Minerva
METROLOGY AND CALIBRATION
Ensuring carefree traceability
Chrysantstraat 1 3812 WX Amersfoort, the Netherlands

ilac-MRA
CALIBRATION
RvA K 048

calibration certificate

certificate number: 4252060

Customer	Blanken Controls B.V. Gate Dalenk Logistiek Imbosweg 30 7371 DD, Loenen, The Netherlands
Instrument	digital pressure indicator
Manufacturer	MCI
Type	M94DPV
Range	0 .. 110 kPa a // 0 .. 3000 Pa g
Serial number(s)	20071108001
Asset number	DR09
Calibration method	During the measurements, mentioned in the annexes, the device under test was directly connected to the mentioned standard. Before commencing the actual calibration a warm up time of 30 minutes was incorporated.
Reference level	pressure connection port
Location	Chrysantstraat 1 3812 WX Amersfoort, the Netherlands
Environmental conditions	Measurements were done in a climatised laboratory with the room temperature between 18ºC and 23ºC. The temperature variation during the calibration not exceeded ±1ºC
Period of calibration	01-12-2025
Results	see page 2 (and further if applicable) of this certificate

uncertainty	The reported expanded uncertainty is based on the standard uncertainty of the measurement multiplied by a coverage factor *k*, such that the coverage probability corresponds to approximately 95 %. The standard uncertainty has been determined in accordance with EA-4/02 M.
traceability	The measurements have been executed using standards for which the traceability to (inter)national standards has been demonstrated towards the RvA.
date of issue certificate:	Amersfoort, 02/12/25

Digitally signed by Alexander Tsiporenko
Date: 2025.12.02 11:51:50 CET

A. Tsiporenko, corporate metrologist	type	status
	digital certificate	*original, digitally signed*
	paper certificate	*signed copy*

device under test	digital pressure indicator	
manufacturer	MCI	
type	M94DPV	channel: 1
serial number(s)	20071108001	

Description of the used pressure standard(s)

instrument	pressure controller / calibrator
manufacturer	DH Instruments
type	PPC3
platform s.n.	250
piston cylinder s.n. / range	(250-Lo) used in N2
measuring range	0 .. 207 kPa a
uncertainty of the reference pressure	10,0·10-5·p + 6 Pa

Measurement results, no adjustment performed

reference pressure [kPa a]	uncertainty of the reference pressure [kPa]	reading manual DUT [kPa a]	disagreement absolute [kPa]	disagreement relative [%range]	disagreement relative [%R]	expanded measurement uncertainty [kPa]
5,0046	0,0067	5,0050	0,0004	0,000	0,008	0,0069
11,0001	0,0073	11,0000	-0,0001	0,000	-0,001	0,0074
21,9999	0,0084	22,0050	0,0051	0,005	0,023	0,0085
33,000	0,010	33,010	0,010	0,009	0,030	0,010
44,000	0,011	44,015	0,015	0,014	0,034	0,011
55,000	0,012	55,010	0,010	0,009	0,018	0,012
66,000	0,013	66,020	0,020	0,018	0,030	0,013
77,000	0,014	77,025	0,025	0,023	0,033	0,014
88,000	0,015	88,020	0,020	0,018	0,023	0,015
99,000	0,016	99,020	0,020	0,018	0,020	0,016
110,000	0,017	110,020	0,020	0,018	0,018	0,022
99,000	0,016	99,020	0,020	0,019	0,021	0,016
88,000	0,015	88,025	0,025	0,023	0,028	0,015
77,000	0,014	77,030	0,030	0,027	0,039	0,014
66,000	0,013	66,025	0,025	0,023	0,038	0,013
55,000	0,012	55,020	0,020	0,018	0,037	0,012
44,000	0,011	44,025	0,025	0,023	0,057	0,011
33,000	0,010	33,020	0,020	0,018	0,061	0,010
22,0003	0,0084	22,0150	0,0147	0,013	0,067	0,0085
10,9999	0,0073	11,0100	0,0101	0,009	0,092	0,0074
5,0034	0,0067	5,0100	0,0066	0,006	0,132	0,0069

legenda

column 1, 2	generated reference pressure and uncertainty of the generated reference pressure
column 3	pressure readout DUT (device under test)
column 4	absolute difference between column 3 and column 1
column 5,6	relative difference between column 3 and column 1
column 7	expanded measurement uncertainty including calibration line-up, DUT resolution, repeatability, etc (k = 2)

maximum figures :	disagreement	0,027	% range
	hysteresis	0,009	% range
	uncertainty	0,020	% range

calibration technician

K.J. de Rouw

device under test	digital pressure indicator
manufacturer	MCI
type	M94DPV channel: 2
serial number(s)	20071108001

Description of the used pressure standard(s)

instrument	pressure controller / calibrator
manufacturer	DH Instruments
type	PPC3
platform s.n.	960
piston cylinder s.n. / range	(960-Lo) used in N2
measuring range	0 .. 15 kPa g
uncertainty of the reference pressure	10,0·10-5·pe + 0,4 Pa

Measurement results, no adjustment performed

reference pressure [Pa g]	uncertainty of the reference pressure [Pa]	reading manual DUT [Pa g]	disagreement absolute [Pa]	disagreement relative [%range]	disagreement relative [%R]	expanded measurement uncertainty [Pa]
-0,04	0,40	-0,04	0,00	0,000	--	0,40
300,05	0,43	299,56	-0,49	-0,016	-0,164	0,43
600,36	0,46	599,56	-0,80	-0,027	-0,133	0,46
900,10	0,49	899,46	-0,64	-0,021	-0,071	0,49
1200,14	0,52	1199,46	-0,68	-0,023	-0,057	0,52
1499,97	0,55	1499,56	-0,41	-0,014	-0,027	0,55
1800,14	0,58	1799,76	-0,38	-0,013	-0,021	0,58
2099,98	0,61	2099,46	-0,52	-0,017	-0,025	0,61
2399,90	0,64	2399,76	-0,14	-0,005	-0,006	0,64
2699,86	0,67	2699,86	0,00	0,000	0,000	0,67
2999,97	0,70	2999,56	-0,41	-0,014	-0,014	0,70
2699,84	0,67	2699,56	-0,28	-0,009	-0,010	0,67
2400,01	0,64	2399,96	-0,05	-0,002	-0,002	0,64
2100,02	0,61	2100,16	0,14	0,005	0,007	0,61
1799,98	0,58	1800,36	0,38	0,013	0,021	0,58
1500,07	0,55	1500,56	0,49	0,016	0,033	0,55
1199,87	0,52	1200,26	0,39	0,013	0,032	0,52
900,04	0,49	900,46	0,42	0,014	0,047	0,49
600,15	0,46	600,56	0,41	0,014	0,068	0,46
300,04	0,43	299,96	-0,08	-0,003	-0,027	0,43
-0,02	0,40	-0,04	-0,02	-0,001	--	0,40

legenda

column 1, 2	generated reference pressure and uncertainty of the generated reference pressure
column 3	pressure readout DUT (device under test)
column 4	absolute difference between column 3 and column 1
column 5,6	relative difference between column 3 and column 1
column 7	expanded measurement uncertainty including calibration line-up, DUT resolution, repeatability, etc (k = 2)

maximum figures :	disagreement	0,027	% range
	hysteresis	0,040	% range
	uncertainty	0,023	% range

calibration technician

K.J. de Rouw