

### DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION FACILITIES DEVELOPMENT DIVISION

### OFFICE USE ONLY APPLICATION FOR HCAI SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP) APPLICATION #: OSP-0380 HCAI Special Seismic Certification Preapproval (OSP) X Type: New Renewal Manufacturer Information Manufacturer: Powerex, Inc. Manufacturer's Technical Representative: Joe Abt Mailing Address: 150 Production Drive, Harrison, OH 45030 Telephone: (513) 367-3273 Email: jabt@powerexinc.com Product Information Product Name: Medical Gas and Vacuum Systems Product Type: Medical Air and Vacuum Systems Product Model Number: See attachment Medical air and laboratory air units contain pumps, a receiver tank, controller and dryers. Medical gas General Description: automatic changeover manifolds are contained in wall mounted enclosures. Mounting Description: Medical air and laboratory air units are rigidly base mounted or mounted using neoprene pads, Medical gas automatic changeover manifolds are rigidly wall mounted. **Tested Seismic Enhancements:** Seismic enhancements made to the test units and/or modifications required to address anomalies during the tests shall be incorporated into the production units. **Applicant Information** Applicant Company Name: Dynamic Certification Laboratories Contact Person: Kelly Laplace

Mailing Address: 1315 Greg Parkway #109, Sparks, NV 89431

Telephone:	(775) 358-5085	Email:	kelly@shaketest.com

Title: Business Manager



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# DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION FACILITIES DEVELOPMENT DIVISION

California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)
Company Name: THE VMC GROUP
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Certification Method
GR-63-Core X ICC-ES AC156 IEEE 344 IEEE 693 NEBS 3
Other (Please Specify):
FOR CODE CO
Testing Laboratory
Company Name: DYNAMIC CERTIFICATION LABORATORY (DCL)
Contact Person: Kelly Laplace
Mailing Address: 1315 Greg St., Ste 109, Sparks NV 89431
Telephone: (775) 358-5085
O DATE: 01/23/2024
PLI
DATE: 01/23/2024



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OSP-0380

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Design Basis of Equipment or Components	mount		systems	vith neoprene pads, 4.5 for rigid base a, and 2.4 for rigid wall or base ations)
SDS (Design spectral response accel	eration at short perio	p(d, g) = 2.0		
ap (Amplification factor) =	2.5			
R <sub>p</sub> (Response modification factor) =				nally isolated systems - rigid base (without internal isolation))
$\Omega_0$ (System overstrength factor) =	2.0			
lp (Importance factor) =	1.5			
z/h (Height ratio factor) =	1			
Natural frequencies (Hz) =	See Attachment	DDECO		
Overall dimensions and weight =	See Attachment	Mp		
1 Million	HC	Ai	Ž	
HCAI Approval (For Office Use Only) -	Approval Expire	s on 01/23/2030	C FE	
Date: <u>1/23/2024</u>	<b>BY:</b> Timothy	/ Piland		
Name: Timothy Piland			Title:	Senior Structural Engineer
Special Seismic Certification Valid Up to; S	os (g) <u>≠ 2.0 : 01</u>	/23/2024	z/h =	1
Condition of Approval (if applicable):			S	
	PRNIA BUII	DING CODE		



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# Table 1 - Certified Components - Stacked Units, Scroll Air Systems (Systems Containing 2,3 and 5 HP Pumps, Flexible Base Mount)



lanufacturer: Powerex												
roduct Line: Medical Air a	nd Laboratory Air											
lounting: Flexible Base M	ount											
					· · · · · ·	is Containing 2, 3, and 5 HP Pun						
Medical Model Number	Laboratory Model	HP Per Set	Vertical	Total Number of	Vertically Stacked	Horizontally Arrayed Pumps		aximum Dimensions (		Max. Operating	Mounting <sup>3</sup>	Unit
	Number <sup>1</sup>		Receiver	Pumps	Pumps or Layers	Durden	Length	Width	Height	Weight (lb) <sup>2</sup>		
				1 1		Duplex		1 .		1 1		1
MSD0203	LSD0203	2	80	2	2	1	50	31	78	1,040		UUT1
N/A	LSD0203 (tested with alternate dryer)	2	80	2	2 P	CODF	74	32	62	1,090		UUT2
MSD0303	LSD0303	3	80	2	2-01		50	31	78	1,100	Flexible base	Interpolated
MSD0503	LSD0503	5	80	2	2	1	50	31	78	1,200	(neoprene) w/ internal isolation	Interpolated
MSD1004	LSD1004	10	120	4	4		78	32	77	1,800		Interpolated
MSD1005	N/A	10	200	4	4		83	32	84	1,900		Interpolated
MSD1506	N/A	15	240	6	2	377 0 1000	84	66	96	2,820		UUT4a/4b <sup>4</sup>
						Triplex		L				
MST0503	N/A	5	80	13,	3	0000 020	78	32	70	1650		Interpolated
N/A	LST0504	5	120	3	3	00-400	83	32	77	1,790	Flexible base	Interpolated
MST1005	LST1005	10	200	6	2	3	90	66	84	2800	(neoprene) w/ internal isolation	Interpolated
MST1505	N/A	15	200	9	3	3	90	66	84	3900		Interpolated
					BY	OT Quadruplex 200	0000					
MSQ0504	LSQ0504	5	120	4	4	1	77	32	77	1,870		UUT3
MSQ1005	LSQ1005	10	200	8	2	4	108	66	84	3,400	Flexible base	Interpolated
MSQ1006	N/A	10	240	8	2	04/040/000	108	66	96	3,530	(neoprene) w/	Interpolated
MSQ1505	N/A	15	200	12	DATE:	01/243/202	4 108	66	84	4,200	internal isolation	Interpolated
MSQ1506	N/A	15	240	12	3	4	108	66	96	4,260		UUT5b/UUT7 <sup>4</sup>
						Pentaplex		0				
MSP0504	N/A	5	120	5	1, 2	2	84	66	77	2,475		Extrapolated <sup>5</sup>
MSP0505	N/A	5	200	5	1, 2	2	84	66	84	2,600	Flexible base	Extrapolated <sup>5</sup>
MSP1505	N/A	15	200	15	2,3	3	90	148	84	5,100	(neoprene) w/	Extrapolated <sup>5</sup>
MSP1506	N/A	15	240	15	2,3	3	90	148	96	5,300	internal isolation	Extrapolated <sup>5</sup>

Table Continued on Next Page

1. Lab scroll units differ from medical scroll units by software change only.

2. Maximum dimensions and weights relate to options and receiver tank size.

3. Pump skids feature internal isolation. Skids with only dryers and tanks do not.

4. For units comprised of more than one skid, skids are structurally independent and flexibly attached. Flexible attachments are required between separate skids.

5. Extrapolated unit justification matrix is provided in Table 2.

#### Table 1 - Certified Components - Stacked Units, Scroll Air Systems (Continued) (Systems Containing 2,3 and 5 HP Pumps, Flexible Base Mount)



DCL Project Number: 43160-2301

Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air Mounting: Elexible Base Mount

nounting: Flexible Base IVI	ount											
						is Containing 2, 3, and 5 HP Pun						
Medical Model Number	Laboratory Model Number <sup>1</sup>	HP Per Set	Vertical Receiver	Total Number of Pumps	Vertically Stacked Pumps or Layers	Horizontally Arrayed Pumps	Length	kimum Dimensions Width	(in) <sup>2</sup> Height	Max. Operating Weight (lb) <sup>2</sup>	Mounting <sup>3</sup>	Unit
				<u> </u>		Hexaplex						
MSH0504	N/A	5	120	6	2	3	90	66	77	2,835		Extrapolated 4,5
MSH0505	N/A	5	200	6	2	COBr	90	66	84	2,975	Flexible base (neoprene) w/ internal	Extrapolated 4,5
MSH1006	N/A	10	240	12	3		108	73	96	4,250	isolation	Extrapolated 4,5
MSH1506	N/A	15	240	18	3, 3		94	150	96	6,020		Extrapolated 4,5
					Se Se	even to Twelve Pump Systems	145					
MSS0504	N/A	5	120	7	2	4 lower, 3 upper	103	66	82	2,900		Extrapolated 4,5
MSS0505	N/A	5	200	7	2	4 lower, 3 upper	103	66	84	3,190		Extrapolated 4,5
MSO0505	N/A	5	200	8	2	4//	103	66	84	3,350		Extrapolated 4,5
MSN0505	N/A	5	200	-9	3	3	94	66	84	3,900		Extrapolated 4,5
MSJ0505	N/A	5	200	10/	3	4 lower, 4 mid, 2 upper	104	66	84	3,700	Flexible base (neoprene) w/ internal	Extrapolated 4,5
MSJ0506	N/A	5	240	10	3	4 lower, 4 mid, 2 upper	104	66	96	3,900	isolation	Extrapolated 4,5
MSK0505	N/A	5	200	11	3	4 lower, 4 mid, 3 upper	104	66	84	3,900		Extrapolated 4,5
MSK0506	N/A	5	240	11		4 lower, 4 mid, 3 upper	104	66	96	4,175		Extrapolated 4,5
MSL0505	N/A	5	200	12	B β. I In	notny Filand	104	66	84	4,100		Extrapolated 4,5
MSL0506	N/A	5	240	12	3	4	104	66	96	4,360		Extrapolated 4,5

1. Lab scroll units differ from medical scroll units by software change only.

2. Maximum dimensions and weights relate to options and receiver tank size.

3. Pump skids feature internal isolation. Skids with only dryers and tanks do not. 4. For units comprised of more than one skid, skids are structurally independent and flexibly attached. Flexible attachments are required between separate skids.

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5. Extrapolated unit justification matrix is provided in Table 2.

# Table 2 - Justification Matrix for Extrapolation - Stacked Units, Scroll Air Systems (Systems Containing 2, 3 and 5 HP Pumps, Flexible Base Mount)



DCL Project Number: 43160-2301

Manufacturer: Powerex

**Product Line:** Medical Air and Laboratory Air **Mounting:** Flexible Base Mount

		Syste	ems Containing 2, 3 and 5 HP Pumps
Extrapolated Unit (Medical)	Extrapolated Unit (Laboratory)	Units Used for Extrapolation	Difference From Units Used for Extrapolation
MSP0504	N/A	UUT4 (MSD1504)	One fewer pump
MSP0505	N/A	UUT4 (MSD1504)	One fewer pump and larger 200 gal receiver (240 gal receiver tested in UUT5b/UUT7)
MSP1505	N/A	Interpolated unit MST1505	Has an additional pump skid similar to UUT4 and includes 24" spacing between each of the skids
MSP1506	N/A	Interpolated unit MST1505	Has an additional pump skid similar to UUT4 and includes 24" spacing between each of the skids
MSH0504	N/A	UUT4 (MSD1504)	Has 6 pumps in a two-high, three-wide configuration
MSH0505	N/A	UUT4 (MSD1504)	Has 6 pumps in a two-high, three-wide configuration and larger 200 gal receiver (240 gal receiver tested in UUT5b/UUT7)
MSH1006	N/A	UUT5b/UUT7 (MSQ1506)	Includes 6" space between the two system frame modules
MSH1506	N/A	Interpolated unit MST1505	Has additional pump skid and includes 24" spacing between each of the skids with 240 gal receiver similar to UUT5
MSS0504	N/A	UUT5b/UUT7 (MSQ1506)	One less row of pumps and a smaller receiver tank (one pump less than interpolated MSQ1005)
MSS0505	N/A	UUT5b/UUT7 (MSQ1506)	One less row of pumps and a smaller receiver tank (one pump less than interpolated MSQ1005)
MSO0505	N/A	UUT5b/UUT7 (MSQ1506)	One less row of pumps and a smaller receiver tank
MSN0505	N/A	UUT5b/UUT7 (MSQ1506)	One less column of pumps and a smaller receiver tank
MSJ0505	N/A	UUT5b/UUT7 (MSQ1506)	Two fewer pumps in the top row and a smaller receiver tank
MSJ0506	N/A	UUT5b/UUT7 (MSQ1506)	Two fewer pumps in the top row
MSK0505	N/A	UUT5b/UUT7 (MSQ1506)	One fewer pump in the top row and a smaller receiver tank
M5K0506	N/A	UUT5b/UUT7 (MSQ1506)	One fewer pump in the top row
MSL0505	N/A	UUT5b/UUT7 (MSQ1506)	Smaller receiver tank
MSL0506	N/A	UUT5b/UUT7 (MSQ1506)	Software change only

# Table 3 - Certified Components - Stacked Units, Scroll Air Systems (Systems Containing 2, 3 and 5 HP Pumps, Rigid Base Mount)



DCL Project Number: 43160-2301

Manufacturer: Powerex

**Product Line:** Medical Air and Laboratory Air **Mounting:** Rigid Base Mount

						s Containing 2, 3, and				(: ) 2			
Aedical Model Number	Laboratory Model Number <sup>1</sup>	HP Per Set	Vertical Receiver Gallons	Total Number of Pumps	Vertically Stacked Pumps or Layers	Horizontally Arrayed Pumps	# Independently Mounted & Plumbed Assemblies	Length	num Dimension Width	s (in) * Height	Max. Operating Weight (lb) <sup>2</sup>	Mounting <sup>3</sup>	Unit
	Number	Jei	Galions	Pullips	Pullips of Layers	Duplex	Fluttibed Assettibiles	Length	width	Height	weight (ib)	<u> </u>	
MSD02A3	LSD02A3	2	80	2	2	1	1	50	34	74	1,090		UUT32
MSD03A3	LSD03A3	3	80	2	2		1	50	34	74	1,120	1	Interpola
MSD05A3	LSD05A3	5	80	2	2			50	34	74	1,300	1 1	Interpola
MSD10A4	LSD10A4	10	120	4	4		2	51	73	75	2,120	Rigid base w/	Interpola
MSD10A5	LSD10A5	10	200	4	4	1	2	51	73	85	2,360	internal isolation	Interpola
MSD10A6	LSD10A6	10	240	4	4	1	2	51	73	94	2,470	1 1	Interpola
MSD15A5	LSD15A5	15	200	6	2	] (  3 ) 🗛	2	60	73	86	3,030	1 1	Interpola
MSD15A6	LSD15A6	15	240	6	2	3	2	60	73	94	3,090	1 1	Interpola
				$\sim$		Triplex	6						
MST03A3	LST03A3	3	80	3/	3	ISP1038	S 2	51	73	74	1585		Interpola
MST05A3	LST05A3	5	80		3	1	2	51	73	74	1826	1 1	Interpol
MST05A4	LST05A4	5	120	3	3	1	2	51	73	75	1,936	1 1	Interpol
MST10A4	LST10A4	10	120	6			2	60	73	75	2,995	1	Interpol
MST10A5	LST10A5	10	200	6	BY3 IIII	iothy Pila	ind <sub>2</sub>	60	73	86	3230	Rigid base w/	Interpol
MST10A6	LST10A6	10	240	6	3	2	2	60	73	94	3320	internal isolation	Interpol
MST15A4	LST15A4	15	120	9	3	3	2	73	73	75	3930	1	Interpol
MST15A5	LST15A5	15	200	9		01302/		73	73	86	4201	1 1	Interpol
MST15A6	LST15A6	15	240	9		01/20/2	2 2	73	73	94	4260	1 1	Interpol
					Recocococo	Quadruplex		V					
MSQ05A4	LSQ05A4	5	120	4	4		REAL INTO A	51	73	75	2,180		Interpola
MSQ10A5	LSQ10A5	10	200	8	2	4	2	60	73	86	3,790	1 1	Interpola
MSQ10A6	LSQ10A6	10	240	8	2	4	2	60	73	94	3,840	Rigid base w/	Interpola
MSQ15A5	LSQ15A5	15	200	12	3	4	2	73	73	86	5,620	internal isolation	Interpola
MSQ15A6	LSQ15A6	15	240	12	3	4	2	73	73	94	5,680	1 1	Interpol
					AP	Pentaplex	161						·
MSP15A5	LSP15A5	15	200	15	3,4,4,4	JIL4DIN	2	85	73	86	6,080	Rigid base w/	Interpola
MSP15A6	LSP15A6	15	240	15	3,4,4,4	4	2	86	73	91	6,140	internal isolation	UUT33i
						Hexaplex							
MSH05A4	LSH05A4	5	120	6	2	3	2	60	75	75	2,990		Interpol
MSH05A5	LSH05A5	5	200	6	2	3	2	60	75	86	3,230	1 1	Interpol
MSH10A6	LSH10A6	10	240	12	3	4	2	73	73	94	5,680	Rigid base w/ internal isolation	Interpol
MSH15A5	LSH15A5	15	200	18	3	6	3	85	113	86	7,750		Extrapola
MSH15A6	LSH15A6	15	240	18	3	6	3	85	113	94	7,810	1 1	Extrapola
						Nine-plex						· · · ·	
MSN05A5	LSN05A5	5	200	9	3	3	2	73	73	86	4,680	Rigid base w/ internal isolation	Interpola

2. Maximum dimensions and weights relate to options and receiver tank size.

3. Pump skids feature internal isolation. Skids with only dryers and tanks do not.

4. For units comprised of more than one skid, skids are structurally independent and flexibly attached. Flexible attachments are required between separate skids.

5. Extrapolated unit justification matrix is provided in Table 4.



Table 5 - Certified Components - Stacked Units, Scroll Air Systems

(Systems Containing 7.5 and 10 HP Pumps, Rigid Base Mount, Partially Welded Compressor Skid Design)



Unit

Extrapolated <sup>5</sup>

Extrapolated <sup>5</sup>

Extrapolated <sup>5</sup>

UUT10a/10b<sup>6</sup>

Interpolated

Mounting<sup>4</sup>

isolation

isolation

isolation

#### DCL Project Number: 43160-2301 Manufacturer: Powerex Product Line: Medical Air and Laboratory Air Mounting: Rigid Base Mount Systems Containing 7.5 and 10 HP Pumps, Rigid Base Mount Max. Maximum Dimensions (in)<sup>2</sup> Laboratory Air Model Vertical Receiver Total Number of Vertically Stacked Pumps Horizontally Medical Air Model Number HP Per Set Operating Number Gallons Pumps or Layers Arrayed Pumps Length Width Height Weight (lb.) Systems with 80 to 240 Gallon Tanks Duplex 61 MSD0753 LSD0753 7.5 80 2 2 1 66 68 2,205 61 MSD0754 LSD0754 7.5 120 2 2 1 66 78 2,260 Rigid base w/ internal 2 2 1 61 >66 78 MSD10B4 LSD10B4 10 120 2,310 4 MSD15B4 LSD15B4 15 120 4 61 66 78 2,390 1 MSD20B4 LSD20B4 20 120 4 61 66 78 2.500 4 1 Triplex 7.5 200 3 61 66 81 MST0755 LST0755 3 1 2,400 LST10B5 10 3 3 1 61 66 81 MST10B5 200 2.550 Imotr Pilar 79 90 81 MST15B5 LST15B5 15 200 6 4,200 Rigid base w/ internal MST15B6 LST15B6 15 240 6 2 79 90 93 4,300 3 MST20B5 LST20B5 20 200 6 3 2 79 90 81 4,450 6 3 Z3/22U 4 79 90 93 MST20B6 LST20B6 20 240 4,550 Quadruplex MSQ0755 LSQ0755 7.5 200 4 4 1 66 61 81 2,650 4 1 66 61 81 MSQ10B5 LSQ10B5 10 200 4 2,750 8 4 2 79 MSQ15B5 LSQ15B5 15 200 90 81 4,450 Rigid base w/ internal 2 79 MSQ15B6 LSO15B6 15 240 8 4 90 93 4.550 20 79 90 81 MSQ20B5 LSQ20B5 200 8 4 12 4,700

UUT11aii/bii <sup>6</sup>		4,800	93	90 <sup>3</sup>	79	2		8	240	20	LSQ20B6	MSQ20B6
						ntaplex	Pe					
e w/ internal Extrapolated <sup>5</sup>	Rigid base w/ internal	7,000	93	138	76	3	4 max, partial fill	10	240	15	LSP15B6	MSP15B6
lation Extrapolated <sup>5</sup>	isolation	7,200	93	138	76	3	4 max, partial fill	10	240	20	LSP20B6	MSP20B6
						exaplex	He					
e w/ internal Extrapolated 5	Rigid base w/ internal	8,200	93	138	76	3	4	12	240	15	LSH15B6	MSH15B6
lation Extrapolated <sup>5</sup>	isolation	8,600	93	138	76	3	4	12	240	20	LSH20B6	MSH20B6
	-					ued on Next Page	Table Contin					

1. Lab scroll units differ from medical scroll units by software change only.

2. Maximum dimensions and weights are calculated, and take into account options and receiver tank size.

3. Maximum width shown for 11aii/bii is an overall width dimension that includes an 18" separation between the two equipment skids.

