Precision Measurement Equipment Laboratory (PMEL). FAC: 2171

CATCODE: 218868
OPR: AF/A4LM
OCR: AFLCMC/WNM (AFMETCAL)

1.1. **Description.** This facility provides intermediate-level maintenance and calibration of test, measurement, and diagnostic equipment (TMDE) for assigned units. PMEL personnel calibrate, certify and repair TMDE at regular intervals and provide emergency assistance on TMDE as required (see AFMAN 21-113, Air Force Metrology and Calibration [AFMETCAL] Management).

1.2. **Requirements Determination**. TO 00-20-14 lists bases authorized PMELs.

1.3. **Scope Determination.** Table 1.1 can be referenced to calculate the base square footage authorization. Table 1.2 can be referenced to calculate additional square footage authorizations required to specialty equipment.

1.4. **Design Considerations.** Obtain PMEL design information from FC 4-218- 01F, Air Force Criteria for Precision Measurement Equipment Laboratory Design and Construction. Obtain operational information from the AFLCMC/WNM (AFMETCAL) through AF/A4LM. TO 00-20-14 contains day-to-day operational guidance for PMELs.

1.4.1. The laboratory requires tight environmental controls for temperature, humidity, and dust, and a calibration and repair area from interfering vibration. These environmental constraints vary. Ensure new and modified facilities conform to the specifications in FC 4-218-01F.

1.4.2. All PMELs require certification per AFMAN 21-113. There are two major operational criteria for certification: 1) temperature and humidity remain in tolerance at least 90 percent of the time, measured over a 12-month period, and 2) the facility meets the requirements of FC 4-218-01F.

Table 1.1 PMEL Type A-F Space

Workload per Year (Items):	**Type A: 0-3600**		**Type B: 3601-5000**		**Type C: 5001-7200**	
	m^2	**ft^2**	**m^2**	**ft^2**	**m^2**	**ft^2**
Scheduling/Receiving[2]	69	740	86	924	121	1,300
Equipment Cleaning[2]	9	98	9	98	16	175
Calibration/Repair[2]	207	2,230	260	2,800	362	3,900
Workload per Year (Items):	**Type D: 7201-10000**		**Type E: 10001-20000**		**Type F: 20001-100000**	
	m^2	**ft^2**	**m^2**	**ft^2**	**m^2**	**ft^2**
Scheduling/Receiving[2]	159	1,711	238	2,567	334	3,293
Equipment Cleaning[2]	16	175	24	263	34	368
Calibration/Repair[2]	482	5,185	723	7,778	1,012	10,889

NOTES:
1. Area requirements are based on the typical PMEL. Add square footage if the

equipment in Table 1.2 resides in the PMEL facility.

2. Scheduling/receiving/equipment storage areas are estimated at one-third the calibration/repair requirement.

Table 1.2 Space Requirements for PMEL Facilities

Functions	Net Building Area	
	m^2	ft^2
Vestibule	See Note 1,2	See Note 1,2
Lobby/Waiting	See Note 1,2	See Note 1,2
Reception	See Note 1,2	See Note 1,2
Break Room	See Note 1,2	See Note 1,2
Office Space	See Note 1	See Note 1
Conference Room/Training	See Note 1,2	See Note 1,2
Technical Library	21.3	229
Scheduling/Receiving	See Table 1.1	See Table 1.1
Equipment Storage	18.6	200
Container Storage	18.6	200
Equipment Cleaning	See Table 1.1	See Table 1.1
Air Lock	5	54
Calibration/Repair	See Table 1.1	See Table 1.1
68 Degree F Room	78	850
Shield Room	18.6	200
Night Vision Calibration	9.3	100
Aircraft/Wheel Load Scales (P/Ns 654000/804000, MD8060 or equivalent: 2,400 lbs)	11.1	120
Force Gage/Load Cell/Dynamometers (P/N C99728, C3-100 or equivalent: 1,400 lbs)	6.5	70
Torque Multiplier Calibration System	7.4	80
Tensiometer Calibration System (P/N 774000 or equivalent: 4,800 lbs, See Note 9)	5.9	64
Bullion Balance	2.8	30
Fiber Optic Calibration System	4.5	48
High Voltage Calibrator (P/N BRC40-4NA1 or equivalent)	9.3	100
Hoist (F-15 Rock)	1.7	18
North-Seeking Gyro Pad	1.5	16
Photometric Bench	18.2	196
Surface Plate (2 x 3 ft) (326 lbs)	6.7	72
Surface Plate (3 x 6 ft) (965 lbs)	10	108
Surface Plate (4 x 8 ft) (3,920 lbs)	13	140
Automated Scale Force press (P/N MD8060-0000-10, See Note 7, and 8)	11.2	120
Sonic Nozzle Calibrator (CFSNC-250, See Note 8)	7.5	81
Vibration Calibration System (P/N K9155D23)	6.7	72
Thermal Voltage Converter Cal System (P/N EL2400)	3.3	36

Power Amplifier System (P/N SSPA 0.001-1.00-500)	6.7	72
Power Measurement Calibration system (P/N PMCS1b)	6.7	72
Fiber Optics FOTECS	9.3	100
National Instruments	9.3	100
Resistance Measurement standard (P/N 6625AF or equivalent)	9.3	100
Ratio Transformer (P/N 1272B or equivalent)	6.7	72
Vector Network Analyzer (P/N 8364C or equivalent)	6.7	72
Humidity Generator (P/N CGS-240)	5	54
Automated Force Press (P/N 140470 or equivalent)	11.4	123
Force Calibration System (P/N C3-100, See Note 10)	3.3	36
IRTS Calibration area	9	98
Temp Bath Hood	1.7	18
Transportable Field Calibration Unit Storage	9.3	100
Portable Automatic Test Equipment Calibrator Storage	9.3	100

NOTES:

1. Refer to Facility Class 6 of this Manual for administrative space standards.
2. Number of personnel requires user justification.
3. Size varies depending on inventory supported and type of facility. See Table 1.1.
4. Installation specific requirement.
5. 600 ft^2 minimum.
6. Requires a 9.5 ft minimum ceiling height.
7. Requires a 32 A circuit breaker
8. Requires 240V
9. Requires a 12 ft minimum ceiling height.
10. Requires a 15 ft minimum ceiling height.