

CALMASTER™ CALIBRATED LEAK STANDARDS MATRIX

POSITION	CODE	OPTION
CALIBRATED LEAK		
1	CM	CalMaster
LEAK STYLE		
2	1	Teflon Permeation
	2	Metal Capillary
	3	Glass Permeation
	4	Multiple Glass Elements
GAS		
3	1	Helium
	2	Air
	3	Argon
	4	Nitrogen
	5	Carbon Dioxide
	6	Nitrous Oxide
	7	Helium 3 Isotope
	A	R-12 Refrigerant
	B	R-22 Refrigerant
	C	Hydrogen
	D	Deuterium
	E	Sulfur Hexafluoride (SF ₆)
	F	Neon
	G	Xenon
	H	R-134a Refrigerant
	J	Methane (CH ₄)
	K	Krypton
	L	R404a Refrigerant
	M	R290 Refrigerant
	P	R407c Refrigerant
R	R410 Refrigerant	
S	Ammonia (NH ₃)	
T	Halon 1301	
X	Other (specify)	
LEAK RATE MANTISSA		
4	X	Any value in designated range
	M	Middle range (4 to 6 in the designated range)
	L	Low range (1 to 3 in the designated range)
	H	High range (7 to 9 in the designated range)
##	Special value: within +/-10% of prescribed leak rate	
LEAK RATE EXPONENT		
5	0 to -10	Specifies leak rate decade range
	##	Multiple ranges for adjustable leak rate leaks
NUMBER OF CALIBRATION POINTS		
6	1	Single pressure calibration
	#	Additional calibration points
ISOLATION VALVE		
7	0	No isolation valve
	1	Manual valve
	2	Solenoid isolation valve, 3 way, SS, 24 VDC
	3	Zero-volume isolation manual valve
	4	Bakeable isolation manual valve (for glass leaks only)
	5	Zero-volume valve with pneumatic actuator
6	Miniature pneumatic valve (for production leak testing)	
GAS RESERVOIR		
8	0	None
	1	115cc Standard (below 400 psi)
	2	300cc DOT (400 to 1500 psi)
	3	300cc DOT (below 400 psi and non-refillable)
	4	150cc DOT (for high pressures where size is a constraint)
	5	Dual fabricated reservoir (for refrigerant leaks only)
	6	1000cc DOT (for large leak rates – mid 10-5 and larger)
	7	500cc DOT (for large leak rates – mid 10-5 and larger)
	8	Alcatel internal leak –180T, 182T, AS120
9	Proprietary reservoir provided by customer	

POSITION	CODE	OPTION
GAS RESERVOIR (CONTINUED)		
8 (CONT'D)	A	1/8" FNPT
	B	1/8" MNPT
	C	1/4" FNPT
	D	1/4" MNPT
	E	1/4" MVCR
	F	1/4" SL COMP
	G	3/4" O.D. tube
	H	1/2" MVCR
	J	NW16
	K	NW25
	L	NW40
	M	2.75" CF
	N	1.33" CF
	P	3/8" O.D. tube
	Q	10-32 male thread
	R	1/4" MVCO
	S	1/4" Push Tube
	U	50cc reservoir
	T	VIC / Edwards internal leak standard
V	Varian internal leak	
W	MKS ultra miniature leak	
Y	Alcatel Internal leak – 142, 122D	
X	Special reservoir	
CONNECTION		
9	0	NW16 flange
	1	NW25 flange
	2	NW40 flange
	3	1 1/8" O.D. tube
	4	3/4" O.D. tube
	5	VCR4 male
	6	1/4" swagelock
	7	1/8" FNPT
	8	1/4" MNPT
	9	10-32 male thread w/o-ring
	A	3/8" O.D. tube (for vacuum applications only)
	B	1/8" MNPT
	C	1/4" FNPT
	D	Alcatel sniffer probe adaptor
	E	2.75" Con-Flat flange
	F	Gas Check 3000 leak detector
	G	1/2" - 20 straight thread
	H	Leibold sniffer probe
	J	1 1/3" mini Con-Flat flange
	K	Varian Sniffer Probe
L	M8 Screw	
M	MKS Pico Sniffer Probe	
N	NO OUTLET CONNECTION	
P	1/4" MVCO	
Q	NW50 flange	
R	Pfeiffer Sniffer Probe BG449-207-T	
T	10-32 female thread	
U	VCR4 female	
V	3/8" O.D. tube (for sniffing applications only)	
W	Gas Check SF6	
Y	1/2" O.D. tube	
Z/#	Staubli 1/8" Q.D. Add optional code # for coded Q.D. Codes: yel=0, red=3, Grn=45, blu=6, Brn=75, Vio=15, Blk=9	
X	Other (specify)	
OUTLET FLOW CONDITION		
10	A	Into Atmosphere - 760 Torr
	V	Into Vacuum - <100 mTorr
	X	Special Condition, Specify in Sec. 14
OPTIONS		
11	0	No options
	G	Pressure gauge w/brass fill valve (refillable leaks)
	P	Calibrated via primary rate of rise system
	X	Special option (specify)

POSITION	CODE	OPTION
LEAK RATE UNIT		
12	/1	Atm.cc/sec
	/2	Std.cc/sec
	/3	sccm
	/4	mbar.L/sec
	/5	Torr.L/sec
	/6	Pa.m ³ /sec
	/7	Oz/year
	/8	Gr/year
	/9	Mol/sec
INLET PRESSURE/PRESSURE UNIT		
13	/ #.# - # /	Pressure value applied at the inlet
	1	PSI - Absolute
	2	PSI - Relative
	3	Atm - Absolute
	4	Torr - Absolute
	5	mTorr - Absolute
	6	Microns - Absolute
	7	Bar - Absolute
	8	MBar - Absolute
	9	Pascal - Absolute
	A	Kpa - Absolute
B	InHg - Absolute	
C	InHg - Relative	
D	InWater - Relative	
E	mmHg - Absolute	
OUTLET PRESSURE/PRESSURE UNIT		
14	#.# - # /	Pressure value applied at the inlet
	1	PSI - Absolute
	2	PSI - Relative
	3	Atm - Absolute
	4	Torr - Absolute
	5	mTorr - Absolute
	6	Microns - Absolute
	7	Bar - Absolute
	8	MBar - Absolute
	9	Pascal - Absolute
	A	Kpa - Absolute
B	InHg - Absolute	
C	InHg - Relative	
D	InWater - Relative	
E	mmHg - Absolute	
GAS CONCENTRATION		
15	##	Specific gas concentrate with nitrogen as the balance gas
	A	100%
	X	Specify the gas and the balance gas

EXAMPLES	
PART #	CM113.0-7111V0/1
Description	Calibrated Helium Leak Standard, Teflon Permeation, 3.0 x 10e-7 atm.cc/sec, one cal. point, shut-off valve, 115cc standard reservoir, NW25 outlet connection, leaking into vacuum, no options.
PART #	CM213.0+110BNX0/3/60-2/20-C/A
Description	Helium Leak Standard, Capillary, 30 sccm, one cal. point, no shut-off valve, no reservoir, 1/8" inlet connection, no outlet connection, no options, 60 psig input pressure, leaking into 20 inHg relative, at 100% helium
PART #	CM211.5-63009V0/4/25-1/0-1/10
Description	Helium Leak Standard, Capillary style, 1.5E-6 mbar.L/sec, three calibration points, no shut-off valve, no reservoir, no inlet connection, 10-32 thread outlet connection, no options, 25 psia input pressure, leaking into vacuum, at 10% helium