4. Pump skids feature internal isolation. Skids with dryers and tanks do not.

5. Extrapolated unit justification matrix is provided in Table 6.

6. For units comprised of more than one skid, skids are structurally independent and flexibly attached. Flexible attachments are required between separate skids.

Table 5 - Certified Components - Stacked Units, Scroll Air Systems (Continued)

(Systems Containing 7.5 and 10 HP Pumps, Rigid Base Mount, Partially Welded Compressor Skid Design)



DCL Project Number: 43160-2301

Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

			S	stems Containing 7.5 and	10 HP Pumps, Rigi	d Base Mount	:								
Laboratory Air Model Number <sup>1</sup>	HP Per Set	Vertical Receiver Gallons	Total Number of Pumps	Vertically Stacked Pumps or Layers	Horizontally Arrayed Pumps	<u></u>		. /	Max. Operating	Mounting <sup>3</sup>	Unit				
			Systems with 4	00 or 660 Gallon Tanks (Ta	nk senarately mou				Weight (Ib) *						
			Systems with 4												
					itapiex										
LSP15B7	15	400	10	4 max, partial fill	3	96	158	102	7,400		Extrapolated <sup>4,5</sup> , w/ UUT12c tank				
LSP20B7	20	400	10	4 max, partial fill	3	96	158	102	7,600	Rigid base w/ internal	Extrapolated <sup>4,5</sup> , w/ UUT12c tan				
LSP15B8	15	660	10	4 max, partial fill	3	99	163	127	8,100	isolation	Extrapolated <sup>4,5</sup> , w/ UUT15b tan				
LSP20B8	20	660	10	4 max, partial fill	3	99	163	127	8,300		Extrapolated <sup>4,5</sup> , w/ UUT15b tan				
			2	He	xaplex	<u>yaaaayy</u>	K								
LSH15B7	15	400	12	4SP-	0380	96	158	102	8,600		Extrapolated <sup>4,5</sup> , w/ UUT12c tank				
LSH20B7	20	400	12	4	3	96	158	102	9,000	Rigid base w/ internal	Extrapolated <sup>4,5</sup> , w/ UUT12c tank				
LSH15B8	15	660	12	4	3	99	163	127	9,300	isolation	Extrapolated <sup>4,5</sup> , w/ UUT15b tan				
LSH20B8	20	660	12 B	Y: Timothy	Piland	99	163	127	9,700		Extrapolated <sup>4,5</sup> , w/ UUT15b tan				
	Laboratory Air Model Number <sup>1</sup> LSP15B7 LSP20B7 LSP20B8 LSP20B8 LSP20B8 LSP20B8 LSP20B7 LSH15B7 LSH15B7 LSH15B7	Laboratory Air Model Number <sup>1</sup> HP Per Set LSP15B7 15 LSP20B7 20 LSP15B8 15 LSP20B8 20 LSH15B7 15 LSH15B7 15 LSH20B7 20 LSH15B8 15	Laboratory Air Model Number 1         HP Per Set         Vertical Receiver Gallons           LSP15B7         15         400           LSP20B7         20         400           LSP15B8         15         660           LSP20B8         20         660           LSH15B7         15         400           LSP20B8         20         660           LSH15B7         15         400           LSH20B7         20         400           LSH15B7         15         660           LSH20B7         20         400           LSH15B8         15         660	Laboratory Air Model Number <sup>1</sup> HP Per Set         Vertical Receiver Gallons         Total Number of Pumps           LSP15B7         15         400         10           LSP15B7         15         400         10           LSP15B7         20         400         10           LSP15B8         15         660         10           LSP20B7         20         660         10           LSP15B8         15         660         10           LSP20B8         20         660         10           LSH15B7         15         400         12           LSH15B7         20         400         12           LSH15B8         15         660         12	Laboratory Air Model Number 1HP Per SetVertical Receiver GallonsTotal Number of PumpsVertically Stacked Pumps or LayersSystems with 400 or 660 Gallon Tanks (To Systems with 400 or 660 Gallon Tanks (To PerLSP15B715400104 max, partial fillLSP15B720400104 max, partial fillLSP15B815660104 max, partial fillLSP15B715400104 max, partial fillLSP15B815660104 max, partial fillLSP15B820660104 max, partial fillLSP15B815660124LSH15B715400124LSH15B715660124	Systems Containing 7.5 and 10 HP Pumps, RigiLaboratory Air Model Number 1HP Per SetVertical Receiver GallonsTotal Number of PumpsVertically Stacked PumpsHorizontally Arrayed PumpsSystems with 40 or 660 Gallon Tanks (Tank separately mou- PentaplexLSP15B715400104 max, partial fill3LSP20B720400104 max, partial fill3LSP15B815660104 max, partial fill3LSP20B820660104 max, partial fill3LSH15B7154001243LSH15B7204001243LSH15B8156601243LSH15B8156601243	Systems Containing 7.5 and 10 HP Pumps, Rigid Base Mount         Laboratory Air Model Number 1       HP Per Set       Vertical Receiver Gallons       Total Number of Pumps       Vertically Stacked Pumps or Layers       Horizontally Arrayed Pumps       Maxim Length         Systems with 400 or 660 Gallon Tanks (Tank separately mounted and flext Pentaplex         Pentaplex         LSP15B7       15       400       10       4 max, partial fill       3       96         LSP20B7       20       400       10       4 max, partial fill       3       99         LSP15B8       15       660       10       4 max, partial fill       3       99         LSP20B8       20       660       10       4 max, partial fill       3       99         LSP15B7       15       400       12       4       3       96         LSP15B8       15       660       12       4       3       99         LSP15B7       15       400       12       4       3       96         LSP15B7       15       400       12       4       3       96         LSP15B7       15       660       12       4       3       96         LSH15B8       15 </td <td>Systems Containing 7.5 and 10 HP Pumps, Rigid Base MountLaboratory Air Model Number 1HP Per SetVertical Receiver GallonsTotal Number of PumpsVertically Stacked Pumps or LayersHorizontally Arrayed PumpsMaximums in ImageVertical Receiver GallonsTotal Number of PumpsVertically Stacked Pumps or LayersHorizontally Arrayed PumpsMaximums in ImageVertical Receiver GallonsTotal Number of PumpsVertically Stacked Pumps or LayersHorizontally Arrayed PumpsWidthVertical Receiver Systems with 40 or 660 Gallon Tanks (Tank separately mounted and flex/blued)Vertical Receiver Systems 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Tanks (Tank separately mount of and Separately mount of</td><td>Systems Containing 7.5 and 10 HP Pumps, Rigid Base MountLaboratory Air Model Number 1HP Per SetVertical Receive GallonsTotal Number of PumpsVertically Stacked Pumps or LayersHorizontally Arrayed PumpMaximum SimularMaximum Simular Operating Weight (lb.)Vertical Receive GallonsTotal Number of PumpsVertically Stacked Pumps or LayersHorizontally Arrayed PumpMaximum Simular LengthWidthHeightOperating Weight (lb.)Vertical Receive GallonsPumps660 Gallon Takes (Tank separately mounted and Flexibury Pumps)NoticeNoticeOperating Weight (lb.)Vertical Receive Separate Pumps15400104 max, partial fill3961581027,400LSP15B715400104 max, partial fill3961581027,600LSP15B815660104 max, partial fill3991631278,300LSP20B820660104 max, partial fill3991631278,300LSH15B7154001243961581028,600LSH15B7154001243961581029,000LSH15B8156601243961581029,000LSH15B8156601243961581029,000<tr <tr=""><tr< td=""><td>Systems Containing 7.5 and 1 HP Pumps, Rigid 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WeithtMax. Operating Weight (lb) 2Max. Operating Weight (lb) 2Max. Operating Weight (lb) 2Max. Operating Weight (lb) 2Max. Operating Weight (lb) 2Max. Operating Weight (lb) 2Mounting 3LSP15B715400104 max, partial fill3961581027,600Rigid base w/ internal isolationLSP15B815660104 max, partial fill3961581027,600Rigid base w/ internal isolationLSP15B715400104 max, partial fill3991631278,100LSP15B815660104 max, partial fill3991631278,300LSP15B7154001243961581028,600LSH15B7154001243961581028,600LSH15B8156601243961581029,000LSH15B8156601243991631279,300</td></tr<></tr></td>				Systems Containing 7.5 and LNP Pumps, Rigid Base Mount.Laboratory Air Model Number 1HP Per SetVertical Receiver GallonsTotal Number of PumpsVertically Stacked Pumps or LayersHorizontally Arrayed PumpsMaximumerists (in) 2 LengthMaximumerists (in) 2 LengthUertical Second Colspan="4">Systems with 400 F660 Gallon Tanks (Tank separately mount of and Separately mount of	Systems Containing 7.5 and 10 HP Pumps, Rigid Base MountLaboratory Air Model Number 1HP Per SetVertical Receive GallonsTotal Number of PumpsVertically Stacked Pumps or LayersHorizontally Arrayed PumpMaximum SimularMaximum Simular Operating Weight (lb.)Vertical Receive GallonsTotal Number of PumpsVertically Stacked Pumps or LayersHorizontally Arrayed PumpMaximum Simular LengthWidthHeightOperating Weight (lb.)Vertical Receive GallonsPumps660 Gallon Takes (Tank separately mounted and Flexibury Pumps)NoticeNoticeOperating Weight (lb.)Vertical Receive Separate Pumps15400104 max, partial fill3961581027,400LSP15B715400104 max, partial fill3961581027,600LSP15B815660104 max, partial fill3991631278,300LSP20B820660104 max, partial fill3991631278,300LSH15B7154001243961581028,600LSH15B7154001243961581029,000LSH15B8156601243961581029,000LSH15B8156601243961581029,000 <tr <tr=""><tr< td=""><td>Systems Containing 7.5 and 1 HP Pumps, Rigid Base MountLaboratory Air Model Number 1Her Per Set GallonsTotal Number of PumpsVertically Stacked Pumps or LayersHorizontally Arrayed PumpsMax: LengthMax. 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Systems Containing 7.5 and 1 HP Pumps, Rigid Base MountLaboratory Air Model Number 1Her Per Set GallonsTotal Number of PumpsVertically Stacked Pumps or LayersHorizontally Arrayed PumpsMax: LengthMax. WeithtMax. Operating Weight (lb) 2Max. Operating Weight (lb) 2Max. Operating Weight (lb) 2Max. Operating Weight (lb) 2Max. Operating Weight (lb) 2Max. Operating Weight (lb) 2Mounting 3LSP15B715400104 max, partial fill3961581027,600Rigid base w/ internal isolationLSP15B815660104 max, partial fill3961581027,600Rigid base w/ internal isolationLSP15B715400104 max, partial fill3991631278,100LSP15B815660104 max, partial fill3991631278,300LSP15B7154001243961581028,600LSH15B7154001243961581028,600LSH15B8156601243961581029,000LSH15B8156601243991631279,300															

Tank Model No.	Description			ax. Dimensions	(in)	Moight (lb)	Mounting	11.53
Tarik Wodel No.	Description	DAIE:	01/23/2024 <sub>Length</sub>	Width	Height	Weight (lb)	Mounting	Unit
AR063700AV	400 gal		38	47	102	640	Rigid base	UUT12c
AR660000AV	660 gal		42	42	127	1,500	Nigiu Dase	UUT15b

OCK.

1. Lab scroll units differ from medical scroll units by software change only.

2. Maximum dimensions and weights are calculated, and take into account options and receiver tank size.

3. Pump skids feature internal isolation. Skids with dryers and tanks do not.

4. Extrapolated unit justification matrix is provided in Table 6.

5. For units comprised of more than one skid, skids are structurally independent and flexibly attached. Flexible attachments are required between separate skids.

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(Systems Containing 7.5 and 10 HP Pumps, Rigid Base Mount, Partially Welded Compressor Skid Design)

nufacturer: Powerex			
oduct Line: Medical Air	and Laboratory Air		
ounting: Rigid Base Mo	unt		
			Systems Containing 7.5 and 10 HP Pumps
Extrapolated Unit (Medical)	Extrapolated Unit (Laboratory)	Units Used for Extrapolation	Difference From Units Used for Extrapolation
MSD0753	LSD0753	UUT10 (MSD15B4)	Two fewer pump-motor assemblies in rack; tank is smaller from UUT1
MSD0754	LSD0754	UUT10 (MSD15B4)	Two fewer pump-motor assemblies in rack
MSD10B4	LSD10B4	UUT10 (MSD15B4)	Two fewer pump-motor assemblies in rack; same pump-motor assemblies as in UUT11
MSP15B6	LSP15B6	UUT10 (MSD15B4), UUT11 (MSQ20B6), UUT7 (MSQ1506)	10 total pumps; one 2-high compressor stack (depopulated variant of UUT10a without controller) and two 4-high compressor stacks identical to UUT1aii using 7.5 HP pumps and motors instead of 10 HP. Controller is a depopulated variant of the controller tested on UUT7 (10 of 12 circuits). The tank/dryer skid is identical to UUT5b and featuring dryers tested in UUT6 or UUT9
MSP20B6	LSP20B6	UUT10 (MSD15B4), UUT11 (MSQ20B6), UUT7 (MSQ1506)	10 total pumps; one 2-high compressor stack (depopulated 10 hp variant of UUT10a without controller) and two 4-high compressor stacks (dentical to UUT11aii. Controller is a depopulated variant of the controller tested on UUT7 (10 of 12 circuits). The tank/dryer skid is identical to UUT5b and featuring dryers tested in UUT6 or UUT9
MSH15B6	LSH15B6	UUT10 (MSD15B4), UUT11 (MSQ20B6), UUT7 (MSQ1506)	12 total pumps; one 4-high compressor stack (10HP variant of UUT10a) and two 4-high compressor stacks which are 7.5 HP variants of UUT11aii. Controller is a variant of the controller tested on UUT7 (using 12 circuits). The tank/dryer skid is identical to UUT5 and featuring dryers tested in UUT6 or UUT9
MSH20B6	LSH20B6	UUT10 (MSD15B4), UUT11 (MSQ20B6), UUT7 (MSQ1506)	12 total pumps; one 4-high compressor stack (variant of UUT10a without controller) and two 4-high compressor stacks identical to UUT1aii using 7.5 HP pumps and motors instead of 10 HP. Controller is a variant of the controller tested on UUT7 (using 12 circuits). The tank/dryer skid is identical to UUT5 b and featuring dryers tested in UUT6 or UUT9
MSP15B7	LSP15B7	UUT10 (MSD15B4), UUT11 (MSQ20B6), UUT7 (MSQ1506), UUT12c (400gal receiver)	Tim Same as WSP15B6 above, except tank/dryer skid deletes receiver tank and added separately mounted/flexibly plumbed 400gal receiver as in UUT12c
MSP20B7	LSP20B7	UUT10 (MSD15B4), UUT11 (M <mark>SQ20B6), U</mark> UT7 (MSQ1506), UUT12c (400gal receiver)	Same as MSP2086 above, except tank/dryer skid deletes receiver tank, add separately mounted/flexibly plumbed 400gal receiver as in UUT12c
MSP15B8	LSP15B8	UUT10 (MSD15B4), UUT11 (MSQ20B6), UUT7 (MSQ1506), UUT15b (660gal receiver)	Same as MSP1586 above, except tank/dryer skid deletes receiver tank, add separately mounted/flexibly plumbed 660gal receiver as in UUT15b
MSP20B8	LSP20B8	UUT10 (MSD15B4), UUT11 (MSQ20B6), UUT7 (MSQ1506), UUT15b (660gal receiver)	Same as MSP2086 above, except tank/dryer skid deletes receiver tank, add separately mounted/flexibly plumbed 660gal receiver as in UUT15b
MSH15B7	LSH15B7	UUT10 (MSD15B4), UUT11 (MSQ20B6), UUT7 (MSQ1506), UUT12c (400gal receiver)	Same as MSH15B6 above, except tank/dryer skid deletes receiver tank; add separately mounted/flexibly plumbed 400gal receiver as in UUT12c
MSH20B7	LSH20B7	UUT10 (MSD15B4), UUT11 (MSQ20B6), UUT7 (MSQ1506), UUT12c (400gal receiver)	Same as MSH20B6 above, except tank/dryer skid deletes receiver tank; add separately mounted/flexibly plumbed 400gal receiver as in UUT12c
MSH15B8	LSH15B8	UUT10 (MSD15B4), UUT11 (MSQ20B6), UUT7 (MSQ1506), UUT15b (660gal receiver)	Same as MSH1586 above, except tank/dryer skid deletes receiver tank; add separately mounted/flexibly plumbed 660gal receiver as in UUT15b
MSH20B8	LSH20B8	UUT10 (MSD15B4), UUT11 (MSQ20B6), UUT7 (MSQ1506), UUT15b (660gal receiver)	Same as MSH2086 above, except tank/dryer skid deletes receiver tank; add separately mounted/flexibly plumbed 660gal receiver as in UUT15b

01/22/2024

Table 7 - Certified Components - Stacked Units, Scroll Air Systems

#### (Systems Containing 7.5 and 10 HP Pumps, Rigid Base Mount, Bolted Compressor Skid Design)



DCL Project Number: 43160-2301

Manufacturer: Powerex

**Product Line:** Medical Air and Laboratory Air **Mounting:** Rigid Base Mount

					Systems Containing	g 7.5 and 10 HP Pum	ps, Rigid Base	e Mount				
Medical Air Model	Laboratory Air Model	HP Per Set	Vertical Receiver	Total Number of	Vertically Stacked	Horizontally	Maximu	ım Dimensio	ns (in) <sup>2</sup>	Max. Operating	3	Unit
Number	Number <sup>1</sup>	HP Per Set	Gallons	Pumps	Pumps or Layers	Arrayed Pumps	Length	Width	Height	Weight (lb) <sup>2</sup>	Mounting <sup>3</sup>	Unit
					Systems	with 120 to 240 Gal	lon Tanks					
			· · · · · ·			Duplex					,	
MSD07C4	LSD07C4	7.5	120	2	2		60	69	75.5	1,950		Extrapolated
MSD07C5	LSD07C5	7.5	200	2	2	CODF	60	69	82	2,020		Extrapolated
MSD10C4	LSD10C4	10	120	2	201	1	60	69	75.5	2,150	1 -	Extrapolated
MSD10C5	LSD10C5	10	200	2	2		60	69	82	2,200	1 1	Extrapolated
MSD10C6	LSD10C6	10	240	2	2	1	60	69	94	2,250	1 . 1	Extrapolated
MSD15C5	LSD15C5	15	200	4	4		60	69	82	2,775	Rigid base w/ internal	Extrapolated
MSD15C6	LSD15C6	15	240	4	4		60	69	94	2,850	isolation	Extrapolated
MSD15C4	LSD15B4	15	120	4	4		60	69	75.5	2,860	1 -	Extrapolated
MSD20C4	LSD20B4	20	120	4	4 00		60	69	75.5	2,970	- +	Extrapolated
MSD20C5	LSD2004	20	200	4	4 03	5P-038	0 60	69	82	3,020	┥ ┝	Extrapolated
MSD20C5	LSD20C5	20	240	4	4	1	60	69	94	3,175	┥ ┝	Extrapolated
M3D20C0	L3D20C0	20	240	4	4	Triplex	00	05	54	3,173		Extrapolated
MST07C4	LST07C4	7.5	120	3	<b>RV</b> <sup>3</sup> Tim	hthy1Dilo	60	69	75.5	2,210		Extrapolated
MST10C4	LST10C4	10	120	3		puny-piia	60	69	75.5	2300	- +	Extrapolated
MST07C5	LST07C5	7.5	200	3		1	60	69	82	2,430	┥ ┝	Extrapolated
MST07C5	LST10C6	10	200	3	<u> </u>		60	69	94	2,430	┥ ┝	
				3		01/23/2	$ \land \land \land \land \land \land$	69	82		Rigid base w/ internal	Extrapolated
MST10C5	LST10C5	10	200		DA <sup>3</sup> E.	U1/23/2	20604	1333		2,700	isolation	Extrapolated
MST15C5	LST15C5	15	200	6	3	2	70.5	69	82	3,760	4 –	Extrapolated
MST15C6	LST15C6	15	240	6	3	2	70.5	69	82	3,830	4 –	Extrapolated
MST20C5	LST20C5	20	200	6	3	2	70.5	69	82	4,160	4	Extrapolated
MST20C6	LST20C6	20	240	6	3	2	70.5	69	82	4,229		Extrapolated
			I			Quadruplex	60		1 00		1 1	
MSQ07C5 MSQ07C6	LSQ07C5 LSQ07C6	7.5 7.5	200 240	4	4		60 60	69	82 94	3,080 3,150	┥ ┝	Extrapolated Extrapolated
MSQ10C5	LSQ10C5	10	240	4		1	60	69	82	3,310	┥ ┝	Extrapolated
MSQ10C5 MSQ10C6	LSQ10C5	10	240	4	4 Bl	TIDIN	60	69	94	3,375	Rigid base w/ internal	UUT35 <sup>4</sup>
MSQ15C5	LSQ15C5	15	200	8	4	2	70.5	69	82	4,495	isolation	Interpolated
MSQ15C6	LSQ15C6	15	240	8	4	2	70.5	69	94	4,562	1 1	Interpolated
MSQ20C5	LSQ20C5	20	200	8	4	2	70.5	69	82	5,495		Interpolated
MSQ20C6	LSQ20C6	20	240	8	4	2	70.5	69	94	5,568		Interpolated
			·			Pentaplex	70.5				1 1	
MSP10C5	LSP10C5	10	200	5	3,2	2	70.5	69	82	3,810	4 -	Extrapolated <sup>5,6</sup>
MSP10C6	LSP10C6	15	240	5	3,2	2	70.5	69	94	3,910	Rigid base w/ internal	Extrapolated 5,6
MSP15C5	LSP15C5	15	200	10	3,3,4	3	90.5	69	87 94	5,920	isolation	Extrapolated 5,6
MSP15C6	LSP15C6	15	240	10	3,3,4	3	90.5	69	-	5,995	╡╶──┝	Extrapolated <sup>5,6</sup>
MSP20C6	LSP20C6	20	240	10	3,3,4	3 e Continued on Nex	90.5	69	94	6,680		Extrapolated 5,6

1. Lab scroll units differ from medical scroll units by software change only.

2. Maximum dimensions and weights are calculated, and take into account options and receiver tank size.

3. Compressor skids feature internal isolation. Receiver/dryer skids do not.

4. The weight and dimensions of the described model include compressor skid UUT35 plus the tank/dryer skid frame tested with UUT10a, dryer tested in UUT33i, and 240 gallon tank tested with UUT30a. UUT35 is the most seismically vulnerable compressor skid.

