



NABL ACCREDITATION  
CERTIFICATE No.: CC-2323



Reference Precision Instruments

www.kcpindia.com

CALIBRATION CERTIFICATE OF GAUGE BLOCK	CALIBRATION CERTIFICATE NO. KCP/01/20~21/1732.	
	ULR NO: CC2323 20 0 00003742 F	
DATE OF CALIBRATION: 10-08-2020	PAGE: 1 of 3	NO. OF PAGES: 3

NAME & ADDRESS OF THE CUSTOMER : **M/s. METRIC MEASUREMENT TECHNOLOGIES.**  
38, Spartan Avenue Thiruvalluvar Nagar, Mogappair  
**CHENNAI – 600 037.**

CUSTOMER'S REFERENCE : DC. No: 79.  
DATE OF RECEIPT : 30-07-2020

ITEM FOR CALIBRATION : TUNGSTEN CARBIDE GAUGE BLOCK SET  
Type: M-13, Grade: '0',  
Sr. No: 604, ID. No.: MMT-RS-17 Make: ---,

CONDITION OF ITEM : OK

LAB WORK ORDER NO. : 20-21/095.  
CALIBRATION PROCEDURE : Determination of center deviation & parallelism  
Of gauge block by comparison method as per  
Procedure No. KCP/PCD/07-01 & as per IS 2984:2003

EQUIPMENTS / REFERENCE : Used standards are traceable to National standards  
CALIBRATION STANDARDS (direct/thro' NABL accredited Lab.)

Sr. No.	Type of Master equipments	I.D. No.	Calibration Report No.	Valid Up to
1.	Gauge Block set, M122/1, Gr. 'K' Material: Carbide, $\alpha = 4.7 \times 10^{-6} / ^\circ \text{C}$	110	18/53/01/352-L/3/129	27-11-2020
2.	Gauge Block Comparator	991	KCP/04/19~20/3840	12-09-2021

ENVIRONMENTAL CONDITION :  $20^\circ \pm 1^\circ \text{C}$

UNCERTAINTY OF MEASUREMENT :  $\pm 0.08 \mu\text{m}$  for 0.5 to 25 mm length  
 $\pm 0.10 \mu\text{m}$  for 25 to 100 mm length

The Uncertainty stated is the expanded uncertainty of measurement obtained by multiplying the standard uncertainty by the coverage factor  $K=2$  corresponds to confidence level of 95.45%.

**Note:**

- 'ln' = Nominal length, 'lc' = Central length
- $\alpha$  = Coefficient of Thermal Expansion ( $\alpha = 4.7 \times 10^{-6} / ^\circ \text{C}$ )

**NEXT CALIBRATION DUE DATE : 10-08-2022.**

**NOTE:** Next calibration date (2 years) mentioned in the certificate is given as per customer's request.

<b>CALIBRATED BY</b>  <b>V.V.SIMANT</b> <b>(Quality Inspector)</b>	 <b>AUTHORISED SIGNATORY</b>  <b>T.V.JAMKHEDKAR</b> <b>(Technical Manager)</b>
<ul style="list-style-type: none"> <li>• This certificate refers only to the particular item(s) submitted for calibration.</li> <li>• The calibration results reported in this certificate are valid at the time of &amp; under the stated condition of measurement.</li> <li>• This certificate shall not be reproduced except in full, unless written permission of Quality Manager (Calibration Lab)</li> </ul>	





