



DH-BUDENBERG DEAD-WEIGHT TESTER

MODEL No.: CPB5800
 TESTER SERIAL No.: 31383
 PISTON UNIT No.: 279M
 NOMINAL AREA: 1/8 in²/1/80 in²

The calibration of this piston unit has been carried out against piston unit Nos. 687F & 0101, which are traceable to National Standards through UKAS Certificate Numbers 11517 and 11566 Lab. Ref. 0138.

We are able to certify that the effective area of 279M, at 20 °C, is as shown in the table below:-

PRESSURE P_n (Pascal)	AREA A_n (m ²)
28 x 10 ⁵ (Low range)	8.06450 x 10 ⁻⁵
360 x 10 ⁵ (High range)	8.06450 x 10 ⁻⁶

At other pressures, P , and temperatures, t °C, the effective area can be calculated using :


$$A_p = A_n [1 + a(P - P_n)] [1 + \lambda(t - 20)]$$

where a = pressure coefficient = 7.3 x 10⁻¹² / Pascal (Low range)
 0.6 x 10⁻¹² / Pascal (High range)

λ = temperature coefficient of piston-cylinder assembly = 1.65 x 10⁻⁵ / °C

We certify that the accuracy of reading of the pressure measured at 20 °C, subjected to a gravitational acceleration of 9.80665 ms⁻², when used with a set of weights within our standard manufacturing tolerances and used to the instructions in the manual is as shown in the table below. See notes overleaf.

UNITS	PRESSURE	RANGE
lb/in ²	10 to 100	100 to 10000
bar	1 to 6	6 to 700
MPa	0.1 to 0.6	0.6 to 70
kPa	100 to 600	600 to 70000
kg/cm ²	1 to 6	6 to 700
ACCURACY	0.025%	0.02%

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