

ATTACHMENT 4

REFERENCE AREA MATRICES AND ASSOCIATED MEASUREMENTS

Reference Area Matrices and Associated Measurements

Scaler/rate meter:

L2221

SN: 108881

Detector: 43-37B

SN: 190946

Concrete walls	Cinder block wall	Dry wall	Dry wall on 1"x1" tile	Dry wall on quarry	Dry wall opp. From blue tile	Dry wall vinyl	Dry wall no vinyl	CFH chase panel	Wood door	Pipe wrap
509 ± 25	723 ± 48	528 ± 30	637 ± 40	655 ± 30	668 ± 32	616 ± 27	740 ± 17	562 ± 34	474 ± 26	821 ± 31
900	1200	900	1100	1100	1100	1100	1200	1000	900	1300

Avg. CPM
MDCR

Glass	A/C metal top	Metal A/C vent	Dry erase board	Cabinet wall - vert.	Casework horizontal	Casework vertical	Casework on quarry tile	Casework on 1"x1" maroon tile	Soapstone benchtop	Smoked plexi glass from CFH
528 ± 30	669 ± 32	507 ± 16	1149 ± 19	450 ± 30	586 ± 24	445 ± 15	731 ± 28	762 ± 16	636	577
900	1100	900	1800	800	1000	800	1200	1300	1100	1000

Avg. CPM
MDCR

Soapstone benchtop on 1x1 tile	Benchtop stainless steel	Benchtop laminate	Transite panel, vertical	CFH- S. Steel horizontal	CFH- S. Steel vertical	Ceiling tile	Duct exterior	Plexiglass Light cover	Ceiling vent	Raised floor
780 ± 17	684 ± 20	636 ± 25	532 ± 14	574 ± 13	458 ± 15	1303 ± 27	753 ± 21	642 ± 29	676 ± 13	647 ± 15
1300	1200	1100	900	1000	800	2000	1300	1100	1200	1100

Avg. CPM
MDCR

Concrete ceiling	Concrete ceiling low beam	Concrete floor	Quarry tile	Vinyl tile	Concrete floor w/ white mastic	Concrete floor w/ black mastic	Concrete floor chipped	1"x1" maroon tile	UTC Refrigerator	Blue metal plate and piston
1025 ± 41	781 ± 13	1104 ± 25	1974 ± 34	739 ± 83	995 ± 45	962 ± 16	844 ± 20	1404 ± 24	1021 ± 29	566 ± 22
1600	1300	1700	2800	1200	1600	1500	1400	2100	1600	1000

Avg. CPM
MDCR

Concrete floor, painted brown	Cinderblock wall, painted	Double steel door vert.	Concrete wall painted, vert.	Particle board benchtop	Metal locker	Metal and wood locker				
853 ± 28	982 ± 42	456 ± 26	578 ± 25	706 ± 17	411 ± 28	491 ± 14				
1400	1500	850	1000	1200	800	900				

Avg. CPM
MDCR

Reference Area Matrices and Associated Measurements

Scaler/rate meter:

L2221

SN: 108881

Detector: 43-37A

SN: 190946

Counts/minute

Vinyl floor covering	Soapstone	Drywall	Casework	Benchtop laminate	Cabinet glass	Door	Stainless steel	Solid vinyl floor
6 ± 0.8	5 ± 1	5 ± 0.5	4 ± 0.8	7 ± 0.5	5 ± 0.8	4 ± 1	4 ± 0.5	7 ± 1.1

Counts/minute

Steel door	Concrete wall	Average
6 ± 0.8	5 ± 0.5	5 ± 1.2

Counts/minute

Ceiling vent	Light fixture	Vinyl wall covering	Vinyl wall covering glue	Concrete floor w/ white mastic	Quarry tile	Ceiling tile white side
16 ± 0.9	11 ± 0.9	11 ± 0.9	13 ± 1	15 ± 1.8	15 ± 0.5	11 ± 1.3

Reference Area Matrices and Associated Measurements

Scaler/rate meter: L2221 SN: 94954 Detector: 43-37B SN: 120106

Concrete walls	Cinder block wall	Dry wall	Dry wall on quarry	Dry wall opp. From blue tile	Dry wall vinyl	Dry wall no vinyl	CFH chase panel	Wood door	Glass
579 ± 22	689 ± 23	570 ± 26	654 ± 24	743 ± 43	644 ± 28	758 ± 23	509 ± 27	487 ± 22	571 ± 45
1000	1200	1000	1100	1200	1100	1300	900	911	900

Average
MDCR

Wall cabinet on cinderblock	A/C metal top	Metal A/C vent	Dry erase board	Cabinet wall - vert.	Casework horizontal	Casework vertical	Casework on quarry tile	Casework on 1"x1" maroon tile	Soapstone benchtop
578 ± 39	679 ± 34	561 ± 36	1164 ± 34	497 ± 36	647 ± 34	497 ± 36	750 ± 33	642 ± 70	697 ± 64
1000	1200	1000	1800	900	1100	900	1300	1100	1201