5. For units comprised of more than one skid, skids are structurally independent and flexibly connected. Flexible attachments are required between separate skids.

6. Extrapolated unit justification matrix is provided in Table 8.

#### Special Seismic Certification Table 7 - Certified Components - Stacked Units, Scroll Air Systems (Continued) (Systems Containing 7.5 and 10 HP Pumps, Rigid Base Mount, Bolted Compressor Skid Design)



DCL Project Number: 43160-2301

Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Mounting: Rigid Base Mount

					Systems Containin	g 7.5 and 10 HP Pur	nps, Rigid Bas	e Mount				
Medical Air Model	Laboratory Air Model	HP Per Set	Vertical Receiver	Total Number of	Vertically Stacked	Horizontally	Maxim	um Dimensio	ns (in) ²	Max. Operating	Mounting <sup>3</sup>	Unit
Number	Number <sup>1</sup>		Gallons	Pumps	Pumps or Layers	Arrayed Pumps	Length	Width	Height	Weight (lb) <sup>2</sup>	Ŭ Ŭ	
					5	Hexaplex and great	ter					
MSH10C5	LSH10C5	10	200	6	3		70.5	69	82	4,200		Interpolated
MSH10C6	LSH10C6	10	240	6	3	TOTAL VILLE	70.5	69	82	4,300	1	Interpolated
MSO10C6	LSO10C6	10	240	8	4	2	70.5	69	94	5,570		Interpolated
MSN10C6	LSN10C6	10	240	9	3	3	90.5	69	94	6,230	Rigid base w/ internal isolation	Interpolated
MSH15C5	LSH15C5	15	200	12	4	) (W3/A)	90.5	69	87	6,610		Interpolated
MSH15C6	LSH15C6	15	240	12	4	3	90.5	69	94	6,690	1 -	Interpolated
MSH20C6	LSH20C6	20	240	,12	4	3	90.5	69	94	7,470	1 -	UUT36 <sup>4</sup>
				Expandable models	(Factory built with struc	ture and controls for	accommode	ating addition	al pump-mo	tor sets)		
MSD07C4xxx-EX3	LSD07C4xxx-EX3	7.5	120	2, expandable to 3	2 exp. to 3	1	60	69	75.5	2,210		Extrapolated 5,6
MSD07C5xxx-EX3	LSD07C5xxx-EX3	7.5	200	2 <mark>, expandab</mark> le to 3	2 exp. to 3	1	60	69	82	2,430	1 -	Extrapolated 5,6
MSD07C6xxx-EX3	LSD07C6xxx-EX3	7.5	240	2, expandable to 3	2 exp. to 3	1 <sup>1</sup> D1	60	69	94	2,500	1 [	Extrapolated 5,6
MSD10C5xxx-EX3	LSD10C5xxx-EX3	10	200	2, expandable to 3	D 2 exp. to 3	ptny₁Plla	II G0	69	82	2,700	1 –	Extrapolated 5,6
MSD10C6xxx-EX3	LSD10C6xxx-EX3	10	240	2, expandable to 3	2 exp. to 3	1	60	69	94	2,500	1 –	Extrapolated 5,6
MST07C5xxx-EX4	LST07C5xxx-EX4	7.5	200	3 <mark>, expandab</mark> le to 4	3 exp. to 4	1	60	69	82	3,080	1	Extrapolated 5,6
MST07C6xxx-EX4	LST07C6xxx-EX4	7.5	240	3, expandable to 4	3 exp. to 4	01/02/	0 60 /	69	94	3,150	1 [	Extrapolated 5,6
MST10C5xxx-EX4	LST10C5xxx-EX4	10	200	3, expandable to 4	3 exp. to 4		60	69	82	3,310	1 –	Extrapolated 5,6
MST10C6xxx-EX4	LST10C6xxx-EX4	10	240	3, expandable to 4	3 exp. to 4	777717777	60	69	94	3,375	1 -	Extrapolated 5,6
MSD15C5xxx-EX3	LSD15C5xxx-EX3	15	200	4, expandable to 6	2 exp. to 3	2	70.5	69	82	3,760	Rigid base w/ internal	Extrapolated 5,6
MSD15C6xxx-EX3	LSD15C6xxx-EX3	15	240	4, expandable to 6	2 exp. to 3	2	70.5	69	94	3,830	isolation	Extrapolated 5,6
MSD20C5xxx-EX3	LSD20C5xxx-EX3	20	200	4, expandable to 6	2 exp. to 3	2	70.5	69	82	4,160	1 –	Extrapolated 5,6
MSD20C6xxx-EX3	LSD20C6xxx-EX3	20	240	4, expandable to 6	2 exp. to 3	2	70.5	69	82	4,229	1 -	Extrapolated 5,6
MST15C5xxx-EX4	LST15C5xxx-EX4	15	200	6, expandable to 8	3 exp. to 4	2	70.5	69	82	4,495		Extrapolated 5,6
MST15C6xxx-EX4	LST15C6xxx-EX4	15	240	6, expandable to 8	3 exp. to 4	2	70.5	69	94	4,562		Extrapolated 5,6
MST20C5xxx-EX4	LST20C5xxx-EX4	20	200	6, expandable to 8	3 exp. to 4	2	70.5	69	82	5,495	↓ ∟	Extrapolated 5,6
MST20C6xxx-EX4	LST20C6xxx-EX4	20	240	6, expandable to 8	3 exp. to 4	2	70.5	69	94	5,568	4	Extrapolated 5,6
MSQ15C5xxx-EX5	LSQ15C5xxx-EX5	15	200	8, expandable to 10	2,3,3 exp. to 3,3,4	3	90.5	69	82	5,920	┥ ┝─	Extrapolated 5,6
MSQ15C6xxx-EX5	LSQ15C6xxx-EX5	15	240	8, expandable to 10	2,3,3 exp. to 3,3,4	3	90.5	69	94	5,995	┥ ┝─	Extrapolated 5,6
MSP15C6xxx-EX6	LSP15C6xxx-EX6	15	240 240	10, expandable to 12	3,3,4 exp. to 4,4,4	3	90.5 90.5	69 69	94 94	6,690 7,470	┥ ┝─	Extrapolated <sup>5,6</sup>
MSP20C6xxx-EX6	LSP20C6xxx-EX6	20	240	10, expandable to 12	3,3,4 exp. to 4,4,4	3 Continued on Next P		69	94	7,470		Extrapolated 5,6

1. Lab scroll units differ from medical scroll units by software change only.

2. Maximum dimensions and weights are calculated, and take into account options and receiver tank size.

3. Compressor skids feature internal isolation. Tank/dryer skids do not.

4. The weight and dimensions of the described model include pump skid UUT36 plus the tank/dryer skid frame tested with UUT11bii, dryer tested in UUT33i, and 240 gallon tank tested with UUT30a. UUT36 is the largest and heaviest compressor skid.

5. Extrapolated unit justification matrix is provided in Table 8.

6. For units comprised of more than one skid, skids are structurally independent and flexibly connected. Flexible attachments are required between separate skids.

Table 7 - Certified Components - Stacked Units, Scroll Air Systems (Continued)

#### (Systems Containing 7.5 and 10 HP Pumps, Rigid Base Mount, Bolted Compressor Skid Design)



DCL Project Number: 43160-2301

Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Mounting: Rigid Base Mount

					Systems Containin	g 7.5 and 10 HP Pum	ps, Rigid Ba	se Mount				
Medical Air Model	Laboratory Air Model	HP Per Set	Vertical Receiver	Total Number of	Vertically Stacked	Horizontally	Maxim	um Dimensior	ns (in) ²	Max. Operating	Mounting <sup>3</sup>	Unit
Number <sup>1</sup>	Number <sup>1</sup>		Gallons	Pumps	Pumps or Layers	Arrayed Pumps	Length	Width	Height	Weight (lb) <sup>2</sup>	Ŭ	
				Systems	with 400 or 660 Gallon	Tanks (Tank separate	ly mounted	and flexibly p	lumbed)			
				P	entaplex (dimensions a	nd weight without th	e separately	mounted tan	k)			
MSP15C7	LSP15C7	15	400	10	4 max, partial fill	3	90.5	69	87	5,350		Extrapolated 4,5
MSP15C8	LSP15C8	15	660	10	4 max, partial fill	3	90.5	69	87	5,350	Rigid base w/ internal	Extrapolated 4,5
MSP20C7	LSP20C7	20	400	10	4 max, partial fill	3	90.5	69	87	6,130	isolation	Extrapolated 4,5
MSP20C8	LSP20C8	20	660	10	4 max, partial fill	3	90.5	69	87	6,130		Extrapolated 4,5
						Hexaplex			7			
MSH15C7	LSH15C7	15	400	12	4	3	90.5	69	87	6,060		Extrapolated 4,5
MSH15C8	LSH15C8	15	660	12	4	3	90.5	69	87	6,060	Rigid base w/ internal	Extrapolated 4,5
MSH20C7	LSH20C7	20	400	12	4	5P-038	90.5	69	87	6,930	isolation	Extrapolated 4,5
MSH20C8	LSH20C8	20	660	12	4	3	90.5	69	87	6,930	] [	Extrapolated 4,5

1. Lab scroll units differ from medical scroll units by software change only.

Maximum dimensions and weights are calculated, and take into account options and receiver tank size.

3. Compressor skids feature internal isolation.

4. Extrapolated unit justification matrix is provided in Table 8.

5. For units comprised of more than one skid, skids are structurally independent and flexibly connected. Flexible attachments are required between separate skids.



**BY:** Timothy Piland

**Special Seismic Certification** Table 8 - Justification Matrix for Extrapolation - Stacked Units, Scroll Air Systems (Systems Containing 7.5 and 10 HP Pumps, Rigid Base Mount, Bolted Compressor Skid Design) CERTIFICATION DCL Project Number: 43160-2301 Manufacturer: Powerex Product Line: Medical Air and Laboratory Air Mounting: Rigid Base Mount Systems Containing 7.5 and 10 HP Pumps Extrapolated Unit **Extrapolated Unit** Units Used for Extrapolation **Difference From Units Used for Extrapolation** (Medical) (Laboratory) MSD07C4 LSD07C4 MSD07C5 LSD07C5 The extrapolated systems feature (1) two-high by one-wide compressor skid while both tested units featured four-high compressor skids. UUT35 represents the most seismically vulnerable compressor UUT35 (MSQ10C6 compressor skid), MSD10C4 LSD10C4 skid (four-high by one-wide) while UUT36 represents the largest and heaviest compressor skid (four-high by three-wide). Tank and dryer skids have identical subcomponents bookended in Tables 25 UUT36 (MSH20C6 compressor skid) and 26 with a rigid platform base similar to what was tested in UUT10a and UUT11bii. MSD10C5 LSD10C5 MSD10C6 LSD10C6 MSD15C5 LSD15C5 MSD15C6 LSD15C6 The extrapolated systems feature (1) four-high by one-wide compressor skid that is equivalent or lighter weight to UUT35. UUT35 represents the most seismically vulnerable compressor skid (four-high MSD15C4 LSD15B4 UUT35 (MSQ10C6 compressor skid), by one-wide) while UUT36 represents the largest and heaviest compressor skid (four-high by three-wide). Tank and dryer skids have identical subcomponents bookended in Tables 25 and 26 with a rigid UUT36 (MSH20C6 compressor skid) MSD20C4 LSD20B4 platform base similar to what was tested in UUT10a and UUT11bii. MSD20C5 LSD20C5 MSD20C6 LSD20C6 MST07C4 15T07C4 The extrapolated systems feature (1) three-high by one-wide compressor skid with equivalent or lighter weight to the skid tested in UUT35. UUT35 represents the most seismically vulnerable MST10C4 LST10C4 UUT35 (MSQ10C6 compressor skid), compressor skid (four-high by one-wide) while UUT36 represents the largest and heaviest compressor skid (four-high by three-wide). Tank and dryer skids have identical subcomponents bookended in UUT36 (MSH20C6 compressor skid) MST07C5 LST07C5 Tables 25 and 26 with a rigid platform base similar to what was tested in UUT10a and UUT11bii. MST10C6 LST10C6 MST10C5 LST10C5 MST15C5 LST15C5 The extrapolated systems feature (1) three-high by two-wide compressor skid while both tested units featured four-high compressor skids. UUT35 represents the most seismically vulnerable UUT35 (MSQ10C6 compressor skid), MST15C6 LST15C6 compressor skid (four-high by one-wide) while UUT36 represents the largest and heaviest compressor skid (four-high by three-wide). Tank and dryer skids have identical subcomponents bookended in UUT36 (MSH20C6 compressor skid) Tables 25 and 26 with a rigid platform base similar to what was tested in UUT10a and UUT11bii. MST20C5 LST20C5 MST20C6 LST20C6 MSQ07C5 LSQ07C5 The extrapolated systems feature (1) four-high by one-wide compressor skid that are equivalent or lighter weight to UUT35. UUT35 represents the most seismically vulnerable compressor skid (four-UUT35 (MSQ10C6 compressor skid) MSQ07C6 LSO07C6 nigh by one-wide) while UUT36 represents the largest and heaviest compressor skid (four-high by three-wide). Tank and dryer skids have identical subcomponents bookended in Tables 25 and 26 with a UUT36 (MSH20C6 compressor skid) rigid platform base similar to what was tested in UUT10a and UUT11bii. MSQ10C5 LSQ10C5 The extrapolated systems feature (1) three-high by one-wide and (1) two-high by one-wide structurally independent and flexibly connected compressor skids. UUT35 represents the most seismically MSP10C5 LSP10C5 UUT35 (MSQ10C6 compressor skid) vulnerable compressor skid (four-high by one-wide) while UUT36 represents the largest and heaviest compressor skid (four-high by three-wide). Tank and dryer skids have identical subcomponents UUT36 (MSH20C6 compressor skid) MSP10C6 LSP10C6 D bookended in Tables 25 and 26 with a rigid platform base similar to what was tested in UUT10a and UUT11bii. MSP15C5 LSP15C5 The extrapolated systems feature (2) three-high by one-wide and (1) four-high by one-wide structurally independent and flexibly connected compressor skids. UUT35 represents the most seismically UUT35 (MSQ10C6 compressor skid). LSP15C6 MSP15C6 vulnerable compressor skid (four-high by one-wide) while UUT36 represents the largest and heaviest compressor skid (four-high by three-wide). Tank and dryer skids have identical subcomponents UUT36 (MSH20C6 compressor skid) MSP20C6 LSP20C6 bookended in Tables 25 and 26 with a rigid platform base similar to what was tested in UUT10a and UUT11bii. The extrapolated systems feature (3) three-high by two-wide structurally independent and flexibly connected compressor skids. UUUT35 represents the most seismically vulnerable compressor skid MSH10C5 LSH10C5 UUT35 (MSQ10C6 compressor skid), four-high by one-wide) while UUT36 represents the largest and heaviest compressor skid (four-high by three-wide). Tank and dryer skids have identical subcomponents bookended in Tables 25 and 26 UUT36 (MSH20C6 compressor skid) MSH10C6 LSH10C6 with a rigid platform base similar to what was tested in UUT10a and UUT11bii. The extrapolated systems feature (2) three-high by three-wide structurally independent and flexibly connected compressor skids. UUT35 represents the most seismically vulnerable compressor skid UUT35 (MSQ10C6 compressor skid), MSN10C6 LSN10C6 (four-high by one-wide) while UUT36 represents the largest and heaviest compressor skid (four-high by three-wide). Tank and dryer skids have identical subcomponents bookended in Tables 25 and 26 UUT36 (MSH20C6 compressor skid) with a rigid platform base similar to what was tested in UUT11bii. MSD07C4xxx-EX3 LSD07C4xxx-EX3 MSD07C5xxx-EX3 LSD07C5xxx-EX3 The extrapolated systems initially feature (1) two-high by one-wide compressor skid that can be later populated by (1) pump in the top position to create (1) three-high by one-wide compressor skid. UUT35 (MSQ10C6 compressor skid), UUT35 represents the most seismically vulnerable compressor skid (four-high by one-wide) while UUT36 represents the largest and heaviest compressor skid (four-high by three-wide). Tank and dryer MSD07C6xxx-EX3 LSD07C6xxx-EX3 UUT36 (MSH20C6 compressor skid) MSD10C5xxx-EX3 LSD10C5xxx-EX3 skids have identical subcomponents bookended in Tables 25 and 26 with a rigid platform base similar to what was tested in UUT10a and UUT11bii. MSD10C6xxx-EX3 LSD10C6xxx-EX3 MST07C5xxx-EX4 LST07C5xxx-EX4 The extrapolated systems initially feature (1) three-high by one-wide compressor skid that can be later populated by (1) pump in the top position to create (1) four-high by one-wide compressor skid. MST07C6xxx-EX4 LST07C6xxx-EX4 UUT35 (MSQ10C6 compressor skid) UUT35 represents the most seismically vulnerable compressor skid (four-high by one-wide) while UUT36 represents the largest and heaviest compressor skid (four-high by three-wide). Tank and dryer MST10C5xxx-EX4 LST10C5xxx-EX4 UUT36 (MSH20C6 compressor skid) skids have identical subcomponents bookended in Tables 25 and 26 with a rigid platform base similar to what was tested in UUT10a and UUT11bii MST10C6xxx-EX4 LST10C6xxx-EX4

Special Seismic Certification Table 8 - Justification Matrix for Extrapolation - Stacked Units, Medical and Laboratory Scroll (Continued) (Systems Containing 7.5 and 10 HP Pumps, Rigid Base Mount, Bolted Compressor Skid Design)



