

EVALUATION OF MEASUREMENT UNCERTAINTY

1. COMPANY NAME : Super Auto Forge Private Limited DATE : 22-02-2024

2. DEVICE UNDER CALIBRATION : hhu

Range/Size (mm) : 42	Least Count (mm) : 52
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3. STANDARDS / EQUIPMENT USED FOR CALIBRATION :

Sr.No	Master Name	Range/Size (mm)	L.C. (mm)	Uncertainty (mm)	Accuracy (mm)	Material
Master 1	Microhite - I-Test	0-600	0.0001	58	76	Carbide

4. ENVIRONMENTAL PARAMETERS

Start Temp T1 (°C)	End Temp T2 (°C)	Mean Temp (TA= (T1+T2)/2)	Ref. Temp (TR)	Thermal Expansion of master (mm/m°C)(αM)	Thermal Expansion of DUC (mm/m°C)(αD)	Uncertainty of Temperature Indicator (°C) UT (±)
42	36	39.00	5	0.0047	0.0047	75

5. REPEATABILITY (mm)

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	Standard Deviation	n
12	36	5	9	6	9	6	9	0	65	19.8329	10

6. UNCERTAINTY BUDGET

Source of uncertainty Xi		Estimates (xi)	Probability Distribution	Type	Factor (x)	Standard Uncertainty u = (xi / x)	Sensitivity Coefficient (y)	Uncertainty contribution ui = (x * y)	Degree of freedom vi = (n - 1)
U1	Uncertainty due to Calibration of Master 1 mentioned in the certificate	12.0000	Normal	Type B	2	6.0000	1	6.0000	∞
U2	Uncertainty due to Calibration of Master 2 mentioned in the certificate		Normal	Type B	2		1		∞
U3	Uncertainty due to Calibration of Master 3 mentioned in the certificate		Rect	Type B	√3		1		∞
U4	Uncertainty due to accuracy of Master 1	36.0000	Rect	Type B	√3	20.7846	1	20.7846	∞

Combined Uncertainty (Uc) : 21.6333 mm

Coverge Factor (k) : -

Degree of freedom (veff): -

Expanded Uncertainty (U): ± 0.0000 mm

Metric Metric
Prepared By