Average
MDCR

Soapstone benchtop black	Soapstone benchtop on 1x1 tile	Benchtop stainless steel	Benchtop laminate	Benchtop laminate on 1"x1" tile	Transite panel, vertical	Transite panel, horizontal	Ceiling tile	Duct exterior	Plexiglass Light cover
669 ± 16	772 ± 27	713 ± 26	710 ± 36	790 ± 37	622 ± 24	664 ± 41	1388 ± 48	616 ± 90	651 ± 57
1100	1300	1200	1200	1300	1100	1100	2100	1100	1100

Average
MDCR

Ceiling vent	Concrete ceiling	Concrete ceiling low beam	Concrete floor	Quarry tile	Vinyl tile	Concrete floor w/ white mastic	Concrete floor w/ black mastic	Concrete floor chipped	1"x1" maroon tile
745 ± 72	909 ± 19	753 ± 36	1087 ± 34	2050 ± 34	799 ± 106	1092 ± 52	950 ± 34	902 ± 53	1473 ± 59
1200	1500	1300	1700	2900	1300	1727	1542	1500	2200

Average
MDCR

UTC Refrigerator	Hanging light fixture	Pipe wrap	Dry wall on 1"x1" tile	Coldbox flooring	Coldbox walls	Coldbox ceiling	Wood door over quarry tile	Casework vertical over gry tile
1042 ± 26	895 ± 193	625 ± 34	688 ± 37	668 ± 21	570 ± 22	690 ± 21	587 ± 28	589 ± 25
1600	1400	1100	1200	1100	1000	1200	1000	1000

Average
MDCR

Reference Area Matrices and Associated Measurements

Scaler/rate meter: L2221 SN: 94954 Detector: 43-37A SN: 120106

Counts/minute

Vinyl floor covering	Drywall	Average
7 ± 0.7	6 ± 1.1	7 ± 0.9

Counts/minute

Quarry tile	Light fixture
13 ± 2.7	11 ± 0.7

Reference Area Matrices and Associated Measurements

Scaler/rate meter: L2221 SN: 115123 Detector: 43-37B SN: 190910

Concrete walls	Cinder block wall	Dry wall	Dry wall on quarry	Dry wall opp. From blue tile	Dry wall vinyl	Dry wall no vinyl	CFH chase panel	Wood door	Glass
567 ± 21	793 ± 86	592 ± 60	710 ± 28	816 ± 32	650 ± 30	726 ± 15	525 ± 16	533 ± 43	650 ± 172
MDCR 1000	1300	1000	1200	1300	1100	1200	965	900	1100

A/C metal top	Metal A/C vent	Dry erase board	Pipe wrap	Casework horizontal	Casework vertical	Casework on quarry tile	Casework on 1"x1" maroon tile	Soapstone benchtop	Soapstone benchtop on 1x1 tile
881 ± 35	724 ± 57	1178 ± 45	583 ± 26	717 ± 70	519 ± 45	738 ± 39	785 ± 25	698 ± 64	818 ± 27
MDCR 1400	1200	1800	1000	1200	900	1200	1300	1200	1300

Benchtop wood, painted	Benchtop wood	Benchtop laminate	Transite panel, vertical	CFH- S. Steel horizontal	CFH- S. Steel vertical	Ceiling tile	Duct exterior	Plexiglass Light cover	Ceiling vent
853 ± 12	718 ± 31	785 ± 29	717 ± 12	749 ± 30	557 ± 28	1455 ± 105	714 ± 16	797 ± 45	701 ± 38
MDCR 1400	1233	1300	1200	1300	1000	2100	1200	1300	1200

Concrete ceiling	Concrete ceiling low beam	Concrete floor	Quarry tile	Vinyl tile	Concrete floor w/ white mastic	Concrete floor w/ black mastic	Concrete floor chipped	1"X1" maroon tile	UTC Refrigerator
1115 ± 61	829 ± 37	1040 ± 32	2058 ± 40	775 ± 114	1127 ± 42	930 ± 24	918 ± 26	1436 ± 41	1082 ± 41
MDCR 1700	1300	1600	2900	1300	1700	1500	1500	2100	1700

Reference Area Matrices and Associated Measurements

Scaler/rate meter: L2221 SN: 115123 Detector: 43-37A SN: 190910

	Vinyl floor covering	Drywall	Stainless steel	Plastic light cover	Average
Counts/minute	7 ± 0.7	7 ± 0.7	5 ± 0.5	6 ± 2.2	6 ± 1.5

Reference Area Matrices and Associated Measurements

Scaler/rate meter:

