

PRODUCT INFORMATION

Leak Master

Accurate, Stable, Handy Micro-Leak Generator

LM-1C

LM-1AH



Accuracy (Difference from the required flow) Within ±5%
For less than 2 mL/min, it is within ±10 to 20%.

U.S. Patent, European Patent, Utility Model

- **LM-1C / LM-1AH (For high pressure)::** Customized to the specified pressure and flow:
LM-1C-J1 series: Standard model with predetermined flow.
- Enables to easily and reliably check the sensitivity of Air Leak Testers.
- Maintains the same flow for a long period of time.
- Can also be used for the Secondary Pressure method.
- Can be connected to the CAL port of Air Leak Testers. (LM-1AH cannot be connected directly to the CAL port.)
When connecting to the piping between the work and the tester, use the dedicated adapter.
- By replacing the Leak Master with the dedicated plug, the tester can easily return to the normal test state (no leak state).
- ISO/IEC17025 calibration available.



Customized to the desired flow. Use it as an optimum reference instrument.

Model: LM-1C/LM-1AH (①)(②,③)

- ① Adapter diameter: **R1:** R1/8, **R2:** R1/4
- ② Required flow: xxx mL/min
Flow ≥ 20 mL/min (in units of 1 mL/min)
Flow < 20 mL/min (in units of 0.1 mL/min)
- ③ Test pressure: LM-1C xxx kPa / LM-1AH xxx MPa
LM-1C: For less than 200 kPa, specify in units of 0.1 kPa.
For other ranges, specify in units of 1 kPa
LM-1AH: Specify in units of 0.1 MPa for all pressure ranges.

Flow	Test pressure	
0.1 to 20 mL/min	1 to 9.9 kPa	Pressure
0.1 to 300 mL/min	10 to 99 kPa	
0.1 to 500 mL/min	100 to 999 kPa	
0.1 to 20 mL/min	-1 to -9.9 kPa	Vacuum
0.1 to 100 mL/min	-10 to -49 kPa	
0.1 to 200 mL/min	-50 to -89 kPa	
0.1 to 50 mL/min	1 to 4.9 MPa	High pressure

Example: Adapter diameter R1/4, Flow 2.5 mL/min, Test pressure 150 kPa
Model: **LM-1C(R2)(2.5 mL/min, 150 kPa)**

- **Main Body & Accessories**
LM-1C / LM-1AH (With a filter joint and an acrylic cover)
Accessories (Adapter, plug, filter element, O-ring)

LM-1C Accuracy (Difference from the required flow) & Minimum units

Required flow mL/min	Accuracy (Difference from the required flow)	Minimum units mL/min
0.1 to 0.7	Within ±20% of the required flow	0.1
0.8 to 1.9	Within ±10% of the required flow	0.1
2.0 to 19.9	Within ±5% of the required flow	0.1
20 to 500		1

LM-1H Accuracy (Difference from the required flow) & Minimum units

Required flow mL/min	Accuracy (Difference from the required flow)	Minimum unit mL/min
0.1 to 0.7	Within ±20% of the required flow	0.1
0.8 to 19.9	Within ±10% of the required flow	0.1
20 to 50	Within ±10% of the required flow	1

* Flows less than 0.1mL/min can be manufactured by special order.
For available flows and specifications, contact Cosmo.

Flow Description

For LM-1C and LM-1AH, the flow is indicated by the "Conversion Flow".

Conversion Flow

The flow value measured and then converted when the Leak Master is produced. The value varies depending on the environmental conditions (temperature, atmospheric pressure).

LM-1C-J1 Series

LM-1C-J1 Series are standard Leak Masters with the pressure and flow values shown in the table below. A data sheet showing actually measured or calculated flows at each pressure point will be attached. Large flows are also available. Suitable for sensitivity calibration.

• Test Pressure and Flow

Model: LM-1C-J1-(*) (*) The numbers (1, 2, 5...100, 200) are the standard flows (mL/min) at a test pressure of 100 kPa.

• Example of flows at each test pressure (The table below is for reference only. Unit: mL/min)

Test pressure (kPa)	LM-1C-J1-1	LM-1C-J1-2	LM-1C-J1-5	LM-1C-J1-10	LM-1C-J1-20	LM-1C-J1-50	LM-1C-J1-100	LM-1C-J1-200
10	0.08	0.16	0.39	0.78	1.60	4.66	10.33	23.0
20	0.16	0.32	0.78	1.56	3.19	9.32	20.7	45.9
30	0.25	0.50	1.24	2.48	5.03	14.46	31.0	65.3
40	0.34	0.68	1.70	3.39	6.87	19.60	41.4	84.7
50	0.43	0.87	2.16	4.31	8.71	24.7	51.8	105.8
60	0.54	1.09	2.70	5.40	10.84	29.8	61.7	126.8
70	0.65	1.31	3.25	6.49	12.96	34.9	71.6	145.3
80	0.77	1.52	3.79	7.57	15.09	40.0	81.2	163.8
90	0.88	1.74	4.34	8.66	17.21	45.1	90.8	182.0
100*	0.99	1.96	4.88	9.75	19.34	50.2	100.4	200.1
150	1.74	3.31	8.18	16.42	31.7	75.0	147.1	
200	2.49	4.65	11.47	23.1	44.0	102.0	193.7	
250	3.49	6.54	15.52	31.0	58.0	128.6		
300	4.50	8.44	19.57	39.0	71.9	155.3		
350	5.50	10.33	23.6	46.9	85.9			
400	6.50	12.22	27.7	54.9	99.9			
450	7.75	14.45	32.2	63.9	115.2			
500	9.01	16.68	36.7	72.9	130.5			
550	10.26	18.90	41.2	81.9	145.8			
600	11.51	21.1	45.7	90.9	161.2			

Select Leak Master according to purposes

For Daily Inspection
Select a Leak Master whose flow is closer to the actual leak limit.