DCL Project Number:			
Manufacturer: Powe			
	al Air and Laboratory Ai	r	
Mounting: Rigid Bas	e Mount		Systems Containing 7.5 and 10 HP Pumps
Extrapolated Unit	Extrapolated Unit		Systems containing 7.5 and 10 mm runnys
(Medical)	(Laboratory)	Units Used for Extrapolation	Difference From Units Used for Extrapolation
MSD15C5xxx-EX3	LSD15C5xxx-EX3		
MSD15C6xxx-EX3	LSD15C6xxx-EX3	UUT35 (MSQ10C6 compressor skid),	The extrapolated systems initially feature (1) two-high by two-wide compressor skid that can be later populated by (2) pumps in the top position to create (1) three-high by two-wide compressor skid. UUT35 represents the most seismically vulnerable compressor skid (four-high by one-wide) while UUT36 represents the largest and heaviest compressor skid (four-high by three-wide). Tank and dryer
MSD20C5xxx-EX3	LSD20C5xxx-EX3	UUT36 (MSH20C6 compressor skid)	skids have identical subcomponents bookended in Tables 25 and 26 with a rigid platform base similar to what was tested in UUT10b and UUT11bii.
MSD20C6xxx-EX3	LSD20C6xxx-EX3		FURTHER
MST15C5xxx-EX4	LST15C5xxx-EX4		
MST15C6xxx-EX4	LST15C6xxx-EX4	UUT35 (MSQ10C6 compressor skid),	The extrapolated systems initially feature (1) three-high by one-wide compressor skid that can be later populated by (1) pump in the top position to create (1) four-high by one-wide compressor skid. UUT35 represents the most seismically vulnerable compressor skid (four-high by one-wide) while UUT36 represents the largest and heaviest compressor skid (four-high by three-wide). Tank and dryer
MST20C5xxx-EX4	LST20C5xxx-EX4	UUT36 (MSH20C6 compressor skid)	Solid tepresente an oscientinativi cancer bac components bookended in Tables 25 and 26 with a rigid platform base similar to what was tested in ULTIDB and ULTIDE.
MST20C6xxx-EX4	LST20C6xxx-EX4		
MSQ15C5xxx-EX5	LSQ15C5xxx-EX5	UUT35 (MSQ10C6 compressor skid),	The extrapolated systems initially feature (1) two-high by one-wide and (2) three-high by one-wide structurally independent and flexibly connected compressor skids. Two compressor skids can be later populated by (3) pumps in the top position of each skid to create a system of (3) three-high by one-wide and (1) four-high by one-wide structurally independent and flexibly connected compressor skids. Two compressor skids can be later populated by (3) pumps in the top position of each skid to create a system of (3) three-high by one-wide and (1) four-high by one-wide structurally independent and flexibly connected compressor skids.
MSQ15C6xxx-EX5	LSQ15C6xxx-EX5	UUT36 (MSH20C6 compressor skid)	skids. UUT35 represents the most seismically vulnerable compressor skid (four-high by one-wide) while UUT36 represents the largest and heaviest compressor skid (four-high by three-wide). Tank and dryer skids have identical subcomponents bookended in Tables 25 and 26 with a rigid platform base similar to what was tested in UUT10b and UUT11bii.
MSP15C6xxx-EX6	LSP15C6xxx-EX6	UUT35 (MSQ10C6 compressor skid),	The extrapolated systems initially feature (2) three-high by one-wide and (1) four-high by one-wide structurally independent and flexibly connected compressor skids. Two compressor skids can be later populated by (3) pumps in the top position of each skid to create a system of (3) four-high by one-wide structurally independent and flexibly connected compressor skids. UUT35 represents the most
MSP20C6xxx-EX6	LSP20C6xxx-EX6	UUT36 (MSH20C6 compressor skid)	seismically vulnerable compressor skid (four-high by one-wide) while UUT36 represents the largest and heaviest compressor skid (four-high by three-wide). Tank and dryer skids have identical subcomponents bookended in Tables 25 and 26 with a rigid platform base similar to what was tested in UUT10b and UUT11bii.
MSP15C7	LSP15C7		
MSP20C7	LSP20C7	UUT35 (MSQ10C6 compressor skid),	The extrapolated systems feature (1) maximum of four-high by three-wide partially compressor skid lighter than the compressor skid tested in UUT36. The structurally independent and flexibly attached tank options were tested in UUT12C and UUT15b. UUT35 represents the most seismically vulnerable compressor skid (four-high by one-wide) while UUT36 represents the largest and heaviest
MSP15C8	LSP15C8	UUT36 (MSH20C6 compressor skid)	compressor skid (four-high by three-wide). Dryer skids have identical subcomponents bookended in Tables 25 and 26 with a rigid platform base similar to what was tested in UUT10b and UUT11bii.
MSP20C8	LSP20C8		
MSH15C7	LSH15C7		
MSH20C7	LSH20C7	UUT35 (MSQ10C6 compressor skid),	The extrapolated systems feature (1) four-high by three-wide compressor skid the same weight or lighter than UUT36. The structurally independent and flexibly attached tank options were tested in UUT12C and UUT15b. UUT35 represents the most seismically vulnerable compressor skid (four-high by one-wide) while UUT36 represents the largest and heaviest compressor skid (four-high by three-
MSH15C8	LSH15C8	UUT36 (MSH20C6 compressor skid)	wide). Dryer skids have identical subcomponents bookended in Tables 25 and 26 with a rigid platform base similar to what was tested in UUT10b and UUT11bii.
MSH20C8	LSH20C8		
2	6		BUILDING

### Special Seismic Certification Table 9 - Certified Components - Compact Duplex Scroll Air Systems



DCL Project Number: 43160-2301

#### Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

#### Mounting: Rigid Base Mount

Medical Air Model	Lab Air Model	Нр	Vertical Receiver	Total Number	Vertically Stacked	Horizontally Arrayed	Maxin	num Dimensio	ons (in)	Max. Operating	2	Unit
Number	Number <sup>1</sup>	пр	(gallons)	of Compressors	Pumps Per Enclosure	Pumps Per Enclosure	Length	Width	Height	Weight (lb.)	Mounting <sup>2</sup>	Unit
MSD07C3	LSD07C3	7.5	80	2		2	46.5	34.5	75.5	1,440	Rigid base w/	Extrapolated <sup>3</sup>
MSD10C3	LSD10C3	10	80	2	1	2	46.5	34.5	75.5	1,490	internal isolation	UUT34
4. Laboration and related by	والمطاومين وخالمه والمعالم	· · · · · · · · · · · · · · · · · · ·	and the second such A									

1. Lab units are physically identical to medical air units (software change only).

2. Compressor pump-motor sets are isolated.

3. Extrapolated model is less seismically vulnerable than UUT34 and all subcomponents were tested or certified in other configurations. Subcomponents of the extrapolated model were directly tested in or certified by UUT1, UUT10a, UUT32, UUT35, and UUT42.

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 Table 10 - Certified Components - Reciprocating Piston Compressor Stacked Units,

 Flexible Base Mount (Compressor Skids), Rigid Base Mount (Tank/Dryer/Controller Skids)



DCL Project Number: 43160-2301

Del Froject Number. 45	100-2301												
Manufacturer: Powerex													
Product Line: Medical Ai	r, Laboratory Air, and Instr	ument Air											
Mounting: Flexible Base	Mount (Compressor Skids	), Rigid Base Mount (Tar	nk/Dryer,	/Controller Skids)									
Medical Air Model	Laboratory Air Model	Instrument Air Model	НР	Vertical Receiver	Total Number	Vertically Stacked	Horizontally Arrayed	Maxim	num Dimensio		Max. Operating	Mounting <sup>3</sup>	Unit
Number	Number <sup>1</sup>	Number <sup>1</sup>		Gallons	of Pumps	Pumps or Layers	pump-motor sets	Length	Width <sup>2</sup>	Height	Weight (lb) <sup>2</sup>	Wounting	
							Duplex						
MAPD0303	LAPD0303	N/A	3	80	2	2	1	54	71	68	1,250	Flexible base (neoprene) - [pump skid]; rigid base	Extrapolated
N/A	N/A	IOPDXX04	3, 5	120	2	2	OD1-	54	71	81	1,720	mount [tank/dryer/controller skid]	UUT42 <sup>4</sup>
MAPD0504	LAPD0504	N/A	5	120	2	2		54	71	82	1,950		Interpolated
MAPD0754	LAPD0754	IOPD0754	7.5	120	2	2 0000	WWWWW 1	60	71	82	2,160		Interpolated
MAPD1004	LAPD1004	IOPD1004	10	120	2	2		60	71	82	2,260		Interpolated
MAPD1504	LAPD1504	IOPD1504	15	120	2	2		60	71	82	2,360		Interpolated
MAPD1005	LAPD1005	N/A	10	200	2	2		65	73	84	2,450	Flexible base mount (neoprene) w/ internal isolation [pump skid]; rigid base mount [tank/dryer/controller	Interpolated
MAPD1505	LAPD1505	N/A	15	200	2	2		65	73	84	2,550	skid]	Interpolated
MAPD1006	LAPD1006	N/A	10	240	2	2	1	65	73	96	2,450		Interpolated
N/A	N/A	IOPDXX06	7.5, 15	240	2	2SF	1-0380	65	73	96	2,560		UUT43a,b <sup>5</sup>
MAPD1506	LAPD1506	N/A	15	240	2	2	1	65	73	96	2,800		Extrapolated <sup>5</sup>
					NNN MARAA		Triplex						
MAPT0504	LAPT0504	N/A	5	120	ÐV	• Ti21 oth	v Dil <mark>b</mark> nd	54	105	82	2,250	Flexible base (neoprene) - [pump skid]; rigid base	Extrapolated 6,7
MAPT0505	LAPT0505	N/A	5	200	3	• 2,1	y Filanu	65	105	84	2,370	mount [tank/dryer/controller skid]	Extrapolated 6,7
MAPT0754	LAPT0754	IOPT0754	7.5	120	3	2,1	1	54	105	82	2,950		Extrapolated 6,7
MAPT0755	LAPT0755	IOPT0755	7.5	200	3	2,1	1	65	105	84	3,050	Flexible base mount (neoprene) w/ internal isolation	Extrapolated 6,7
MAPT1005	LAPT1005	IOPT1005	10	200	3	2,1	1/23/202	65	105	84	3,115	[pump skid]; rigid base mount	Extrapolated 6,7
MAPT1006	LAPT1006	IOPT1006	10	240	3	2,1	1	65	105	94	3,200	[tank/dryer/controller skid]	Extrapolated 6,7
MAPT1506	LAPT1506	IOPT1506	15	240	3	2,1	1	65	105	94	3,650		Extrapolated 6,7
						NANANANYA	Quadplex	7997	N NY				
MAPQ0505	LAPQ0505	N/A	5	200	4	2,2	1	65	105	84	3,110	Flexible base (neoprene) - [pump skid]; rigid base mount [tank/dryer/controller skid]	Extrapolated 6,7
MAPQ0755	LAPQ0755	IOPQ0755	7.5	200	4	2,2	1	65	105	84	3,800	Flexible base mount (neoprene) w/ internal isolation	Extrapolated 6,7
MAPQ1006	LAPQ1006	IOPQ1006	10	240	4	2,2	1	65	105	94	3,950	[pump skid]; rigid base mount	Extrapolated 6,7
MAPQ1506	LAPQ1506	IOPQ1506	15	240	4	2,2	- TAIG	65	105	94	4,250	[tank/dryer/controller skid]	Extrapolated 6,7

1 Laboratory Air models differ from Medical by software only. Instrument Air Models differ from Medical in software and by use of higher pressure rated receiver tanks tested in UUT42 and UUT43b.

2. Maximum dimensions and weights are calculated and take into account options and receiver tank size. The width dimension includes a 4-inch gap between skids. Compressor skids have identical dimensions.

3. Compressor skids with Compressors 7.5 HP or greater have isolated pump/motor sets. Compressor skids with compressors 5 HP or under are not internally isolated.

4. UUT42 was tested with (1) 3 HP pump in the bottom position and (1) 5 HP pump in the top position. The receiver tested was 120 gal with a 300 psi-rated construction. The unit tested with a 4-inch gap between compressor and receiver skids and were flexibly connected.

Continued on Next Page

5. UUT43a is a compressor skid tested with (1) 7.5 HP pump in the bottom position and (1) 15 HP pump in the top position. UUT43b is the heaviest tank/dryer/controller skid. Both skids were tested in the same shake with a 4-inch gap.

6. Extrapolated unit justification matrix is provided in Table 11.

7. For units comprised of more than one skid, skids are structurally independent and flexibly attached. Flexible attachments are required between separate skids.

#### Table 10 - Certified Components - Reciprocating Piston Compressor Stacked Units (Continued), Flexible Base Mount (Compressor Skids), Rigid Base Mount (Tank/Dryer/Controller Skids)



DCL Project Number: 43160-2301

Manufacturer: Powerex													
Product Line: Medical Air,	, Laboratory Air, and Instr	ument Air											
Mounting: Flexible Base M	Mount (Compressor Skids	), Rigid Base Mount (Tanl	k/Dryer,	/Controller Skids)									
Medical Air Model	Laboratory Air Model	Instrument Air Model	НР	Vertical Receiver	Total Number	Vertically Stacked	Horizontally Arrayed	Maximu	um Dimensio	ons (in) <sup>2</sup>	Max. Operating	Mounting <sup>3</sup>	Unit
Number	Number <sup>1</sup>	Number <sup>1</sup>	nr	Gallons	of Pumps	Pumps or Layers	pump-motor sets	Length	Width	Height	Weight (lb) <sup>2</sup>	Mounting	onic
						Expandabl	e - Duplex to Triplex						
MAPD0505-EX3	LAPD0505-EX3	N/A	5	200	2 exp to 3	1,1 exp to 2,1	1	54	105	84	2,370	Flexible base (neoprene) - [pump skid]; rigid base mount [tank/dryer/controller skid]	Extrapolated 4,5
MAPD0755-EX3	LAPD0755-EX3	IOPD0755-EX3	7.5	200	2 exp to 3	1,1 exp to 2,1	UDF	65	105	84	3,050	Flexible base mount (neoprene) w/ internal isolation	Extrapolated 4,5
MAPD1006-EX3	LAPD1006-EX3	IOPD1006-EX3	10	240	2 exp to 3	1,1 exp to 2,1		65	105	94	3,200	[pump skid]; rigid base mount	Extrapolated 4,5
MAPD1506-EX3	LAPD1506-EX3	IOPD1506-EX3	15	240	2 exp to 3	1,1 exp to 2,1	1	65	105	94	3,650	[tank/dryer/controller skid]	Extrapolated 4,5
						Expandable	<ul> <li>Triplex to Quadplex</li> </ul>						
MAPT0506-EX4	LAPT0506-EX4	N/A	5	240	3 exp to 4	2,1 exp to 2,2		54	105	96	2,800	Flexible base (neoprene) - [pump skid]; rigid base mount [tank/dryer skid]	Extrapolated 4,5
MAPT0756-EX4	LAPT0756-EX4	IOPT0756-EX4	7.5	240	3 exp to 4	2,1 exp to 2,2		65	105	84	3,800	Flexible base mount (neoprene) w/ internal isolation	Extrapolated 4,5
MAPT1006-EX4	LAPT1006-EX4	IOPT1006-EX4	10	240	3 exp to 4	2,1 exp to 2,2	1	65	105	94	3,950	[numn skid]: rigid base mount [tank/drver skid]	Extrapolated 4,5
MAPT1506-EX4	LAPT1506-EX4	IOPT1506-EX4	15	240	3 exp to 4	2,1 exp to 2,2	0320	65	105	94	4,250	[partip steal) tight save mount [tank/aryer stea]	Extrapolated 4,5

1 Laboratory Air models differ from Medical by software only. Instrument Air Models differ from Medical in software and by use of higher pressure rated receiver tanks tested in UUT42 and UUT43b.

2. Maximum dimensions and weights are calculated and take into account options and receiver tank size. The width dimension includes a 4-inch gap between skids. Compressor skids have identical dimensions.

3. Compressor skids with Compressors 7.5 HP or greater have isolated pump/motor sets. Compressor skids with compressors 5 HP or under are not internally isolated.

4. Extrapolated unit justification matrix is provided in Table 11.

5. For units comprised of more than one skid, skids are structurally independent and flexibly attached. Flexible attachments are required between separate skids.



#### Special Seismic Certification Table 11 - Justification Matrix for Extrapolation - Reciprocating Piston Compressor Stacked Units



DCL Project Number: 43160-2301

#### Manufacturer: Powerex

Product Line: Medical Air, Laboratory Air, and Instrument Air Mounting: Flexible Base Mount (Compressor Skids), Rigid Base Mount (Tank/Dryer/Controller Skids)

			Systems Co	Intaining Reciprocating Piston Compressors
Extrapolated Unit (Medical)	Extrapolated Unit (Laboratory)	Extrapolated Unit (Instrument)	Units Used for Extrapolation	Difference From Units Used for Extrapolation
MAPT0504	LAPT0504	N/A	UUT42 (IOPDXX04)	Additional structurally independent and flexibly attached 1-high partial fill compressor-skid. UUT42 represents the lightest and heaviest compressor/motor
MAPT0505	LAPT0505	N/A	00142 (10PDAX04)	assemblies on a 2-high compressor skid without internal isolation.
MAPT0754	LAPT0754	IOPT0754	UUT42 (IOPDXX04)	
MAPT0755	LAPT0755	IOPT0755		Additional structurally independent and flexibly attached 1-high partial fill compressor-skid. UUT42 represents the lightest and heaviest compressor/motor
MAPT1005	LAPT1005	IOPT1005		assemblies on a 2-high compressor skid without internal isolation. UUT43 represents the largest/heaviest and smallest/lightest compressors on a 2-high skid
MAPT1006	LAPT1006	IOPT1006		with internal isolation.
MAPT1506	LAPT1506	IOPT1506	UUT43a,b (IOPDXX06)	
MAPQ0505	LAPQ0505	N/A	UUT42 (IOPDXX04)	
MAPQ0755	LAPQ0755	IOPQ0755		Systems use (2) identical, structurally independent and flexibly attached 2-high compressor skids. UUT42 represents the lightest and heaviest
MAPQ1006	LAPQ1006	IOPQ1006		Compressor/motor assemblies on a 2-high compressor skid without internal isolation. UUT43 represents the largest/heaviest and smallest/lightest
MAPQ1506	LAPQ1506	IOPQ1506	UUT43a,b (IOPDXX06)	
MAPD0505-EX3	LAPD0505-EX3	N/A	UUT42 (IOPDXX04)	Systems are initially installed with (2) structurally independent and flexibly attached one-high compressor skids. One skid can be populated by (1) additional
MAPD0755-EX3	LAPD0755-EX3	IOPD0755-EX3		compressor to create a system with (1) 1-high and (1) 2-high compressor skils. UUT42 represents the lightest and heaviest compressor/more semblies on
MAPD1006-EX3	LAPD1006-EX3	IOPD1006-EX3		2-high compressor skid without internal isolation. UUT43 represents the largest/heaviest and smallest/lightest compressors on a 2-high skid with internal
MAPD1506-EX3	LAPD1506-EX3	IOPD1506-EX3	UUT43a,b (IOPDXX06)	isolation.
MAPT0506-EX4	LAPT0506-EX4	N/A	UUT42 (IOPDXX04)	Systems are initially installed with (2) structurally independent and flexibly attached one-high compressor skids. One skid can be populated by (1) additional
MAPT0756-EX4	LAPT0756-EX4	IOPT0756-EX4		compressor to create a system with (1) one-high and (1) two-high compressor skids. UUT42 represents the lightest and heaviest compressor/motor assembli
MAPT1006-EX4	LAPT1006-EX4	IOPT1006-EX4		on a 2-high compressor skid without internal isolation. UUT43 represents the largest/heaviest and smallest/lightest compressors on a 2-high skid with internal
MAPT1506-EX4	LAPT1506-EX4	IOPT1506-EX4	UUT43a,b (IOPDXX06)	isolation.

BUILDING CODE

#### Table 12 - Certified Components - Rotary Tooth Oil Free Air Systems



DCL Project Number: 43160	-2201										
Manufacturer: Powerex	-2501										
Product Line: Medical Air an	d Laboratory Air										
Mounting: Rigid Base Mount	t										
Medical Air Model Number	Lab Air Model	НР	Vertical Receiver	Number of Compressor	Number of Compressors per Enclosure	Maxin	num Dimensio	ns (in) <sup>2</sup>	Max. Operating	Mounting <sup>4</sup>	Unit
	Number <sup>1</sup>		Gallons	Enclosures		Length	Width	Height	Weight (lb) <sup>3</sup>	Woulding	onic
					Duplex Systems						
MDRC05074FA5	LDRC05072FA5	50 x 2	400	2		232	116	102	8,260	Rigid base w/ internal isolation	UUT12a,b,c <sup>5, 6</sup>
					Triplex Systems		•				
MTRC05074FA5	LTRC05074KA5	50 x 3	400	3		332	116	102	11,190	Rigid base w/ internal isolation	Same As 7
					Quadruplex Systems	10					
MQRC05074FA5	LQRC05074FA5	50 x 4	400	4		412	152	102	14,120	Rigid base w/ internal isolation	Same As <sup>7</sup>
MQRC05084FA5	LQRC05084FA5	50 x 4	660	4,	1	412	166	127	14,980	Rigid base w/ internal isolation	Same As <sup>7</sup> with tank from UUT15b <sup>8</sup>
1. Lab units are physically ide	ntical to medical air un	its (software chang	e only).	11.			0				

2. Dimensions include 24 inch spacing between system components. System component skids are independently mounted and flexibly connected. Flexible connections are required between separate skids.