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### **CALIBRATION RESULTS**

**ITEM FOR CALIBRATION:** Tungsten Carbide Gauge Block Set (MIC Check Set)

**TYPE:** M-13

**LAB WORK ORDER NO:** 20-21/095.

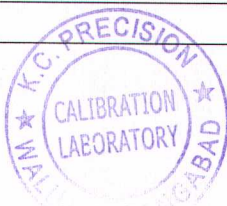
**Sr. No:** 604, ID. No.: MMT-RS-17

**MAKE:** ---.

Nominal Length (ln) 'mm'	Dev. of central Length from Nominal Length (lc-ln) 'µm'	Extreme Deviation from central length 'µm'	
		fo (+ve)	fu (- ve)
2.5	-0.22	0.30	0.00
5.1	+0.08	0.01	0.04
7.7	-0.05	0.06	0.00
10.3	-0.09	0.07	0.00
12.9	-0.08	0.10	0.00
15.0	+0.03	0.06	0.01
17.6	-0.10	0.09	0.00
20.2	+0.04	0.05	0.00
22.8	-0.29	0.21	0.00
25.0	-0.90	0.32	0.00
50.0	-0.35	0.24	0.00
75.0	-0.94	0.89	0.00
100.0	+0.09	0.14	0.04

**CALIBRATED BY**

**V.V.SIMANT**  
(Quality Inspector)



**AUTHORISED SIGNATORY**

**T.V.JAMKHEDKAR**  
(Technical Manager)

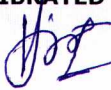
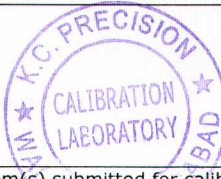
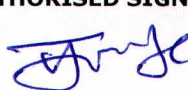
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DATE OF CALIBRATION: 10-08-2020	PAGE: 03 of 03	No. Of Pages: 03

Specifications as per IS 2984 (2003) and ISO 3650 (1998):-

Nominal length $l_n$  mm	Calibration Grade K		Grade 0		Grade 1		Grade 2	
	limit deviation of length at any point from nominal length $\pm t_e$ $\mu m$	tolerance for the variation in length  $t_v$ $\mu m$	limit deviation of length at any point from nominal length $\pm t_e$ $\mu m$	tolerance for the variation in length  $t_v$ $\mu m$	limit deviation of length at any point from nominal length $\pm t_e$ $\mu m$	tolerance for the variation in length  $t_v$ $\mu m$	limit deviation of length at any point from nominal length $\pm t_e$ $\mu m$	tolerance for the variation in length  $t_v$ $\mu m$
$0.5 \leq l_n \leq 10$	0.2	0.05	0.12	0.1	0.2	0.16	0.45	0.3
$10 < l_n \leq 25$	0.3	0.05	0.14	0.1	0.3	0.16	0.6	0.3
$25 < l_n \leq 50$	0.4	0.06	0.2	0.1	0.4	0.18	0.8	0.3
$50 < l_n \leq 75$	0.5	0.06	0.25	0.12	0.5	0.18	1	0.35
$75 < l_n \leq 100$	0.6	0.07	0.3	0.12	0.6	0.2	1.2	0.35
$100 < l_n \leq 150$	0.8	0.08	0.4	0.14	0.8	0.2	1.6	0.4
$150 < l_n \leq 200$	1	0.09	0.5	0.16	1	0.25	2	0.4
$200 < l_n \leq 250$	1.2	0.1	0.6	0.16	1.2	0.25	2.4	0.45
$250 < l_n \leq 300$	1.4	0.1	0.7	0.18	1.4	0.25	2.8	0.5
$300 < l_n \leq 400$	1.8	0.12	0.9	0.2	1.8	0.3	3.6	0.5
$400 < l_n \leq 500$	2.2	0.14	1.1	0.25	2.2	0.35	4.4	0.6
$500 < l_n \leq 600$	2.6	0.16	1.3	0.25	2.6	0.4	5	0.7
$600 < l_n \leq 700$	3	0.18	1.5	0.3	3	0.45	6	0.7
$700 < l_n \leq 800$	3.4	0.2	1.7	0.3	3.4	0.5	6.5	0.8
$800 < l_n \leq 900$	3.8	0.2	1.9	0.35	3.8	0.5	7.5	0.9
$900 < l_n \leq 1000$	4.2	0.25	2	0.4	4.2	0.6	8	1

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