For measurement of Equivalent Internal Volume
Select a Leak Master with a reasonably large flow. If the flow is too small, the ratio of noise in the flow will be larger, resulting in incorrect calibration.

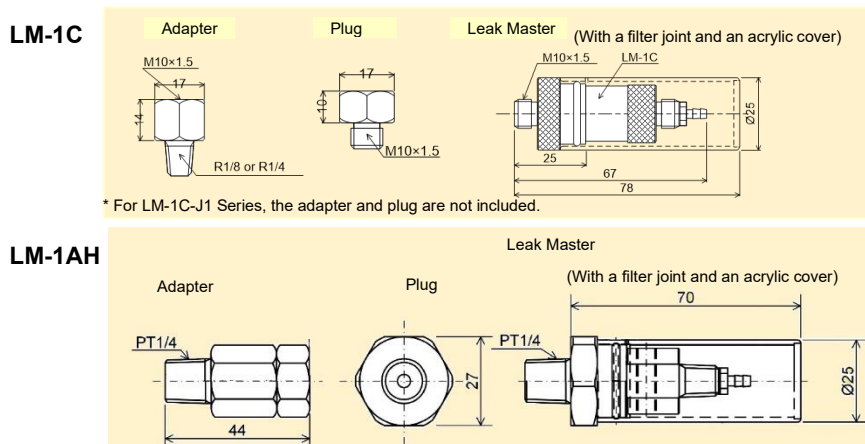
Value actually measured
Value obtained by calculation

Accuracy (Difference from the required flow): Within $\pm 5\%$ at a test pressure of 100 kPa. For 1 mL/min: Within $\pm 10\%$
For the vacuum range, contact Cosmo.

• Main Body & Accessories LM-1C-J1 with a filter joint and an acrylic cover, Accessories: Filter element, O-ring

* When connecting to the piping between the work and the tester, purchase the optional adapter and plug.

External Appearance



* For LM-1C-J1 Series, the adapter and plug are not included.

Conversion joint (Adapter)

The following are available as options.

Part No.	Male thread size	Female thread size	Application
7201ALAL	R1/8	M10 × 1.5	Connect LM-1C to the middle of the piping (RC1/8 socket). Included with LM-1C(R1). (*)
7201ALAZ	R1/4	M10 × 1.5	Connect LM-1C to the middle of the piping (RC1/4 socket). Included with LM-1C(R2). (*)
7201ALAX	M10 × 1.5	Rc1/4	Connect R1/4 fitting to the CAL port of Air Leak Tester.
7201ALAV	M10 × 1.5	Rc1/8	Connect R1/8 fitting to the CAL port of Air Leak Tester.
7301ORB	R1/8	Rc1/8	Connect LM-1AH to the middle of the piping (RC1/8 socket). Included with LM-1AH(R1).
7201ALDP	R1/4	Rc1/4	Connect LM-1AH to the middle of the piping (RC1/4 socket). Included with LM-1AH(R2).

(*) Not included with LM-1C-J1

* The contents of this Product Information are as of July 2024. The specifications are subject to change without prior notice.

Cosmo Instruments Co., Ltd.

2974-23 Ishikawa, Hachioji, Tokyo 192-0032 Japan

<http://www.cosmo-k.co.jp/>

Phone: +81-(0)42-642-1357 Fax: +81-(0)42-646-2439

China: Cosmo Instruments (China, Jiaxing) Co., Ltd. Shanghai, Tianjin, Guangzhou, Chongqing, Changchun, and Wuhan	+86-(0)573-82800886
Korea: Cosmo Korea Co., Ltd.	+82-(0)32-623-6961
Taiwan: Taiwan Cosmo Instruments Co., Ltd.	+886-(0)2-2707-3131
Malaysia: COSMOWAVE SDN.BHD.	+60-(0)3-51626677
Thailand: Cosmowave Technology Co., Ltd.	+66-(0)2-7361667
Indonesia: Pt. Cosmowave	+62-(0)21-89328750
Vietnam: Cosmowave Technology Co., Ltd.	+84-(0)24-37876085

India: Cosmo Instruments India Pvt. Ltd. Head Office South Zone Regional Office, Chakan Office, Chennai Office, Gujarat Office	+91-(0)124-421-0946
Germany: Cosmo EU Solutions Technology GmbH	+49-(0)212-383671-71
USA: Cosmo Solutions Technology, Inc.	+1-248-488-2580
Mexico: Cosmo De Mexico Monterrey Office	+52 (472) 117-2157 +52 (81) 1104-2479
Brazil: Tex Equipamentos Eletronicos Ind. Com. Ltda.	+55-(0)11-4591-2825
Australia: Industrial Research Technology Pty. Ltd.	+61-(0)412-176-674

LM-1C-985B1-F