3. Weight is sum of all system components.

4. Compressor pump skids are internally isolated. Dryer and receiver tank skids are not.

5. Only one compressor enclosure tested in UUT12a (systems consist of 2 to 4 identical enclosures independently mounted and flexibly connected).

6. Dimensions and weight shown for the MDRC05074FA5 system are calculated assuming the duplex system contains two of the compressor enclosures tested in UUT12a along with the dryer/controller and 400 gallon receiver tank tested in UUT12b and UUT12c.

7. Units are the same as the unit tested, except with additional enclosures identical to that tested in UUT12a, all independently mounted and flexibly connected.

8. Dimensions and weight shown for the MQRC05084FA5 system are calculated assuming the quadruplex system contains four of the compressor enclosures tested in UUT12a along with the dryer/controller tested in UUT12b and the 660 gallon receiver tank tested in UUT15b.



#### Table 13 - Certified Components - Scroll Enclosed (SE) Air Systems



DCL Project Number: 43160-2301

Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

ounting: Rigid Base Mount					Number of	Vertically Stacked	Horizontally	Maxi	num Dimensio	ns (in)			
Medical Air Model Number <sup>1</sup>	Lab Air Model Number 1,2	HP Per Pump	Total HP	Vertical Receiver (gallons)	Compressor Enclosures	Pumps Per Enclosure	Arrayed Pumps Per Enclosure	Length	Width	Height	Max. Operating Weight (lb)	Mounting <sup>3</sup>	Unit
			Duplex Syst	ems (individual enclos	ed compressor units	with structurally inc	dependent and flexi	bly attached tan	k/dryer/control	l skids)			
MSED1003x5	LSED1003x5	5	10 x 2	80	2	CODE	1	94	80	71	2,650		Extrapolate
MSED1504x5	LSED1504x5	5	15 x 2	120	2	CGDE		94	80	79	2,980	] [	Extrapolate
MSED2004x5 <sup>1</sup>	LSED2004x5	5	20 x 2	120	2			94	80	79	3,280	] [	UUT14a,b <sup>4</sup>
MSED2005x5	LSED2005x5	5	20 x 2	200	2	4	1	94	80	84	3,380	] [	Interpolate
MSED3006x5	LSED3006x5	5	30 x 2	240	2	3, 3	2	95	140	96	5,100	Disid have with the second	Interpolate
MSED4006x5	LSED4006x5	5	40 x 2	240	2	4,4	2	95	140	96	5,500	Rigid base w/ internal isolation	Interpolate
MSED15B4x5	LSED15B4x5	7.5	15 x 2	120	2	2		99	104	79	3,050		Interpolate
MSED20B4x5	LSED20B4x5	10	20 x 2	-120	2	2	1	99	104	79	3,170	] [	Interpolate
MSED22B4x5	LSED22B4x5	7.5	22.5 x 2	120	2	SP_038	<u> 1</u>	99	104	79	4,000	] [	Interpolate
MSED30B5x5	LSED30B5x5	10	30 x 2	200	2	3	1	99	104	84	4,700	1	Interpolate
MSED50B6x5	LSED50B6x6	10	50 x 2	240	2	2, 3	2	99	165	96	5,600		Interpolate
			Triplex Syst	ems (indiv <mark>idual encl</mark> os	ed compressor units	with structurally ind	dependent and flexi	bly attached tan	k/dr <mark>yer/contro</mark> l	l skids)			
MSET1004x5	LSET1004x5	5	10 x 3	120	DY: 31 IM	ptny₂Pila	INC 1	95	125	79	3,550		Interpolate
MSET1505x5	LSET1505x5	5	15 x 3	200		3	1	95	125	84	4,750	] [	Interpolate
MSET2005x5	LSET2005x5	5	20 x 3	200	3	4	1	95	125	84	4,800	] [	Interpolate
MSET2006x5	LSET2006x5	5	20 x 3	240		01/22/	0024	95	125	96	4,900	] [	Interpolate
MSET3006x5	LSET3006x5	5	30 x 3	240		3,3		96	223	96	6,500	1	Interpolate
MSET4006x5	LSET4006x5	5	40 x 3	240	3	4,4	2	96	223	96	8,200	Rigid base w/ internal	Interpolate
MSET20B6x5	LSET20B6x5	10	20 x 3	240	3	2	1111	99	175	96	4,052	isolation	Interpolate
MSET2256x5	LSET2256x5	7.5	22.5 x 3	240	3	3		99	175	96	4,850	] [	Interpolate
MSET30B6x5	LSET30B6x5	10	30 x 3	240	3	3	1	99	175	96	6,550	] [	Interpolate
MSET40B6x5	LSET40B6x5	10	40 x 3	240	3	2,2	2	99	259	96	7,316	] [	Interpolate
MSET50B7x5	LSET50B7x5	10	50 x 3	400	3	2, 3	2	99	259	96	8,552	] [	Interpolate
MSET60B7x5	LSET60B7x5	10	60 x 3	400	3 D	3,3		99	259	96	9,452	1	Interpolate

1. In model numbers listed, the "x" can be 2 = 208V, 3 = 230V, or 4 = 460V. UUT14a,b was MSED200425 (208V) and UUT15a,b was LSEQ60B845 (460V).

2. Lab units are physically identical to medical air units (software change only)

3. Compressor pump skids are internally isolated. Dryer and receiver tank skids are not.

4. Dimensions and weight shown here for the MSED2004xx system are calculated assuming the duplex system contains two of the compressor enclosures tested in UUT14a along with a skid containing a controller, tank, dryers, and other subcomponents as shown in the Scroll Enclosed certified subcomponent tables.

#### Table 14 - Certified Components - Scroll Enclosed (SE) Air Systems (Continued)



DCL Project Number: 43160-2301

Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Mounting: Rigid Base Mount													
Medical Air Model Number <sup>1</sup>	Lab Air Model	HP Per Pump	Total HP	Vertical Receiver	Number of Compressor	Vertically Stacked Pumps Per	Horizontally Arrayed Pumps	Maxi	mum Dimensio	ns (in)	Max. Operating	Mounting <sup>3</sup>	Unit
Wedical Air Woder Namber	Number <sup>1,2</sup>	in rerramp	Totarri	(gallons)	Enclosures	Enclosure	Per Enclosure	Length	Width	Height	Weight (lb)	Wounting	onic
		Q	uadruplex S	ystems (individual encl	osed compressor un	its with structurally	independent and fl	exibly attached t	ank/dryer/cont	rol skids)			
MSEQ1505x5	LSEQ1505x5	5	15 x 4	200	4	3	1	132	100	84	5,050		Interpolated
MSEQ2006x5	LSEQ2006x5	5	20 x 4	240	4 D		1	132	100	96	6,150		Interpolated
MSEQ3007x5	LSEQ3007x5	5	30 x 4	400	<b>C</b> 4	3, 3	2	212	126	109	8,730		Interpolated
MSEQ4007x5	LSEQ4007x5	5	40 x 4	400	4	4, 4	2	212	126	109	9,890		Interpolated
MSEQ2256x5	LSEQ2256x5	7.5	22.5 x 4	240	4	. 3	1	99	246	96	5,900		Interpolated
MSEQ30B6x5	LSEQ30B6x5	10	30 x 4	240	4	3		99	246	96	6,400	Rigid base w/ internal isolation	Interpolated
MSEQ40B6x5	LSEQ40B6x5	10	40 x 4	240	4	2, 2	2	220	122	96	9,400	isolation	Interpolated
MSEQ40B7x5	LSEQ40B7x5	10	40 x 4	400	4	2, 2	2	220	122	102	10,100		Interpolated
MSEQ45B8x5	LSEQ45B8x5	7.5	45 x 4	660	4	3,3	2	220	122	127	11,700		Interpolated
MSEQ50B8x5	LSEQ50B8x5	10	50 x 4	660	4 03	5P2,330	5 <b>U</b> 2	220	122	127	11,800		Interpolated
MSEQ60B8x5 <sup>1</sup>	LSEQ60B8x5	10	60 x 4	660	4	3, 3	2	220	150	127	13,200		UUT15a,b <sup>4</sup>

1. In model numbers listed, the "x" can be 2 = 208V, 3 = 230V, or 4 = 460V. UUT14a,b was MSED200425 (208V) and UUT15a,b was LSEQ60B845 (460V).

2. Lab units are physically identical to medical air units (software change only)

3. Compressor pump skids are internally isolated. Dryer and receiver tank skids are not.

BY: Timothy Piland

4. Dimensions and weight shown here for the MSEQ60B8x5 system are calculated assuming the quadruplex system contains four of the compressor enclosures tested in UUT15a, one 660 gallon tank as tested in UUT15b, and a skid containing a controller, dryers, and other subcomponents as shown in the Scroll Enclosed certified subcomponent tables.



### Special Seismic Certification Table 15 - Certified Components - Medical Gas Automatic Changeover Manifolds



Unit

UUT40

DCL Project Number: 43160-2301

Manufacturer: Powerex Product Line: Medical Gas Automatic Changeover Manifolds Mounting: Rigid Wall Mount Gas Supply Pressure Indication Max Dimensions (in) Max Weight Delivery Pressure (psi) Powerex Model Number Control Cabinet Mounting Containers<sup>1,2</sup> (lb) Range Width Depth Height MFLD-CYL-NFPA-O2-N4 NEMA 4 10.0 20.5 69 Rigid wall CxC Digital 55 N/A 17.5 MFLD-CYL-NFPA-AIR-N4 55 MFLD-CYL-NFPA-N2O-N4 55 MFLD-CYL-NFPA-CO2-N4 55

MFLD-CYL-NFPA-COZ-N4	Схс	Digital	NEMA 4	55	N/A	17.5	10.0	20.5	72	Rigid wall	Interpolated
MFLD-CYL-NFPA-HYP-N4		Digitai	NEIVIA 4	100	N/A	17.5	10.0	20.5	12	Nigiu wali	interpolateu
MFLD-CYL-NFPA-N2-N4				180							
MFLD-CYL-NFPA-INST-N4				180							
MFLD-CYL-NFPA-O2				55		Z					
MFLD-CYL-NFPA-AIR				55		1					
MFLD-CYL-NFPA-N2O				55							
MFLD-CYL-NFPA-CO2	CxC	Digital	Standard	55JSP-	0380n/a	17.5	10.0	20.5	72	Rigid wall	Interpolated
MFLD-CYL-NFPA-HYP				100		L L L L					
MFLD-CYL-NFPA-N2				180							
MFLD-CYL-NFPA-INST				DV. 180 oth	Diland						
MFLD-LIQ-NFPA-O2-N4-230				$D_{1}$ , $I_{55}$ mounty	Pilan <sub>230</sub>						
MFLD-LIQ-NFPA-O2-N4-350				55	350						
MFLD-LIQ-NFPA-N2O-N4-230				55	230						
MFLD-LIQ-NFPA-N2O-N4-350					22/2(350/						
MFLD-LIQ-NFPA-CO2-N4-230	LxL	Digital	NEMA 4	DA 55. 01/	230-230-	17.5	10.0	20.5	72	Rigid wall	Interpolate
MFLD-LIQ-NFPA-CO2-N4-350		Digital	NEIVIA 4	55	350	11.5	10.0	20.5	72	Kigiu wali	interpolate
MFLD-LIQ-NFPA-HYP-N4-230				100	230	2					
MFLD-LIQ-NFPA-HYP-N4-350				100	350	·V/					
MFLD-LIQ-NFPA-N2-N4-230				180	230						
MFLD-LIQ-NFPA-N2-N4-350				180	350						
MFLD-LIQ-NFPA-O2-230				55	230						
MFLD-LIQ-NFPA-O2-350				55	350						
MFLD-LIQ-NFPA-N2O-230				55	230						
MFLD-LIQ-NFPA-N2O-350				55	350						
MFLD-LIQ-NFPA-CO2-230	LxL	Digital	Standard	55	230	17.5	10.0	20.5	72	Rigid wall	Interpolate
MFLD-LIQ-NFPA-CO2-350				55	350						
MFLD-LIQ-NFPA-HYP-230				100	230						
MFLD-LIQ-NFPA-HYP-350				100	350						
MFLD-LIQ-NFPA-N2-230				180	230						
MFLD-LIQ-NFPA-N2-350	LxL	Digital	Standard	180	350	17.5	10.0	20.5	72	Rigid wall	UUT41

1. Gas Containers: C x C = Cylinder x Cylinder; L x L = Liquid x Liquid

2. Gas container is not supplied by Powerex.

### Table 16 - Certified Subcomponents - Stacked Units, Scroll Air Systems (Systems Containing 2, 3 and 5 HP Pumps, Compressor Skids, Flexible Base Mount)



#### DCL Project Number: 43160-2301

Subcomponent [MFR]	Model	Notes	Max Weight (lb)	Unit
	SLAE03EB	2 or 3 HP	35	UUT1, UUT2
Scroll pumps [POWEREX] Note: pumps are die cast aluminum	SLAE05E	CODE 5HP	42	UUT3
	SLAE05EHP	SHP	42	Same as UUT3
	BASIC_PSM	30" x 30" x 8" NEMA 12 enclosure; no touchscreen	240	UUT1
Controllers [POWEREX]	нмі_рхмі	30" x 30" x 8" or 30" x 42" x 12" NEMA 12 enclosure; Human Machine Interface: touchscreen	245	Interpolated
Note: electrical cabinets are painted carbon steel	РВМІ_РХМІ	30" x 42" x 12" NEWA 12 enclosure; Powerex Building Management Integrator: HMI panel with additional communications card	246	UUT2, UUT3
•	002180T3E145T_M	othy Piland 2HP O	39	UUT1, UUT2
Motors [WEG]	002180T3ECD145T_	2 HP	45	Interpolated
Note: motors have a carbon steel shell with welded feet Note: All motors are 208-230V / 460V	003180T3E182T_	01/23/2024	72	Interpolated
	005180T3E184T_	5 НР	85	UUT3
	TNIA BL	JILDING CODE		

# Table 17 - Certified Subcomponents - Stacked Units, Scroll Air Systems(Systems Containing 2, 3 and 5 HP Pumps, Tank and Dryer Skid, Flexible Base Mount)



DCL Project Number: 43160-2301 Manufacturer: Powerex

	Model	Notes	Max Weight (lb)	Unit
	AR027300ST	80 gəl	176	UUT1, UUT2
	AR027400ST	120 gal	325	UUT3
JEP	AR051201AJ	200 gal	500	Extrapolated
E.	AR051301AJ	240 gal	580	UUT4b, UUT5b
RFI	VE507285 - 0	80 80 gal	177	UUT30b , UUT31b
B	veso4865 • Timothy Pi	120 gal	325	Interpolated
	VES04767	120 gal	325	UUT 31b
G D	ATEves073031/23	3/2024 200 gal	500	Interpolated
	VES07072	240 gal	580	UUT 30b
RN	ABUILDI	NG COD		
	B CALLE	AR027300ST AR027400ST AR051201AI AR051301AJ VES07285 - 0 VES04865 VES04767 VES04767 VES07703	AR0273005T 80 gal AR0274005T 120 gal AR051201AI 200 gal AR051301AJ 240 gal VES07285 - 0 880 80 gal VES04865 120 gal VES04865 120 gal VES04767 120 gal	AR027300ST       80 gal       176         AR02740ST       120 gal       325         AR051201AI       200 gal       500         AR051301AI       240 gal       580         VES07285       80 gal       177         VES04865       120 gal       325         VES04767       120 gal       325         VES0702       240 gal       500

# Table 18 - Certified Subcomponents - Stacked Units, Scroll Air Systems (Systems Containing 2, 3 and 5 HP Pumps, Tank and Dryer Skid, Flexible Base Mount)



#### DCL Project Number: 43160-2301

Subcomponent [MFR]	Model <sup>1</sup>		Max Dimensions (in)		Max Weight (lb)	Unit
Subcomponent (Mirk)		Length	Width	Height	Max Weight (ib)	
	PMD10	17	28	53	200	Extrapolated
	PMD17	17	28	53	200	Extrapolated
	PMD30	17	28	64	330	UUT3
	PMD35	17	28	64	330	Interpolated
	PMD45		28	72	360	Interpolated
Desiccant dryers	PMD55	17	28	72	360	Interpolated
[POWEREX]	PMD60	35	28	67	660	Interpolated
c dryers consist of powder coated welded carbon steel tanks and a powder coated	PMD71	35	28	67	660	Interpolated
welded carbon steel mounting frame	PMD90	35	28	76	720	Interpolated
	PMD110	35	28	76	720	Interpolated
	PMD111	35	28	76	720	UUT4b
	PMD07T		28	37	185	UUT1
	PMD10T	5P-18500	28	37	185	Same As <sup>2</sup>
	PMD17T	18	28	37	185	Same As <sup>2</sup>
	PLD10	17	28	53	200	Extrapolated
	PLD17 • Tim	othy <sup>1</sup> Dilon	28	53	200	Extrapolated
	PLD30	ouny Filan	28	64	330	UUT3
	PLD35	17	28	64	330	Interpolated
	PLD45	17	28	72	360	Interpolated
Desiccant dryers		01/93/20	24 28	72	360	Interpolated
	PLD60	35	28	67	660	Interpolated
	PLD71	35	28	67	660	Interpolated
Desiccant dryers [POWEREX] ers consist of powder coated welded carbon steel tanks and a powder coat welded carbon steel mounting frame	PLD90	35	28	76	720	Interpolated
	PLD111	35	28	76	720	UUT4b
	PLD07T	18	28	37	185	UUT1
	PLD10T	18	28	37	185	Same As <sup>2</sup>
	PLD17T	18	28	37	185	Same As <sup>2</sup>
	DME050RX	22 - 1	9	56	176	UUT5b
	DME060RX	22	9	63	198	Interpolated
	DME080RX	22	9	73	229	UUT6
Desiccant dryers	DME015	12	11	33	81	UUT6
[PARKER-DOMNICK, alternately branded HUNTER/ZANDER]	DME025	12	11	53	103	Interpolated
ote: dryers consist of aluminum extruded towers and a powder coated welded	DME030	12	11	59	114	Interpolated
carbon steel mounting frame	DME050	22	9	56	176	Interpolated
	DME060	22	9	63	198	UUT6
	КМТЗ	8	12	32	37	UUT2
	KMT4	8	12	54	54	UUT6
	NDL110	17	13	48	172	UUT9
Desiccant dryers [NANO PSI]	NDL120	17	13	52	209	Interpolated
e: dryers consist of aluminum extruded towers and a powder coated carbon steel	NDL120	17	13	56	262	Interpolated
mounting frame	NDL2110	25	13	47	366	UUT9

Table 19 - Certified Subcomponents - Stacked Units, Scroll Air Systems

(Systems Containing 2, 3, 5, 7.5 and 10 HP Pumps, Partially Welded Compressor Skids, Rigid Base Mount)



DCL Pr Manuj Produ

Subcomponent [MFR]	Model	Notes	Max Weight (lb)	Unit
	SLAE03EB	2 or 3 HP	35	UUT32
	SLAE05E		42	UUT33ii
	SLAEOSEHP R CC	SHP	42	Same as UUT3
Scroll pumps [POWEREX] Note: pumps are die cast aluminum	SLAE075	1000	80	UUT10a
	SLAE075HP	7.5 HP	80	Same as UUT1
	SLAE10		80	UUT11aii
	SLAE10HP OSP-	0380	80	Same as UUT1:
		30" x 24" x 8" NE <mark>MA 12 enc</mark> losure; no touchscreen	220	UUT10a
Controllers [POWEREX]	BY: Timothy	Piland 30" x 30" x 8" NEMA 12 enclosure; no touchscreen	240	UUT32
Note: electrical cabinets are painted carbon steel	нмі_рхмі	30" x 24" x 8", 30" x 30" x 8" or 30" x 42" x 12" NEMA 12 enclosure; Human Machine Interface: touchscreen	245	Interpolated
	<b>С РВМІ_РХМЕ</b> : 01/	20" x 42" x 12" NEMA 12 enclosure: Powerex Building Management Integrator; HMI panel with additional communications card	246	UUT11aii
	002180T3E145T_	2 HP	39	UUT32
Motors for medical and lab skid mount [WEG] Note: motors have a carbon steel shell with welded feet	002180T3ECD145T_	2 HP	45	Interpolated
Note: All motors are 208-230V / 460V	003180T3E182T_	З НР	72	Interpolated
	005180T3E184T_	5 HP	85	UUT33ii
	00736OT2E184T	7.5 HP	72	UUT10a
	01036OT3E213T	10 HP	126	UUT11aii