L2221

SN: 117363

Detector: 43-37B

SN: 190909

Concrete walls	Cinder block wall	Dry wall	Dry wall on quarry	Dry wall opp. From blue tile	Dry wall vinyl	Dry wall no vinyl	CFH chase panel	Wood door	Glass	Gray tile 3"x3"	Concrete floor, painted brown
531 ± 37	710 ± 30	593 ± 33	708 ± 23	684 ± 15	639 ± 30	741 ± 41	471 ± 27	517 ± 19	602 ± 75	2129 ± 66	820 ± 38
MDCR	1200	1000	1200	1100	1100	1200	800	1000	1100	3000	1300

A/C metal top	Metal A/C vent	Dry erase board	Cabinet wall - vert.	Casework horizontal	Casework vertical	Casework on quarry tile	Ceiling tile	Soapstone benchtop	Benchtop stainless steel	Sprinkler pipe, red	Cinderblock wall, painted
716 ± 28	505 ± 19	1166 ± 34	479 ± 17	660 ± 35	479 ± 17	729 ± 17	1353 ± 38	648 ± 10	704 ± 24	718 ± 24	999 ± 51
MDCR	1200	1800	800	1100	800	1200	2000	1100	1200	1200	1600

Overhead piping, white	Benchtop laminate	Transite panel, vertical	Transite panel, horizontal	Duct exterior	Plexiglass Light cover	Ceiling vent	Concrete ceiling	Concrete ceiling low beam	Concrete floor	Overhead duct	Hanging light fixture
833 ± 48	725 ± 36	518 ± 21	691 ± 15	677 ± 22	642 ± 24	705 ± 69	905 ± 36	840 ± 28	1018 ± 31	742 ± 17	1261 ± 72
MDCR	1200	1000	1200	1100	1100	1200	1400	1400	1600	1200	1900

Quarry tile	Vinyl tile	Concrete floor w/ white mastic	Concrete floor w/ black mastic	Concrete floor chipped	UTC Refrigerator	Pipe wrap	Hanging light fixture	Incubator	Ramp rubber	Plexiglass cover for CFH	Floor raised
1953 ± 29	775 ± 87	1093 ± 47	954 ± 40	887 ± 24	1539 ± 44	775 ± 54	867 ± 203	756 ± 88	726 ± 22	507 ± 13	684 ± 19
MDCR	2800	1300	1500	1400	2300	1300	1400	1200	1200	900	1200

Stanchion metal horizontal	Stanchion metal vertical	Drywall ceiling	Benchtop plastic ctd	Maroon tiles 1"x1"	Drywall on 1"x1" tile	Cold rm floor metal	Cold rm wall panel white	Cold rm ceiling metal	Cold rm shelf support	Cold rm shelf metal	Glass piping
605 ± 28	415 ± 24	807 ± 16	666 ± 28	1404 ± 65	699 ± 19	576 ± 49	1094 ± 27	1216 ± 59	619 ± 32	560 ± 27	681 ± 51
MDCR	800	1300	1100	2100	1200	1000	1700	1800	1000	1000	1100

Reference Area Matrices and Associated Measurements

Scaler/rate meter:

L2221

SN: 117363

Detector: 43-37A

SN: 190909

Counts/minute

Vinyl tile	Casework	Cabinet glass	Benchtop laminate	Stainless steel	Soapstone	Ceiling tile	Plastic light cover	Average
6 ± 2.3	4 ± 1.6	7 ± 3.5	7 ± 2.6	6 ± 1.4	5 ± 1.9	9 ± 3.9	6 ± 2.2	6 ± 2.8

Counts/minute

Concrete floor w/ mastic	17 ± 2.9
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Reference Area Matrices and Associated Measurements

Scaler/rate meter: L2221 SN: 117370 Detector: 43-37B SN: 190672

	Cinder block wall	Dry wall	Dry wall on quarry	Dry wall opp. From blue tile	Dry wall vinyl	Dry wall no vinyl	CFH chase panel	Wood door	Glass	Hanging light fixture	Concrete flooring planted, brm
Avg. CPM	553 ± 13	714 ± 59	595 ± 55	623 ± 44	797 ± 31	619 ± 31	688 ± 32	496 ± 23	525 ± 73	511 ± 30	1375 ± 39
MDCR	1000	1200	1000	1100	1300	1000	1200	9000	900	900	2000
	Concrete walls	Dry wall	Dry wall on quarry	opp. From blue tile	Dry wall vinyl	Dry wall no vinyl	CFH chase panel	Wood door	Glass	Hanging light fixture	Concrete flooring planted, brm

