

LACO TECHNOLOGIES

CALMASTER™ LEAK STANDARD MATRIX

SECTION	CODE	OPTION	SECTION	CODE	OPTION	SECTION	CODE	OPTION	
CALIBRATED LEAK			GAS RESERVOIR (CONTINUED)			OPTIONS			
1	CM	CalMaster™	8		Alcatel internal leak – 180T, 182T, ASI 20	11	0	No options	
LEAK ELEMENT			9		Proprietary reservoir provided by customer	11	G	Pressure gauge with fill valve (refillable leaks)	
2	1	Teflon Permeation	A		1/8" FNPT	11	P	Calibrated via primary rate of rise system Special Connection (Contact LACO)	
	2	Metal Capillary	B		1/8" MNPT	LEAK RATE UNIT			
	3	Glass Permeation	C		1/4" FNPT	/1		Atm.cc/sec	
	4	Multiple Glass Elements	D		1/4" MNPT	/2		Std.cc/sec	
	5	Micro Tube Capillary	E		1/4" MVCR	/3		sccm	
GAS			F		1/4" SL COMP	/4		mbar.L/sec	
3	1	Helium (He)	G		3/4" O.D. tube	/5		Torr.L/sec	
	2	Air	H		1/2" MVCR	/6		Pa.m3/sec	
	3	Argon (Ar)	J		NW 16	/7		Oz/year	
	4	Nitrogen (N ₂)	K		NW 25	/8		Gr/year	
	5	Carbon Dioxide (CO ₂)	L		NW 40	/9		Mol/sec	
	6	Nitrous Oxide (N ₂ O)	M		2.75" CF	/A		MicroL/sec	
	7	Helium 3 Isotope (He ³)	N		1.33" CF	/B		Std.cc/hr	
	A	R-12 Refrigerant	P		3/8" O.D. tube	/C		CFM	
	B	R-22 Refrigerant	Q		10-32 male thread	INLET PRESSURE/PRESSURE UNIT			
	C	Hydrogen (H ₂)	R		1/4" MVCO	/#.#-code		Pressure value applied at the inlet	
	D	Deuterium (D ₂)	S		1/4" Push Tube	1		PSI – Absolute	
	E	Sulfur Hexafluoride (SF ₆)	U		50cc reservoir	2		PSI – Relative	
	F	Neon (Ne)	T		VIC / Edwards internal leak standard	3		Atm – Absolute	
	G	Xenon (Xe)	V		Varian internal leak	4		Torr – Absolute	
	H	R-134a Refrigerant	W		Ultra miniature leak (10 ⁻⁷ to 10 ⁻¹⁰ only)	5		mTorr – Absolute	
	J	Methane (CH ₄)	Y		Alcatel internal leak – 142, 122D	6		Microns – Absolute	
	K	Krypton (Kr)			Special reservoir (Contact LACO)	7		Bar – Absolute	
	L	R-404a Refrigerant	CONNECTION			8		MBar – Absolute	
	M	R-290 Refrigerant	0		NW 16 flange	9		Pascal – Absolute	
	O	Carbon Monoxide (CO)	1		NW 25 flange	A		Kpa – Absolute	
P	R-407c Refrigerant	2		NW 40 flange	B		InHg – Absolute		
R	R-410 Refrigerant	3		1 1/8" O.D. tube	C		InHg – Relative		
S	Ammonia (NH ₃)	4		3/4" O.D. tube	D		InWater – Relative		
T	Halon 1301	5		VCR4 male	E		mmHg – Absolute		
LEAK RATE MANTISSA			6		1/4" swagelock	F		Kpa – Relative	
4	X	Any value in designated range	7		1/8" FNPT	G		Bar – Relative	
	M	Middle range (4 to 6 in the designated range)	8		1/4" MNPT	OUTLET PRESSURE/PRESSURE UNIT			
	L	Low range (1 to 3 in the designated range)	9		10-32 male thread w/o-ring	/#.#-code		Pressure value applied at the inlet	
	H	High range (7 to 9 in the designated range)	A		3/8" O.D. tube (for vacuum applications only)	1		PSI – Absolute	
