+0.11	0.03	0.02	0.05
1.38	+0.14	0.02	0.02	0.04
1.39	+0.08	0.03	0.02	0.05
1.40	+0.07	0.02	0.02	0.04

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Nominal Size in mm	Centre Dev. In μm	Extreme Deviation from Central Length Point (μm)		Variation In Length (fs) in μm
		f(o)	f(u)	
1.41	+0.15	0.02	0.01	0.03
1.42	+0.12	0.03	0.02	0.05
1.43	-0.02	0.02	0.02	0.04
1.44	+0.07	0.02	0.01	0.03
1.45	+0.10	0.03	0.02	0.05
1.46	+0.12	0.02	0.03	0.05
1.47	+0.08	0.02	0.02	0.04
1.48	+0.05	0.02	0.01	0.03
1.49	+0.12	0.03	0.02	0.05
0.50	+0.08	0.02	0.02	0.04
1.00	-0.10	0.03	0.02	0.05
1.50	+0.03	0.02	0.02	0.04
2.00	+0.06	0.03	0.02	0.05
2.50	+0.10	0.02	0.01	0.03
3.00	+0.07	0.02	0.02	0.04
3.50	+0.09	0.03	0.02	0.05
4.00	+0.02	0.03	0.02	0.05
4.50	+0.10	0.02	0.02	0.04
5.00	+0.04	0.02	0.01	0.03
5.50	+0.07	0.03	0.02	0.05
6.00	+0.06	0.02	0.02	0.04
6.50	+0.04	0.02	0.01	0.03
7.00	+0.12	0.02	0.03	0.05
7.50	+0.03	0.02	0.02	0.04
8.00	+0.02	0.02	0.01	0.03

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CALIBRATION RESULTS

Nominal Size in mm	Centre Dev. In μm	Extreme Deviation from Central Length Point (μm)		Variation In Length (fs) in μm
		f(o)	f(u)	
8.50	+0.10	0.03	0.02	0.05
9.00	0.00	0.02	0.02	0.04
9.50	+0.06	0.03	0.02	0.05
10.00	+0.11	0.02	0.02	0.04
20.00	+0.05	0.02	0.01	0.03
30.00	+0.12	0.03	0.02	0.05
40.00	+0.10	0.03	0.02	0.05
50.00	+0.05	0.02	0.02	0.04
60.00	+0.08	0.02	0.01	0.03
70.00	+0.14	0.03	0.02	0.05
80.00	+0.09	0.02	0.01	0.03
90.00	+0.04	0.03	0.02	0.05
100.00	+0.10	0.02	0.02	0.04

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