Table 20 - Certified Subcomponents - Stacked Units, Scroll Air Systems

(Systems Containing 7.5 and 10 HP Pumps, Bolted Compressor Skids, Rigid Base Mount)



#### DCL Project Number: 43160-2301

Subcomponent [MFR]	Model	Notes	Max Weight (lb)	Unit
Scroll pumps [POWEREX]	SLAE075, SLAE075HP	7.5 HP	80	UUT35
Note: pumps are die cast aluminum	SLAE10, SLAE10HP	10 HP	80	UUT36
Motors for medical and lab skid mount [WEG] Note: motors have a carbon steel shell with welded feet	007360T2E184T	7.5 HP	72	UUT35
Note: Motors have a carbon steel shell with weided feet Note: All motors are 208-230V / 460V	010360T3E213T	10 НР	126	UUT36
	BASIC_PSM	30" x 30" x 8" NEMA 12 enclosure; no touchscreen	240	UUT35
Controllers [POWEREX] Note: electrical cabinets are painted carbon steel		30" x 30" x 8" or 30" x 42" x 12" NEMA 12 enclosure; Human Machine Interface: touchscreen	245	Interpolated
	PBMI_PXMI	30" x 42" x 12" NEMA 12 enclosure; Powerex Building Management Integrator: HMI panel with additional communications card	246	UUT36
	PRNIA BU	01/23/2024		

## Special Seismic Certification Table 21 - Certified Subcomponents - Stacked Units, Reciprocating Piston Compressor Stacked Systems (Compressor Skids, Flexible Base Mount)



DCL Project Number: 43160-2301

Manufacturer: Powerex

Subcomponent [MFR]	Model	Notes	Max Weight (lb)	Unit
	OP\$030	ЗНР	46	UUT42
Reciprocating Pumps [POWEREX]	ОРТО50	5-7.5 HP	97	UUT42
Note: pumps are die cast aluminum and cast iron	OPT100	7.5-10 HP	138	UUT43a
	OPT150	15 HP	145	UUT43a
	003180T3E145T-S	P-0380 3HP, 4 pole construction	72	UUT42
Motors	005180T3E184T-STimo	thy Pil5HP, 4 pole construction	85	UUT42
[WEG] Note: motors have a carbon steel shell with welded feet	007180T3E213T-S	7.5 HP, 4 pole construction	116	UUT43a
Note: All motors are 208-230V / 460V	010180T3E215T-S	10 HP, 4 pole construction	137	Interpolated
	01518ET3E254T-S	15HP, 4 pole construction	175	UUT43a
Internal Spring Isolators <sup>1</sup> [Vibration Isolation Co.]	SEQ	Carbon steel, painted	6	UUT43a
pring isolators are only featured on pump and motor options gre	hater than or equal to 7.5 HP. BU	IDING		

# Table 22 - Certified Subcomponents - Stacked Units, Scroll and Reciprocating Piston Air Systems (All Stacked Systems, Tank/Dryer/Controller Skids, Rigid Base Mount)



turer: Powerex Line: Medical Air, Laboratory Air, and Instrument Air					
Subcomponent [MFR]		Model	Notes	Max Weight (lb)	Unit
		AR027400ST	120 gal	325	UUT10b
Vertical tanks [CAMPBELL HAUSFELD, ALSO BRANDED TWIN LAKES] Note: tanks are welded carbon steel		AR051201AJ	200 gal	500	Interpolate
ivote, talks are welded tarbon steer		AR051301AJ	240 gal	580	UUT11bii
Vertical tanks [MANCHESTER TANK]	,	AR063700AV	400 gal	640	UUT12c
Note: tanks are welded carbon steel with ASME 165 PSIG construction		AR660000AV	660 gal	1500	UUT15b
		AR0684xxxx / VES07285	80 gal, 3 stamped feet, 200 psig construction	177	UUT30a, UUT
	S.	AR0685xxxx / VEC05011 - previously VES04767	120 gal, ring base, 4 mounts, 200 psig construction	325	UUT31a
	2	AR0687xxxx / VEC04870, was VES07303	200 gal, ring base, 4 mounts, 200 psig construction	500	Interpolate
Vertical tanks [Morganton] Note: tanks are welded carbon steel		AR0688xxxx / VEC07072, was VES07072	240 gal, ring base, 4 mounts, 200 psig construction	580	UUT30a
		BY: TAR0705xxxx / VES09600 and	120 gal, ring base, 4 mounts, 300 psig construction	395	UUT42
		AR0707xxxx	200 gal, ring base, 4 mounts, 300 psig construction	577	Interpolate
		AR0708xxxx / VES0010366 2024	240 gal, ring base, 4 mounts, 300 psig construction	665	UUT43b
	Y	BASIC_PSM	30" x 30" x 8" NEMA 12 enclosure; no touchscreen	240	UUT42
Controllers [POWEREX]	1	HMI_PXMI	30" x 30" x 8" or 30" x 42" x 12" NEMA 12 enclosure; Human Machine Interface: touchscreen	245	Interpolate
Note: electrical cabinets are painted carbon steel	Ċ	РВМІ_РХМІ	30" x 42" x 12" NEMA 12 enclosure; Powerex Building Management Integrator: HMI panel with additional communications card	246	UUT43b
		BUILDING			

Special Seismic Certification Table 23 - Certified Subcomponents - Stacked Units, Scroll and Reciprocating Piston Air Systems (All Stacked Systems, Tank/Dryer/Controller Skids, Rigid Base Mount)



# DCL Project Number: 43160-2301

Manufacturer: Powerex						
Product Line: Medical Air, Laboratory Air, and Instrument Air			Max Dimensions (in)			
Subcomponent [MFR]	Model	Length	Width	Height	Max Weight (lb)	Unit
	PMD10	17	28	53	200	Extrapolated
	PMD17	17	28	53	200	Extrapolated
	PMD30	17	28	64	330	Extrapolated
Desiccant dryers	PMD35	17	28	64	330	Extrapolated
[POWEREX]	PMD45	17	28	72	360	UUT10b
Note: dryers consist of powder coated welded carbon steel tanks,	PMD55		28	72	360	Interpolated
owder coated welded carbon steel mounting frame, and powder coated	PMD60	KUJUE	28	67	660	Interpolated
carbon steel mounting platform	PMD71	35,000	28	67	660	Interpolated
	PMD90	35	28	76	720	Interpolated
	PMD110	35	28	76	720	Interpolated
	PMD111	35	28	76	720	UUT4b <sup>1</sup>
	PLD10	17	28	53	200	Extrapolated
/	PLD17	17	28	53	200	Extrapolated
	PLD30	17	28	64	330	Extrapolated
Desiccant dryers	PLD35	DCD17020	28	64	330	Extrapolated
[POWEREX]	PLD45		28	72	360	UUT10b
Note: dryers consist of powder coated welded carbon steel tanks,	PLD55	17	28	72	360	Interpolated
owder coated welded carbon steel mounting frame, and powder coated carbon steel mounting platform	PLD60	35	28	67	660	Interpolated
carbon steel mounting platform	PLD71		28	67	660	Interpolated
	PLD90	notnys Pilar	10 28	76	720	Interpolated
	PLD111	35	28	76	720	UUT4b <sup>1</sup>
Desiccant dryers [NANO PSI]	NDL110	17	13	48	172	Extrapolated
Note: dryers consist of aluminum extruded towers, powder coated	NDL120	17	13	52	209	Extrapolated
arbon steel mounting frame, and powder coated carbon steel mounting	NDL130	1773/7	74 13	56	262	UUT11bii
platform	NDL2110	25	12	47	366	UUT9 <sup>2</sup>
	PD204A	6 9 9 9	13	41	50	UUT32
	PD205A	8 7777	15	38	65	Interpolated
	PD206A	8	15	48	90	Interpolated
Desiccant dryers [Trident]	PD207A	12	19	40	110	Interpolated
Note: dryers consist of aluminum extruded towers, powder coated	PD208A	12	21	47	135	Interpolated
arbon steel mounting frame, and powder coated carbon steel mounting	PD209A	15	17	63	235	Interpolated
platform	PD210A	15 100	17	75	265	Interpolated
	PD211A	23 - 1	18	64	470	Interpolated
	PD212A	23	18	76	525	Interpolated
	PD213A	30	18	64	565	UUT33i