##	Special value: within +10% of prescribed leak rate	B		1/8" MNPT	2		PSI – Relative		
LEAK RATE EXPONENT			C		1/4" FNPT	3		Atm – Absolute	
5	+2 to -10	Specifies leak rate decade range	D		Alcatel sniffer probe adaptor	4		Torr – Absolute	
	##	Multiple ranges for adjustable leak rate leaks	E		2.75" Con-Flat flange	5		mTorr – Absolute	
NUMBER OF CALIBRATION POINTS			F		Gas Check 3000 leak detector	6		Microns – Absolute	
6	1	Single pressure calibration	G		1/2" – 20 straight thread	7		Bar – Absolute	
	#	Additional calibration points	H		Leybold sniffer probe	8		MBar – Absolute	
ISOLATION VALVE			J		1 1/3" mini Con-Flat flange	9		Pascal – Absolute	
7	0	No isolation valve	K		Varian Sniffer Probe	A		Kpa – Absolute	
	1	Manual valve	L		M8 Screw	B		InHg – Absolute	
	2	Solenoid isolation valve, 3 way, SS, 24 VDC	M		MGD 2002	C		InHg – Relative	
	3	Zero-volume isolation manual valve	N		NO OUTLET CONNECTION	D		InWater – Relative	
	4	Bakeable manual isolation valve	P		1/4" MVCO	E		mmHg – Absolute	
	5	Zero-volume valve with pneumatic actuator	Q		NW 50 flange	M		MPa – Relative	
6	Miniature pneumatic valve (for production leak testing)	R		1/8" Swagelok	GAS CONCENTRATION				
GAS RESERVOIR			S		Swagelok Q.D. SS-QC4-S-2PF	15	/#.#	Specific gas concentrate w/ nitrogen as the balance gas	
8	0	None	T		10-32 female thread		X		Specify the gas and the balance gas
	1	115cc Standard (below 400 psi)	U		VCR4 female		FLOW DESIGNATION		
	2	300cc DOT (400 to 1500 psi)	V		3/8" O.D. tube (for sniffing applications only)		16	T	Total Flow
	4	150cc DOT (for high pressures where size is a constraint)	W		Gas Check SF6			P	Partial Flow
	5	Dual fabricated reservoir (for refrigerant leaks only)	Y		1/2" O.D. tube	INLET PRESSURE/PRESSURE UNIT			
	6	1000cc DOT (for large leak rates – mid 10 ⁻⁵ and lgr.)	Z/#		Staubli 1/8" Q.D. Add optional code # for coded Q.D. Codes: Yel=0, Red=3, Grn=4, Blu=6, Bn=7, Violet=1, Blk=9	Use only if Section 10=X. Leave blank if Section 10 is A or V.			
	7	500cc DOT (for lg. leak rates – mid 10 ⁻⁵ and lgr.)			Special Connection (Contact LACO)	LEAK RATE UNIT			
OUTLET FLOW CONDITION			Special reservoir (Contact LACO)			/1		Atm.cc/sec	
10	A	Into Atmosphere – 760 Torr	Special reservoir (Contact LACO)			/2		Std.cc/sec	
	V	Into Vacuum – <100 mTorr	Special reservoir (Contact LACO)			/3		sccm	
	X	Special Condition, Specify in Sec. 14	Special reservoir (Contact LACO)			/4		mbar.L/sec	

Inlet options for leaks with no reservoir. Specify inlet pressure in Section 13.

Leave blank if no inlet pressure is specified.

Use only if Section 10=X. Leave blank if Section 10 is A or V.

Use only if gas concentration is not 100%.

Select one only if Sec. 15 is used.