	A/C metal top	Metal A/C vent	Dry erase board	Cabinet wall - vert.	Casework horizontal	Casework vertical	Casework on quarry tile	Casework on 1"x1" maroon tile	Soapstone benchtop	Soapstone benchtop on 1x1 tile	Cinderblock wall, painted	Glass pipe
Avg. CPM	709 ± 39	538 ± 29	1163 ± 34	443 ± 19	609 ± 26	443 ± 19	708 ± 21	771 ± 36	619 ± 37	776 ± 8	997 ± 57	778 ± 44
MDCR	1200	900	1800	800	1000	800	1200	1300	1100	1300	1600	1300
	A/C metal top	Metal A/C vent	Dry erase board	Cabinet wall - vert.	Casework horizontal	Casework vertical	Casework on quarry tile	Casework on 1"x1" maroon tile	Soapstone benchtop	Soapstone benchtop on 1x1 tile	Cinderblock wall, painted	Glass pipe

	Transite panel, vertical	CFH-S. Steel horizontal	Concrete floor w/ white mastic	Concrete floor w/ black mastic	Concrete floor chipped	1"x1" maroon tile	Pipe wrap	CFH-S. Steel vertical	Ceiling tile	Duct exterior	Ducting	Locker metal
Avg. CPM	556 ± 17	575 ± 26	1081 ± 41	942 ± 47	825 ± 48	1406 ± 44	576 ± 6	472 ± 52	1325 ± 41	650 ± 8	705 ± 83	453 ± 4
MDCR	1000	1000	1700	1500	1300	2100	1000	900	2000	1100	1200	800
	Transite panel, vertical	CFH-S. Steel horizontal	Concrete floor w/ white mastic	Concrete floor w/ black mastic	Concrete floor chipped	1"x1" maroon tile	Pipe wrap	CFH-S. Steel vertical	Ceiling tile	Duct exterior	Ducting	Locker metal

	Plexiglass Light cover	Ceiling vent	Concrete ceiling	Concrete ceiling low beam	Concrete floor	Quarry tile	Vinyl tile	Cold rm walls, metal	Casework wood, vert.	Locker wood	Partical board benchtop	Cold room floor
Avg. CPM	611 ± 4	656 ± 11	1101 ± 78	795 ± 77	1140 ± 66	1997 ± 28	738 ± 89	481 ± 21	536 ± 6	564 ± 17	735 ± 5	571 ± 63
MDCR	1000	1100	1700	1300	1700	2800	1200	900	900	1000	1200	1000
	Plexiglass Light cover	Ceiling vent	Concrete ceiling	Concrete ceiling low beam	Concrete floor	Quarry tile	Vinyl tile	Cold rm walls, metal	Casework wood, vert.	Locker wood	Partical board benchtop	Cold room floor

	Cold rm walls, glazed	Cold room ceiling	Double steel door	Concrete wall, painted
Avg. CPM	1031 ± 21	1138 ± 26	503 ± 8	666 ± 7
MDCR	1600	1700	900	1100
	Cold rm walls, glazed	Cold room ceiling	Double steel door	Concrete wall, painted

Reference Area Matrices and Associated Measurements

Scaler/rate meter: L2221 SN: 117370 Detector: 43-37A SN: 190672

Drywall	Vinyl wall covering	Average
5 ± 0.9	4 ± 0.9	5 ± 1

Counts/minute

Quarry tile	Concrete	Light fixture	Vinyl wall covering glue	Vinyl floor covering
13 ± 2	12 ± 0.5	11 ± 0.8	10 ± 1	8 ± 1

Counts/minute

Reference Area Matrices and Associated Measurements

Scaler/rate meter: L2221 **Detector:** 43-68B
SN: 138378 **SN:** 092511

Bentchtop, walls casework, vinyl/ tile, etc.	Ceiling tile	Concrete ceiling	Concrete floor w/ white mastic	Concrete floor w/ black mastic	Concrete floor chipped	1"X1" maroon tile	UTC Refrigerator
203 ± 31	406 ± 14	295 ± 19	279 ± 21	263 ± 14	259 ± 14	352 ± 30	273 ± 16
400	800	600	600	500	500	700	600

Scaler/rate meter: L2221 **Detector:** 43-68B
SN: 190192 **SN:** 095535

Bentchtop, walls casework, vinyl/ tile, etc.	Ceiling tile	Quarry tile
197 ± 29	364 ± 38	514 ± 21
400	700	900

Scaler/rate meter: L2221 **Detector:** 43-68B
SN: 84458 **SN:** 095535

Bentchtop, walls casework, vinyl/ tile, etc.	Ceiling tile	Quarry tile
198 ± 37	373 ± 9	516 ± 23
400	700	900

Scaler/rate meter: L2221 **Detector:** 43-68B
SN: 138379 **SN:** 122015

Bentchtop, walls casework, vinyl/ tile, etc.	Ceiling tile	Quarry tile
203 ± 20	403 ± 47	561 ± 13
500	700	1000