1. UUT4b, which serves as the upper bookend, was tested on neoprene pads.

2. UUT9, which serves as the upper bookend, was tested on neoprene pads.

### Table 24 - Certified Subcomponents - Compact Scroll Air Systems, Rigid Base Mount



Note: material is die cast aluminum       SLAE10 and SLAE10HP       10 HP       80       UUT34         Motors for medical and lab skid mount (WEG) Note: material is carbon steel shell with welded foot Note: All motors are 208-230V / 460V       007360T2E184T       7.5 HP       72       Extrapolated <sup>13</sup> Motors for medical and paskid mount (WEG) Note: material is carbon steel shell with welded foot Note: All motors are 208-230V / 460V       00360T3E213T       10 HP       126       UUT34         Motors are 208-230V / 460V       BASIC_PSM       30 <sup>6</sup> x 30 <sup>6</sup> x 8 <sup>6</sup> or 30 <sup>6</sup> x 42 <sup>a</sup> x 12 <sup>a</sup> NEMA 12 enclosure; no touchscreen       240       Extrapolated <sup>13</sup> Motors material is painted carbon steel electrical cabinet       HMI_PXMI       30 <sup>6</sup> x 30 <sup>6</sup> x 42 <sup>a</sup> x 12 <sup>a</sup> NEMA 12 enclosure; no touchscreen       246       UUT34         PBMI_PXMI       30 <sup>6</sup> x 42 <sup>a</sup> x 12 <sup>a</sup> NEMA 12 enclosure; Poweres Building Management Integrace: touchscreen       246       UUT34         PD206A       8 <sup>a</sup> x 15 <sup>a</sup> x 48 <sup>a</sup> 90       Extrapolated <sup>14</sup> PD207A       12 <sup>a</sup> x 19 <sup>a</sup> x 40 <sup>a</sup> 110       Extrapolated <sup>14</sup> PD208A       12 <sup>a</sup> x 1 <sup>a</sup> x 47 <sup>a</sup> 135       UUT34         Air reciever tank [Morgenton] Note: tank is welded carbon steel mounting frame, and power costed carbon steel do certified in other configurations. UUT34 is the most selsmically witherselse configuration of the weld lined.       80 gal       177       UUT34	Subcomponent (MH)         Model         Notes         (b)         Unit           Scroll pumps (POWERX) Note: material is addicated in a bask downont (WEG) Note: material is addicated in a bask downont (WEG) Note: material is addicated in a bask downont (WEG) Note: addicated in a bask downont (WEG) Note: share used is addicated in a bask downont (WEG) Note: material is carbon stell shell with welded foot Note: All motors are 208-230V / 460V         OVTSO TELENT         T.S. HP         R0         Extrapolated <sup>1,2</sup> Controllers (POWEREX) Note: material is painted carbon stell electrical cabinet         0036073E213T         10 HP         126         UUT34           BASIC_PSM         30° x 30° x 8° or 30° x 42° x 12° NEMA 12 enclosure; no touchscreen Integrator: HMI panel/with additional communications card         240         Extrapolated <sup>1,3</sup> PBMI_PXMI         30° x 42° x 12° NEMA 12 enclosure; Newerex Building Management Integrator: HMI panel/with additional communications card         246         UUT34           PD206A         8° x 15° x 48°         90         Extrapolated <sup>1,4</sup> PD208A         12° x 19° x 40°         110         Extrapolated <sup>1,4</sup> PD208A         12° x 19° x 40°         110         Extrapolated <sup>1,4</sup> PD208A         12° x 19° x 40°         110         Extrapolated <sup>1,4</sup> PD208A         12° x 19° x 40°         110         Extrapolated <sup>1,4</sup> PD208A         1	luct Line: Medical Air and Laboratory Air				
Note: material is die cast aluminum         SLAE 10 and SLAE 10HP         10 HP         80         UUT34           Motors for medical and lab skid mount [WEG] Note: material is carbon steel shell with welded foot Note: All motors are 208-230V / 460V         007360T2E184T         7.5 HP         72         Extrapolated <sup>13</sup> Motors for medical and bas kid mount [WEG] Note: material is carbon steel shell with welded foot Note: All motors are 208-230V / 460V         007360T2E184T         7.5 HP         72         Extrapolated <sup>13</sup> Motors for medical and bas kid mount [WEG] Note: material is painted carbon steel dectrical cabinet         007360T3E213T         10 HP         126         UUT34           Motors for medical and bas kid mount [POWEREX] Note: material is painted carbon steel dectrical cabinet         BASIC_PSM         30° x 30° x 8° or 30° x 42″ x 12° NEMA 12 enclosure; no touchscreen Interface: touchscreen         246         UUT34           PBMI_PXMI         30° x 42″ x 12° NEMA 12 enclosure; Powerex Building Management Integrator: HMI panel with additional communications card         246         UUT34           PD206A         8″ x 15″ x 48″         90         Extrapolated <sup>14</sup> PD206A         12″ x 19″ x 40″         110         Extrapolated <sup>14</sup> PD208A         12″ x 19″ x 40″         135         UUT34           Air reciever tank [Morgenton] Note: tank is welded carbon steel mounting frame, and power coated carbon steel mounting frame	Note: material is die cast aluminum         SIAE 10 and SIAE 10HP         10 HP         80         UUT34           Motors for medical and lab skid mount [WEG] Note: material is carbon steel shell with welded foot Note: All motors are 208-230V / 460V         00736072E184T         7.5 HP         72         Extrapolated <sup>1.3</sup> Motors for medical and lab skid mount [WEG] Note: material is carbon steel shell with welded foot Note: All motors are 208-230V / 460V         00736072E184T         7.5 HP         72         Extrapolated <sup>1.3</sup> Motors for medical and lab skid mount [WEG] Note: material is painted carbon steel electrical cabinet         00736073E213T         10 HP         126         UUT34           Motors for medical and lab skid mount [WEG] Note: material is painted carbon steel electrical cabinet         BASIC_PSM         30° x 30° x 8° or 30° x 42″ x 12° NEMA 12 enclosure; no touchscreen Interface: touchscreen         240         Extrapolated <sup>1.3</sup> Mote: material is painted carbon steel electrical cabinet         PBMI_PXMI         30° x 42″ x 12° NEMA 12 enclosure; Powerex Building Management Integrator: HMI panel with additional communications card         246         UUT34           PD20FA         PD20FA         8″ x 15″ x 48″         90         Extrapolated <sup>1.4</sup> PD20FA         12″ x 19″ x 40″         110         Extrapolated <sup>1.4</sup> PD20FA         21″ x 19″ x 40″         110         Extrapolated <sup>1.4</sup>	Subcomponent [MFR]	Model	Notes		Unit
SLAE10 and SLAE10HP       10 HP       80       UUT34         Motors for medical and lab skid mount [WEG] Note: material is carbon steel shell with welded foot Note: All motors are 208-230V / 460V       007360T2E184T       7.5 HP       72       Extrapolated <sup>1,2</sup> 010360T3E213T       10 HP       126       UUT34         Rescue to the steel shell with welded foot Note: Material is carbon steel shell with welded foot Note: Material is painted carbon steel electrical cabinet       8ASIC_P5M       30° x 30° x 8° NEMA 12 enclosure; no touchscreen       240       Extrapolated <sup>1,2</sup> Rescue to the steel mount is painted carbon steel electrical cabinet       HMI_PXMI       30° x 30° x 8° or 30° x 42° x 12° NEMA 12 enclosure; no touchscreen       246       UUT34         PBMI_PXMI       30° x 42° x 12° NEMA 12 enclosure; Powerex Building Management Integrator: HMI panel with additional communications card       246       UUT34         PD206A       8° x 15° x 48°       90       Extrapolated <sup>1,4</sup> PD208A       12° x 21° x 47°       110       Extrapolated <sup>1,4</sup> PD208A       12° x 21° x 47°       135       UUT34         Air reciever tank [Morgenton] Note: tank is welded carbon steel       VES07285; AR0684xxx       80 gal       177       UUT34         Ktrapolated subcomponents were tested or configurations. UUT34 is the most selemically withere-te-extrapolated line.       VES07285; AR0684xxx       <	SLAE10 and SLAE10HP       10 HP       80       UUT34         Motors for medical and lab skid mount [WEG] Note: material is carbon steel shell with welded foot Note: All motors are 208-230V / 460V       007360T2E184T       7.5 HP       72       Extrapolated <sup>1,2</sup> 010360T3E213T       10 HP       126       UUT34         Rescuence       8ASIC_P5M       30° x 30° x 8° NEMA 12 enclosure; no touchscreen       240       Extrapolated <sup>1,3</sup> Note: material is painted carbon steel electrical cabinet       HMI_PXMI       30° x 42° x 12° NEMA 12 enclosure; no touchscreen       246       UUT34         PBMI_PXMI       30° x 42° x 12° NEMA 12 enclosure; no touchscreen       246       UUT34         Note: material is painted carbon steel electrical cabinet       PD206A       8° x 15° x 48°       90       Extrapolated <sup>1,3</sup> Note: dryers consist of aluminum extruded towers, powder coated carbon steel mounting frame, and powder coated carbon steel mounting platform       PD206A       8° x 15° x 48°       90       Extrapolated <sup>1,4</sup> PD208A       12° x 12° x 48°       90       Extrapolated <sup>1,4</sup> PD208A       12° x 21° x 47°       110       Extrapolated <sup>1,4</sup> PD208A       12° x 21° x 47°       135       UUT34         With additional communications card       246       UUT34         PD208A       12° x 12° x 19		SLAE075 and SLAE075HP	7.5 HP	80	Extrapolated <sup>1,2</sup>
Note: material is carbon steel shell with welded foot Note: All motors are 208-230V / 460V       D010360T3E219T       10 HP       126       UUT34         A       BASIC_PSM       30" x30" x8" or 30" x42" x12" NEMA 12 enclosure; no touchscreen       240       Extrapolated <sup>1.3</sup> Controllers [POWEREX] Note: material is painted carbon steel electrical cabinet       HMI_PXMI       30" x30" x8" or 30" x42" x12" NEMA 12 enclosure; Human Machine Interface: touchscreen       245       Extrapolated <sup>1.3</sup> PBMI_PXMI       30" x42" x12" NEMA 12 enclosure; Powerex Building Management Integrator: HMI panel with additional communications card       246       UUT34         PBMI_PXMI       30" x42" x12" NEMA 12 enclosure; Powerex Building Management Integrator: HMI panel with additional communications card       246       UUT34         PBMI_PXMI       90       Extrapolated <sup>1.4</sup> 0UT34         PD205A       8" x15" x48"       90       Extrapolated <sup>1.4</sup> PD207A       12" x19" x40"       110       Extrapolated <sup>1.4</sup> PD208A       12" x21" x47"       135       UUT34         Air reciever tank [Morgenton] Note: tank is welded carbon steel       VES07285; AR0684xxx       80 gal       177       UUT34         ktrapolated subcomponents were tested or certified in other configurations. UUT34 is the most seismically vulnerable configuration of the model line.       80 gal       177       UUT34 <td>Note: material is carbon steel shell with welded foot Note: All motors are 208-230V / 460V       010360T3E213T       10 HP       126       UUT34         BASIC_P5M       30* 30* x 8* NEMA 12 enclosure; no touchscreen       240       Extrapolated <sup>1,3</sup>         Controllers [POWEREX] Note: material is painted carbon steel electrical cabinet       HMI_PXMI       30* x 9* x 8* NEMA 12 enclosure; no touchscreen       240       Extrapolated <sup>1,3</sup>         PBMI_PXMI       30* x 42* x 12* NEMA 12 enclosure; Human Machine Interface: touchscreen       245       Extrapolated <sup>1,3</sup>         PBMI_PXMI       30* x 42* x 12* NEMA 12 enclosure; Powerex Building Management Integrator: HMI panel with additional communications card       246       UUT34         PBMI_PXMI       30* x 42* x 12* NEMA 12 enclosure; Powerex Building Management Integrator: HMI panel with additional communications card       246       UUT34         PD206A       8* x 15* x 48*       90       Extrapolated<sup>1,4</sup>         PD207A       12* x 19* x 40*       110       Extrapolated<sup>1,4</sup>         PD208A       12* x 19* x 40*       110       Extrapolated<sup>1,4</sup>         PD208A       12* x 19* x 40*       110       Extrapolated<sup>1,4</sup>         Note: tank is welded carbon steel       VES07285; AR0684xxx       80 gal       177       UUT34         xtrapolated subcomponents were tested or certified in othere configurations. UUT34 is the most seismical</td> <td>Note: material is die cast aluminum</td> <td>SLAE10 and SLAE10HP</td> <td>10 HP</td> <td>80</td> <td>UUT34</td>	Note: material is carbon steel shell with welded foot Note: All motors are 208-230V / 460V       010360T3E213T       10 HP       126       UUT34         BASIC_P5M       30* 30* x 8* NEMA 12 enclosure; no touchscreen       240       Extrapolated <sup>1,3</sup> Controllers [POWEREX] Note: material is painted carbon steel electrical cabinet       HMI_PXMI       30* x 9* x 8* NEMA 12 enclosure; no touchscreen       240       Extrapolated <sup>1,3</sup> PBMI_PXMI       30* x 42* x 12* NEMA 12 enclosure; Human Machine Interface: touchscreen       245       Extrapolated <sup>1,3</sup> PBMI_PXMI       30* x 42* x 12* NEMA 12 enclosure; Powerex Building Management Integrator: HMI panel with additional communications card       246       UUT34         PBMI_PXMI       30* x 42* x 12* NEMA 12 enclosure; Powerex Building Management Integrator: HMI panel with additional communications card       246       UUT34         PD206A       8* x 15* x 48*       90       Extrapolated <sup>1,4</sup> PD207A       12* x 19* x 40*       110       Extrapolated <sup>1,4</sup> PD208A       12* x 19* x 40*       110       Extrapolated <sup>1,4</sup> PD208A       12* x 19* x 40*       110       Extrapolated <sup>1,4</sup> Note: tank is welded carbon steel       VES07285; AR0684xxx       80 gal       177       UUT34         xtrapolated subcomponents were tested or certified in othere configurations. UUT34 is the most seismical	Note: material is die cast aluminum	SLAE10 and SLAE10HP	10 HP	80	UUT34
Note: All motors are 208-230V / 460V       0.10360T3E213T       10 HP       126       UUT34         A       BASIC_P5M       30° × 30° × 8° NEMA 12 enclosure; no touchscreen       240       Extrapolated <sup>13</sup> Note: material is painted carbon steel electrical cabinet       HMI_PXMI       30° × 30° × 8° or 30° × 42° × 12° NEMA 12 enclosure; no touchscreen       245       Extrapolated <sup>13</sup> Note: material is painted carbon steel electrical cabinet       PBMI_PXMI       30° × 42° × 12° NEMA 12 enclosure; Powerx Building Management Integrator: HMI panel with additional communications card       246       UUT34         Note: dryers [Trident]       PD206A       8° × 15° × 48°       90       Extrapolated <sup>14</sup> Note: dryers consist of aluminum extruded towers, powder coated carbon steel mounting frame, and powder coated carbon steel mounting platform       PD207A       12° × 19° × 40°       110       Extrapolated <sup>14</sup> PD208A       12° × 19° × 40°       110       Extrapolated <sup>14</sup> PD208A       12° × 19° × 40°       110       Extrapolated <sup>14</sup> Note: tank is welded carbon steel mounting frame, and powder coated carbon steel mounting platform       VES07285; AR0684xxx       80 gal       107       UUT34         Ktarpolated <sup>14</sup> PD207A       12° × 11° × 47°       135       UUT34         Ktarpolated <sup>14</sup> VES07285; AR0684xxx       80	Note: All motors are 208-230V / 460V       0.10360T3E213T       10 HP       126       UUT34         A       BASIC_P5M       30° x30° x8° r30° x42° x12° NEMA 12 enclosure; no touchscreen       240       Extrapolated <sup>13</sup> Note: material is painted carbon steel electrical cabinet       HMI_PXMI       30° x30° x8° r30° x42° x12° NEMA 12 enclosure; no touchscreen       245       Extrapolated <sup>13</sup> PBMI_PXMI       30° x42° x12° NEMA 12 enclosure; Powerex Building Management Integrator: HMI panel with additional communications card       246       UUT34         PBMI_PXMI       30° x42° x12° NEMA 12 enclosure; Powerex Building Management Integrator: HMI panel with additional communications card       246       UUT34         A       PD205A       8° x15° x48°       90       Extrapolated <sup>14</sup> PD205A       12° x1° x47° x48°       90       Extrapolated <sup>14</sup> PD205A       12° x1° x47°       110       Extrapolated <sup>14</sup> PD205A       12° x1° x47°       135       UUT34         PD205A       12° x21° x47°       135       UUT34         Air reciever tank [Morgenton] Note: tank is welded carbon steel       VES07285; AR0684xxx       80 gal       177       UUT34         etapolated subcomponents were tested or certified in other configurations. UUT34 is the most selsmically vulnerable confligurationed lined.       80 gal       177		007360T2E184T	7.5 HP	72	Extrapolated <sup>1,2</sup>
Controllers [POWEREX] Note: material is painted carbon steel electrical cabinet       HMI_PXMI       30" x 30" x 8" or 30" x 42" x 12" NEMA 12 enclosure; Human Machine Interface: touchscreen       245       Extrapolated 1.3         PBMI_PXMI       30" x 42" x 12" NEMA 12 enclosure; Powerex Building Management Integrator: HMI panel with additional communications card       246       UUT34         PD206A       8" x 15" x 48"       90       Extrapolated 1.4         Note: dryers consist of aluminum extruded towers, powder coated carbon steel mounting frame, and powder coated carbon steel mounting platform       PD206A       8" x 15" x 48"       90       Extrapolated 1.4         PD207A       12" x 19" x 40"       110       Extrapolated 1.4         PD208A       12" x 21" x 47"       135       UUT34         Air reciever tank [Morgenton] Note: tank is welded carbon steel       VES07285; AR0684xxx       80 gal       177       UUT34         ktrapolated of certified in other configurations. UUT34 is the most seismically vulnerable configuration of the model line.       Extrapolate Units       80 gal       177       UUT34	Controllers [POWEREX] Note: material is painted carbon steel electrical cabinet       HMI_PXMI       30" x 30" x 8" or 30" x 42" x 12" NEMA 12 enclosure; Human Machine Interface: touchscreen       245       Extrapolated 13         PBM_PXMI       30" x 42" x 12" NEMA 12 enclosure; Powerex Building Management Integrator: HMI panel with additional communications card       246       UUT34         PD206A       8" x 15" x 48"       90       Extrapolated 14         PD207A       12" x 19" x 40"       110       Extrapolated 14         PD208A       12" x 21" x 47"       135       UUT34         Air reciever tank [Morgenton] Note: tank is welded carbon steel       VES07285; AR0684xxx       80 gal       177       UUT34         trapolated subcomponents were tested or certified in other configurations. UUT34 is the most seismically vulnerable configuration of the configuration of th		010360T3E213T	10 НР	126	UUT34
HML_PXMI       Interface: touchscreen       245       Extrapolated **         Note: material is painted carbon steel electrical cabinet       PBMI_PXMI       interface: touchscreen       245       Extrapolated **         PBMI_PXMI       30" x 42" x 12" NEMA 12 enclosure; Powerex Building Management Integrator: HMI panel with additional communications card       246       UUT34         PBMI_PXMI       PD206A       8" x 15" x 48"       90       Extrapolated <sup>14</sup> Note: dryers (Trident)       PD207A       12" x 19" x 40"       110       Extrapolated <sup>14</sup> PD208A       12" x 21" x 47"       135       UUT34         Air reciever tank [Morgenton] Note: tank is welded carbon steel       VES07285; AR0684xxx       80 gal       177       UUT34         ktrapolated subcomponents were tested or certified in other configurations. UUT34 is the most seismically vulnerable configuration of the model line.       80 gal       177       UUT34	HMI_PXMI       Interface: touchscreen       245       Extrapolated **         Note: material is painted carbon steel electrical cabinet       PBMI_PXMI       interface: touchscreen       246       UUT34         PBMI_PXMI       30" x 42" x 12" NEMA 12 enclosure; Powerex Building Management Integrator: HMI panel with additional communications card       246       UUT34         PD206A       8" x 15" x 48"       90       Extrapolated <sup>1,4</sup> PD207A       12" x 19" x 40"       110       Extrapolated <sup>1,4</sup> PD208A       12" x 21" x 47"       135       UUT34         Air reciever tank [Morgenton] Note: tank is welded carbon steel       VES07285; AR0684xxx       80 gal       177       UUT34         trapolated subcomponents were tested or certified in other configurations. UUT34 is the most seismically vulnerable configuration of the model line.       50 gal       177       UUT34		BASIC_PSM	30" x 30" x 8" NEMA 12 enclosure; no touchscreen	240	Extrapolated <sup>1,3</sup>
PBMI_PXMI       30" x 42" x 12" NEMA 12 enclosure; Powerex Building Management Integrator: HMI panel with additional communications card       246       UUT34         Desiccant dryers [Trident] Note: dryens coated carbon steel mounting frame, and powder coated carbon steel mounting platform       PD206A       8" x 15" x 48"       90       Extrapolated <sup>14</sup> PD207A       12" x 19" x 40"       110       Extrapolated <sup>14</sup> PD208A       12" x 21" x 47"       135       UUT34         Air reciever tank [Morgenton] Note: tank is welded carbon steel       VES07285; AR0684xxx       80 gal       177       UUT34         trapolated subcomponents were tested or certified in other configurations. UUT34 is the most seismically vulnerable configuration of the model line.       80 gal       177       UUT34	PBM_PXMI       30" x 42" x 12" NEMA 12 enclosure; Powerex Building Management Integrator: HMI panel with additional communications card       246       UUT34         Desiccant dryers [Trident] Note: dryens coasted carbon steel mounting frame, and powder coated carbon steel mounting platform       PD206A       8" x 15" x 48"       90       Extrapolated <sup>14</sup> PD207A       12" x 19" x 40"       110       Extrapolated <sup>14</sup> PD208A       12" x 21" x 47"       135       UUT34         Air reciever tank [Morgenton] Note: tank is welded carbon steel       VES07285; AR0684xxx       80 gal       177       UUT34         ktrapolated subcomponents were tested or certified in other configurations. UUT34 is the most seismically vulnerable configuration of the model line.       50       50       50		НМІ_РХМІ		245	Extrapolated <sup>1,3</sup>
Desiccant dryers [Trident]       Image: Control of the most seed mounting frame, and power of the most seed carbon steel mounting frame, and power of the model line.       Image: Control of the most seed carbon steel mounting frame, and power of the model line.         Note: tank is welded carbon steel       VES07285; AR0684xxx       80 gal       177       UUT34         Ktrapolated subcomponents were tested in UUT0a and UUT35.       VES0728; AR0684xxx       80 gal       177       UUT34	Desiccant dryers [Trident]       Image: Control of aluminum extruded towers, powder coated carbon steel mounting frame, and powder coated carbon steel mounting platform       PD207A       12" x 19" x 40"       110       Extrapolated <sup>1,4</sup> PD208A       12" x 21" x 47"       135       UUT34         Air reciever tank [Morgenton]       VES07285; AR0684xxx       80 gal       177       UUT34         xtrapolated subcomponents were tested or certified in other configurations. UUT34 is the most seismically willerable configuration of the model line.       VES07285; AR0684xxx       80 gal       177       UUT34		PBMI_PXMI		246	UUT34
Note: dryers consist of aluminum extruded towers, powder coated carbon steel mounting frame, and powder or PD207A 12" x 19" x 40" 110 Extrapolated <sup>1.4</sup> PD208A 12" x 21" x 47" 135 UUT34 Air reciever tank [Morgenton] Note: tank is welded carbon steel Note: tank is welded carbon steel Note: tank is welded carbon steel SLAE075 pump and 00736072E184T motor were tested in UUT36.	Note: dryers consist of aluminum extruded towers, powder coated carbon steel mounting frame, and powder       PD207A       12" x 19" x 40"       110       Extrapolated <sup>14</sup> PD208A       PD208A       12" x 21" x 47"       135       UUT34         Air reciever tank [Morgenton]       VES07285; AR0684xxx       80 gal       177       UUT34         Xirapolated subcomponents were tested or certified in other configurations. UUT34 is the most seismically vulnerable configuration of the model line.       VES07285; AR0684xxx       80 gal       177       UUT34	2	PD206A	8" x 15" x 48"	90	Extrapolated <sup>1,4</sup>
Air reciever tank [Morgenton] Note: tank is welded carbon steel       VES07285; AR0684xxx       80 gal       177       UUT34         xtrapolated subcomponents were tested or certified in other configurations. UUT34 is the most seismically vulnerable configuration of the model line.       80 gal       177       UUT34	PD208A     12" x 21" x 47"     135     UUT34       Air reciever tank [Morgenton] Note: tank is welded carbon steel     VES07285; AR0684xxx     80 gal     177     UUT34       Extrapolated subcomponents were tested or certified in other configurations. UUT34 is the most seismically vulnerable configuration of the model line.     177     UUT34	lote: dryers consist of aluminum extruded towers, powder coated carbon steel mounting frame, and pow	der PD207A	12" x 19" x 40"	110	Extrapolated <sup>1,4</sup>
Note: tank is welded carbon steel       VESU/285; AR0684xxx       80 gal       1/7       UU134         xtrapolated subcomponents were tested or certified in other configurations. UUT34 is the most seismically vulnerable configuration of the model line.       80 gal       1/7       UU134         ktrapolated subcomponents were tested or certified in other configurations. UUT34 is the most seismically vulnerable configuration of the model line.       80 gal       1/7       UU134	Note: tank is welded carbon steel     VESU/285; AR0684xxx     80 gal     1//     UU134       Extrapolated subcomponents were tested or certified in other configurations. UUT34 is the most seismically vulnerable configuration of the model line.     1//     1//     1//     1//     1//     1//     1//	BY	PD208A	12" x 21" x 47"	135	UUT34
ktrapolated subcomponents were tested or certified in other configurations. UUT34 is the most seismically vulnerable configuration of the model line. he SLAE075 pump and 007360T2E184T motor were tested in UUT10a and UUT35.	Extrapolated subcomponents were tested or certified in other configurations. UUT34 is the most seismically vulnerable configuration of the model line.					
		Note: tank is welded carbon steel trapolated subcomponents were tested or certified in other configurations. UUT34 is the most seismically ne SLAE075 pump and 007360T2E184T motor were tested in UUT10a and UUT35.	vulnerable configuration of the r	nodel line.	177	UUT34
		Note: tank is welded carbon steel trapolated subcomponents were tested or certified in other configurations. UUT34 is the most seismically ne SLAE075 pump and 007360T2E184T motor were tested in UUT10a and UUT35.	vulnerable configuration of the r	nodel line.	177	UUT34
		Note: tank is welded carbon steel trapolated subcomponents were tested or certified in other configurations. UUT34 is the most seismically ne SLAE075 pump and 007360T2E184T motor were tested in UUT10a and UUT35.	vulnerable configuration of the r	nodel line.	177	UUT34
		Note: tank is welded carbon steel trapolated subcomponents were tested or certified in other configurations. UUT34 is the most seismically ne SLAE075 pump and 007360T2E184T motor were tested in UUT10a and UUT35.	vulnerable configuration of the r	nodel line.	177	UUT34
		Note: tank is welded carbon steel trapolated subcomponents were tested or certified in other configurations. UUT34 is the most seismically ne SLAE075 pump and 007360T2E184T motor were tested in UUT10a and UUT35.	vulnerable configuration of the r	nodel line.	177	UUT34

#### Table 25 - Certified Subcomponents - Rotary Tooth Oil Free Air Systems, Rigid Base Mount



#### DCL Project Number: 43160-2301 Manufacturer: Powerex

Subcomponent [MFR]	Model	Notes	Material	Max Weight (lb)	Uni
Pump [POWEREX]	PCC5000AV	50 HP	Cast iron flange mounted motor with a welded steel platform, bolted framing and sheet metal.	1020	UUT
Motor [WEG]	03736ET3Y200L-W22	380/460V, 50 HP	Cast iron construction, flange mounted	584	UUT
Vertical tanks	AR063700AV	400 gal	Welded carbon steel (ASME, 165 PSIG)	640	UUT
[MANCHESTER TANK]	AR660000AV	660 gal	Welded carbon steel (ASME, 165 PSIG)	1500	UUT
	PXTM215X1AJ	208-230V / 460V, Duplex 50 HP	Painted carbon steel electrical cabinet, NEMA 12	250	Extrapo
Controllers <sup>1</sup>	PXTM218AXAJ	208-230V / 460V, Duplex 50 HP	Painted carbon steel electrical cabinet, NEMA 12	251	UUT
[POWEREX]	PXTM315X1AJ	208-230V / 460V, Triplex 50 HP	Painted carbon steel electrical cabinet, NEMA 12	260	Interp
	PXTM415X1AJ	208-230V / 460V, Quadruplex 50 HP	Painted carbon steel electrical cabinet, NEMA 12	261	UUT
	NDL2120	16"Lx25"Wx61"H		450	UUT
Desiccant dryers	NDL2130	16"tx25"Wx75"H Mothy Plland	Aluminum extruded towers; powder coated carbon steel mounting frame	750	Interpo
[NANO PSI]	NDL3130	16"Lx31"Wx75"H	Administrate excluded towers, powder coated carbon steer mounting name	800	Interpo
	NDL4130	16"Lx38"Wx75"H 01/23/20	24	1160	UUT

### Table 26 - Certified Subcomponents - Scroll Enclosed (SE) Air Systems, Rigid Base Mount



turer: Powerex				
Line: Medical Air and Laboratory Air				
Subcomponent [MFR]	Model	Notes	Max Weight (lb)	Unit
	SED1007	5 HP (2)	825	Extrapola
	SED15B7	7.5 HP (2)	840	Interpola
	SED20B7	10 HP (2)	900	Interpola
	SET1507	5 HP (3)	965	Extrapol
	SET2257	7.5 HP (3)	1110	Interpol
Scroll pumps [POWEREX] Note: pumps are die cast aluminum	SEQ2007	5 HP (4)	1125	UUT1
	SET30B7	10 HP (3)	1250	Interpo
	SEQ40B7 P-U	10 HP (4)	1600	Interpo
	SEH3007	5 HP (6)	1640	Interpo
	BY: Tsep50B7 thy P	10 HP (5)	1875	Interpo
	SEO4007	5 HP (8)	2000	Interpo
	DAT SEH45B701/23	/2024 7.5 нр (6)	2050	Interpo
	SEH60B7	10 HP (6)	2150	UUT
Scroll Pumps	SLAE05E SLAE05EHP	5 HP	42	UUT
[Powerex] Note: pumps are die cast aluminum with carbon steel bearings and shafts	SLAE075 SLAE075HP	7.5 HP	80	Interpo
	SLAE10 SLAE10HP	10 HP	1125       1250       1600       1640       1875       2000       2050       2150       42	UUT
Motors	00518ET3E184T-SRT	208-230V / 460V, 5 HP	71	UUT
[WEG] Note: motors are TEFC design with a carbon steel shell and welded feet	00736ET3E213T-S	208-230V / 460V, 7.5 HP	72	Interpo
	01036ET3E215T-S	208-230V / 460V, 10 HP	126	UUT:
Controllers [POWEREX]	HMI_PXMI	30" x 30" x 8" NEMA 12 enclosure; Human Machine Interface: Touchscreen	245	Extrapol
Note: electrical cabinets are painted carbon steel Note: lower case "x" in model number is 4 for 460V, 3 for 230V, and 2 for 20	PBMI_PXMI	30" x 42" x 12" NEMA 12 enclosure; Powerex Building Management Integrator: HMI panel w/ additional communications card	246	UUT10a, U

1. Extrapolated controller is a depopulated version of that tested in UUT10a and UUT11aii

### Table 27 - Certified Subcomponents - Scroll Enclosed (SE) Air Systems, Rigid Base Mount (Continued)



#### DCL Project Number: 43160-2301

Manufacturer:	Powerex
---------------	---------

Subcomponent [MFR]	Model	Notes	Max Weight (lb)	Unit
Controllers [POWEREX] Note: electrical cabinets are painted carbon steel Note: lower case "x" in model number is 4 for 460V, 3 for 230V, and 2 for 208V	PXEM218AxAJ	NEMA 12 enclosure, 10 HP duplex	200	UUT14b
	PXEM218FxAJ	NEMA 12 enclosure, 15 HP duplex	205	Interpolated
	PXEM318AxAJ	NEMA 12 enclosure, 10 HP triplex	205	Interpolated
	PXEM318FxAJ	NEMA 12 enclosure, 15 HP triplex	205	Interpolated
	PXEM418AxAJ	NEMA 12 enclosure, 10 HP quadruplex	210	Interpolated
	PXEM218GxAJ	NEMA 12 enclosure, 20 HP duplex	210	Interpolated
	PXEM218IxAJ	NEMA 12 enclosure, 30 HP duplex	210	Interpolated
	PXEM418FxAJ	NEMA 12 enclosure, 15 HP quadruplex	215	Interpolated
	PXEM318GxAJ	NEMA 12 enclosure, 20 HP triplex	215	Interpolated
	PXEM318ixAJ	NEMA 12 enclosure, 30 HP triplex	215	Interpolated
	PXEM418GxAJ USOU	NEMA 12 enclosure, 20 HP quadruplex	220	Interpolated
	PXEM418ixAJ	NEMA 12 enclosure, 30 HP quadruplex	220	Interpolated
·	DV T: PXEM218KxAJ Diland	NEMA 12 enclosure, 40 HP duplex	220	Interpolated
	PXEM215XxAJ	NEMA 12 enclosure, 22.5-60 HP duplex	220	Interpolated
	PXEM318KxAJ	NE <mark>MA 12 enc</mark> losure, 40 HP triplex	225	Interpolated
		NEMA 12 enclosure, 22.5-60 HP triplex	225	Interpolated
	PXEM418KxAJ	NEMA 12 enclosure, 40 HP quadruplex	230	UUT14b
	PXEM415XxAJ	NEMA 12 enclosure, 22.5-60 HP quadruplex	230	UUT12b
Vertical tanks [CAMPBELL HAUSFELD, ALSO BRANDED TWIN LAKES] Note: tanks are welded carbon steel	AR027400ST	120 gal	176	UUT10b
	AR051201AJ	200 gal	500	Interpolated
	AR051301AJ	240 gal	580	UUT11bii
Vertical tanks [MANCHESTER TANK] Note: tanks have ASME 165 PSIG construction with welded carbon steel	AR063700AV	400 gal	640	UUT12c
	CAR660000AV	660 gal	1500	UUT15b
Vertical tanks [Morganton] Note: tanks are welded carbon steel	VES07285	80 gal	177	UUT30a, 31a
	VES04767	120 gal	177	UUT31a
	VES04865	120 gal	325	Interpolated
	VES07303	200 gal	500	Interpolated
	VES07072	240 gal	580	UUT30a
### Table 29 - Certified Subcomponents (Continued) - Scroll Enclosed (SE) Air Systems, Rigid Base Mount



DCL Project Number: 43160-2301

Manufacturer: Powerex Product Line: Medical Air and Laboratory Air

Max Weight (lb)           200           200           330           330           360           660           660           720           720           720           200           200	Unit Extrapolated Extrapolated Extrapolated UUT10b Interpolated Interpolated Interpolated Interpolated Interpolated UUT4b <sup>1</sup>
200 330 330 360 660 660 720 720 720 720 200 200	Extrapolated Extrapolated Extrapolated UUT10b Interpolated Interpolated Interpolated Interpolated UUT4b <sup>1</sup>
330           330           360           360           660           660           720           720           720           200           200	Extrapolated Extrapolated UUT10b Interpolated Interpolated Interpolated Interpolated UUT4b <sup>1</sup>
330           360           360           660           720           720           720           200           200	Extrapolated UUT10b Interpolated Interpolated Interpolated Interpolated UUT4b <sup>1</sup>
360 360 660 720 720 720 720 200 200	UUT10b Interpolated Interpolated Interpolated Interpolated Interpolated UUT4b <sup>1</sup>
360 660 720 720 720 720 200 200	Interpolated Interpolated Interpolated Interpolated Interpolated UUT4b <sup>1</sup>
660 660 720 720 720 720 200 200	Interpolated Interpolated Interpolated Interpolated UUT4b <sup>1</sup>
660 720 720 720 720 200 200	Interpolated Interpolated Interpolated UUT4b <sup>1</sup>
720 720 720 200 200	Interpolated Interpolated UUT4b <sup>1</sup>
720 720 200 200	Interpolated UUT4b <sup>1</sup>
720 200 200	UUT4b <sup>1</sup>
200 200	
200	
200	Extrapolated
220	Extrapolated
330	Extrapolated
330	Extrapolated
360	UUT10b
360	Interpolated
660	Interpolated
660	Interpolated
720	Interpolated
720	UUT4b <sup>1</sup>
172	Extrapolated
209	Extrapolated
262	UUT11bii
366	Interpolated
450	UUT12b
750	Interpolated
800	Interpolated
1160	UUT12b
	172 209 262 366 450 750 800

### Table 30 - Certified Subcomponents - Medical Gas Automatic Changeover Manifolds, Rigid Wall Mount



DCL Project Number: 43160-2301

Manufacturer: Powerex Product Line: Medical Gas Automatic Changeover Manifolds Model Manufacturer Description Material Max Weight (lb) Unit ST981050AV Powerex Dome loaded spring assisted regulator Brass, Stainless steel 5 UUT40, UUT41 ST9810 Series Powerex Spring loaded regulator Brass, Stainless steel 5 UUT40, UUT41 ST980978AV UUT40, UUT41 Powerex Enclosure, right and left sides Carbon steel, Powder coated 5 ST980972AV Powerex Enclosure subplate Carbon steel, Powder coated 8 UUT40, UUT41 ST980974AV Powerex Enclosure cover Carbon steel, Powder coated 8 UUT40, UUT41 ST980740AV Enclosure hinge Stainless steel <1 UUT40, UUT41 Powerex PE004100AV Unitronics PLC/HMI Plastic 2 UUT40, UUT41 ST980970AV High Pressure connector block Brass 2 UUT40, UUT41 Powerex ST981011AV Fibox NEMA 4 electrical box Fiberglass, Plastic 2 UUT40, UUT41 Wall mount plate Carbon steel, Powder coated UUT40, UUT41 ST9890975AV Powerex 4 1/2 NPT (CGA) Inline CGA connect check valve Brass <1 UUT40, UUT41 Superior Inline NPT port check valve 1/2 NPT <1 UUT40, UUT41 Superior  $\cap$ Brass ST189301AV Pipe -Tube clamp UUT40, UUT41 Stauff Carbon steel, Plastic <1



### Table 31 - Tested Units



#### DCL Project Number: 43160-2301

Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Туре	Model number	Total number	Vertically stacked	Horizontally arrayed		nsions (ii	<u> </u>	Weight (lb.)	Mounting	Un
-76-		of pumps	pumps or layers	pumps	Length	Width	Height		······································	
	MSD0203(4L5)	2	2	1	50.0	31.0	78.0	1,040	Flexible base (neoprene), w/ internal isolation	UUT
	LSD0203(4L5)	2	2	1	74.0	32.0	62.0	1,090	Flexible base (neoprene), w/ internal isolation	UU
	MSQ0504(4P5)	4	4	1	77.0	32.0	77.0	1,870	Flexible base (neoprene), w/ internal isolation	UU
	MSD1506(4L5)	6	2	3		34.0		1,510	Flexible base (neoprene), w/ internal isolation	UU
	(controller/pump skid)	0	CODE	3	84 <sup>1</sup>	54.0	96 <sup>1</sup>	1,510	Flexible base (fleoprene), w/ internal isolation	00
	MSD1506(4L5)	NA	NAE	N/A	04	32.0	30	1,310	Flexible base (neoprene)	UU
	(receiver/dryer skid)		N/A			32.0		1,510	riexible base (neoprene)	00
	MSQ1506(4L5)	12	3			34.0		2,950	Flexible base (neoprene), w/ internal isolation	U
Scroll Stacked Air Systems	(controller/pump skid)	12	<b>3</b>		108 <sup>2</sup>	54.0	96 <sup>2</sup>	2,930	Flexible base (fleoprefie), w/ internal isolation	0
ote: indicated length and/or height	MSQ1506(4L5)	N/A	N/A	N/A	100	32.0	30	1,310	Flexible base (neoprene)	UL
e combined overall dimensions for	(receiver/dryer skid)	N/A	N/A	N/A		52.0		1,510	Flexible base (neoprene)	00
the individual unit skids	Dryer skid	N/A	N/A	N/A	98.0	32.0	79.0	1,060	Flexible base (neoprene)	U
	MSD15B4(4K5) (partially welded controller/compressor skid)	4	4//////////////////////////////////////	VYXXXX1XXX	61.0	32.5	78.0	1,550	Rigid base, w/ internal isolation	UU
	MSD15B4(4K5)			N/A	61.0	33.5	76.0	840	Diaid base	UU
	(receiver/dryer skid)	N/A	5P-1038		01.0	33.5	76.0	840	Rigid base	
	MSQ20B6(2P5) (partially welded controller/compressor skid)	8	7	2	79.0	33.5 <sup>3</sup>	78.0	3,120	Rigid base, w/ internal isolation	UU
	MSQ20B6(2P5)	N/A	N1/2	N/A	70.0		02.0	1.000	Divid have	
	(receiver/dryer skid)	N/A	N/A	N/A	79.0	43.0 <sup>3</sup>	93.0	1,680	Rigid base	UU
	Dryer skid (NDL110	<b>RV:</b> Tim	othv₀Rilar	d w			67.0			
	and NDL2110 dryers)	DY N/A IM	punywa nai	ICI N/A	55.0	31.5	67.0	800	Flexible base (neoprene)	U
	MSD02A3	2	2	N/A	50.5	30.5	75.0	1,060	Rigid base, w/ internal isolation	UL
-	MSP15A6 (receiver/dryer/controller skid)	N/A	N/A	N/A	86.0	34.0	91.0	2,110	Rigid base	UL
	MSP15A6 (pump skid)	► A 15	04 1230 10		86.0	34.0	80.0	4,030	Rigid base, w/ internal isolation	UU
	MSQ10C6 (bolted compressor/controller skid)	DAIL	01/23/2	$UZ4_1$	60.0	34.5	80.5	1,770	Rigid base, w/ internal isolation	U
	MSH20C6 (bolted compressor/controller skid)	12	4	3	90.5	35.0	89.5	4,590	Rigid base, w/ internal isolation	U
		KKRNNNKK	anne san	<i>tennen</i>		1		,	Flexible base (neoprene), w/ internal isolation	
	IOPDXX04	2	2	SHALL ST	54.0	71.0	81.0	1,720	[compressor skid];	U
Reciprocating Piston Compressor		MARKMA		MANNON	ľV	/1.0		2,720	Rigid base [tank/dryer/controller skid]	
Stacked Units	IOPDXX06 (compressor skid)	2	2		51.5	34.5	71.0	1,270	Flexible base (neoprene), w/ internal isolation	UL
	IOPDXX06 (tank/dryer/controller skid)	N/A	N/A	N/A	65.0	34.5	96.0	1,290	Rigid base	UL
ompact Duplex Scroll Air Systems	LSD10C3	2	1	2	46.5	34.5	75.5	1,490	Rigid base, w/ internal isolation	00
ompact Duplex Scroll All Systems	MDRC05074FA5				40.5	54.5	75.5	1,450	nigio base, wy internal isolation	
	(pump skid)		1	1	77.5	39.4	65.2	2,930	Rigid base, w/ internal isolation	UU
	MDRC05074FA5	BI	HI DIN	9						
Rotary Tooth Oil Free Air Systems	(dryer/controller skid)	N/A	N/A	N/A	32.0	99.2	80.3	1,760	Rigid base	UL
	MDRC05074FA5									
	(400 gallon receiver tank)	N/A	N/A	N/A	38.2	47.2	101.5	640	Rigid base	UL
Scroll Enclosed Compressed Air	MSED200425 (pump skid)	4	4	1	46.4	35.2	61.2	1,030	Rigid base, w/ internal isolation	UU
Systems			4	1	40.4	33.2	01.2	1,030	Rigid base, wy internal isolation	
	MSED200425 (controller skid); 2 controllers tested: PXEM218G2AJ and	N/A	N/A	N/A	55.0	39.8	79.4	560	Rigid base	UL
Note: compressor enclosures are	PXEM418G2AJ									-
ucturally independent and flexibly	LSEQ60B845	6	3,3	2	51.0	73.8	61.2	2,740	Rigid base, w/ internal isolation	UL
onnected. Only one compressor	(pump skid)									_
closure tested in each UUT14a and	LSEQ60B845	N/A	N/A	N/A	42.0	42.0	126.5	1,500	Rigid base	UL
UUT15a.	(660 gallon receiver tank)				-				5	
	Platform base, 80 gallon vertical tank, 240 gallon vertical tank	N/A	N/A	N/A	33.5	60.0	94.0	1,010	Rigid base	UL
Miscellaneous	Platform base, 80 gallon vertical tank, 240 gallon vertical tank	N/A	N/A	N/A	33.5	60.0	94.0	1,010	Flexible base (neoprene)	UU
	Ladder Frame base, 80 gallon vertical tank, 120 gallon vertical tank	N/A	N/A	N/A	32.0	55.0	75.0	630	Rigid base	UU
	Ladder Frame base, 80 gallon vertical tank, 120 gallon vertical tank	N/A	N/A	N/A	32.0	55.0	75.0	630	Flexible base (neoprene)	UU

Length and height are combined dimensions of UUT7 and UUT5b.
 Overall width dimension for UUT11aii/bii is 90", which includes an 18" separation between the two equipment skids.

### Table 31 - Tested Units (Continued)



DCL Project Number: 43160-2301

Manufacturer: Powerex

Product Line: Medical Gas Automatic Changeover Manifolds												
Туре	Powerex Model	Control	Gas Container Type <sup>1</sup>	Cabinet	Delivery Pressure	Dimensions (inches)		Weight (lb.)	Mounting	Unit		
Туре		Control				Depth	Width	Height	weight (ib.)	Wouldting	Offit	
Medical Gas Automatic Changeover	MFLD-CYL-NFPA-O2-N4	Digital	CxC	NEMA 4	55 PSIG	10.0	17.5	20.5	69	Rigid wall	UUT40	
Manifolds	MFLD-LIQ-NFPA-N2-350	Digital	LxL	Standard	180 PSIG	10.0	17.5	20.5	72	Rigid wall	UUT41	

1. C x C = Cylinder x Cylinder, and L x L = Liquid x Liquid



# UUT1 - DCL Test Report 33299-1301

### UNIT UNDER TEST (UUT) Summary Sheet



#### Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: MSD0203(4L5)

Product Construction Summary: Powder coated structural steel skid and frame. Unit is internally isolated.

**Options / Component Summary:** 2HP scroll pumps with WEG motors, 80 gallon vertical receiver tank, BASIC\_PSM controller in NEMA 12 enclosure, and PMD07T desiccant air dryer.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

			UU	T Properties					
<b>Operating Weight</b>	Tuested	Unit	Dimensions (in) Lowest Natural Frequency (Hz						
(lb)	Tuesteu	onnt	Length	Width	Height	Front-Back	Vertical		
1,040	UUT	L	50.0	31.0	78.0	6.3	5.8	24.3	
		.5	Seismic	Test Paramet	ers				
Building Code	Test Criteria	Sds (g)	z/h	lp	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)	
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53	

### Unit Mounting Description:

The unit was base mounted to the shake table interface frame through the skid using (4) Airloc model 32 neoprene pads and (4) 3/8"diameter, Grade 5 bolts and flat washers spaced at approximately 30" widthwise and 48" lengthwise on-center.



**UUT1** Overall View

# UUT2 - DCL Test Report 33299-1301



### **UNIT UNDER TEST (UUT) Summary Sheet**

#### Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: LSD0203(4L5)

Product Construction Summary: Powder coated structural steel skid and frame. Unit is internally isolated.

**Options / Component Summary:** 2HP scroll pumps with WEG motors, 80 gallon vertical receiver tank, PBMI\_PXMI controller in NEMA 12 enclosure, and KMT3 desiccant air dryer.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

			UU	T Properties								
<b>Operating Weight</b>		I	Dimensions (in	Lowest Natural Frequency (Hz)								
(Ib)	Tested I	Jnit	Length	Width	Height	Front-Back	ront-Back Side-Side Vert					
1,090	UUT2	2	74.0	32.0	62.0	8.8	8.0	13.5				
			Seismic	Test Paramet	ers							
Building Code	Test Criteria	Sds (g)	z/h	lp	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)				
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53				
					YXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	1						

### Unit Mounting Description:

The unit was base mounted to the shake table interface frame through the skid using (4) Airloc model 32 neoprene pads and (4) 1/2"diameter, Grade 5 bolts and flat washers spaced at approximately 31" widthwise and 72" lengthwise on-center.



UUT2 Overall View

# UUT3 - DCL Test Report 33299-1301

## UNIT UNDER TEST (UUT) Summary Sheet



#### Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: MSQ0504(4P5)

Product Construction Summary: Powder coated structural steel skid and frame. Unit is internally isolated.

**Options / Component Summary:** 5HP scroll pumps with WEG motors, 120 gallon vertical receiver tank, PBMI\_PXMI controller in NEMA 12 enclosure, and PMD30 desiccant air dryer.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

			UU	T Properties							
<b>Operating Weight</b>		I	Dimensions (in	Lowest Natural Frequency (Hz)							
(Ib)	Tested l	Jnit	Length	Width	Height	Front-Back	ront-Back Side-Side Vert				
1,870	UUTS	3	77.0	32.0	77.0	6.5	5.0	14.5			
			Seismic	Test Paramet	ters						
Building Code	Test Criteria	Sds (g)	z/h	lp 🖉	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)			
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53			
						1					

#### Unit Mounting Description:

The unit was base mounted to the shake table interface frame through the skid using (4) Airloc model 32 neoprene pads and (4) 1/2"diameter, Grade 5 bolts and flat washers spaced at approximately 31" widthwise and 75" lengthwise on-center.



UUT3 Overall View

# UUT4a - DCL Test Report 33299-1301



### **UNIT UNDER TEST (UUT) Summary Sheet**

#### Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: MSD1506(4L5) (controller/compressor skid)

Product Construction Summary: Powder coated structural steel skid and frame. Unit is internally isolated.

*Options / Component Summary:* 5HP scroll pumps with WEG motors, PBMI\_PXMI controller in NEMA 12 enclosure.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

			UU	T Properties							
<b>Operating Weight</b>		D	imensions (in	Lowest Natural Frequency (Hz)							
(lb)	Tested U	Jnit	Length	Width	Height	Front-Back	Back Side-Side Ver				
1,510	UUT4	a	84.0*	34.0	96.0*	6.8	5.5	12.0			
			Seismic	Test Paramet	ters						
Building Code	Test Criteria	Sds (g)	z/h	lp 💦	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)			
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53			

\*Note: Length and height are combined dimensions for UUT4a and UUT4b.

### **Unit Mounting Description:**

The unit was base mounted to the shake table interface frame through the skid using (4) Airloc model 32 neoprene pads and (4) 1/2"diameter, Grade 5 bolts and flat washers spaced approximately 32" widthwise and 74" lengthwise on-center.



UUT4a Overall View

# UUT4b - DCL Test Report 33299-1301



### **UNIT UNDER TEST (UUT) Summary Sheet**

Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: MSD1506(4L5) (receiver/dryer skid)

Product Construction Summary: Powder coated structural steel skid and frame.

Options / Component Summary: 240 gallon vertical receiver tank and PMD111 desiccant air dryer.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

			UU	T Properties								
<b>Operating Weight</b>		D	imensions (in	Lowest Natural Frequency (Hz)								
(lb)	Tested <b>U</b>	Jnit	Length	Width	Height	Front-Back	Front-Back Side-Side V					
1,310	UUT4	b	84.0*	32.0	96.0*	5.5	5.0	22.5				
			Seismic	Test Parame	ters							
Building Code	Test Criteria	Sds (g)	z/h	lp 💦	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)				
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53				

\*Note: Length and height are combined dimensions for UUT4a and UUT4b.

### Unit Mounting Description:

The unit was base mounted to the shake table interface frame through the skid using (4) Airloc model 32 neoprene pads and (4) 1/2"diameter, Grade 5 bolts and flat washers spaced approximately 30" widthwise and 74" lengthwise on-center.



UUT4b Overall View

# UUT5b - DCL Test Report 33299-1301



## **UNIT UNDER TEST (UUT) Summary Sheet**

Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: MSQ1506(4L5) (receiver/dryer skid)

Product Construction Summary: Powder coated structural steel skid and frame.

Options / Component Summary: 240 gallon vertical receiver tank and DME050RX desiccant air dryer.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

		UU	T Properties							
	D	imensions (in	Lowest Natural Frequency (Hz)							
Tested L	Jnit	Length	Width	Height	Front-Back	ront-Back Side-Side Vert				
UUT5	b	108.0*	32.0	96.0*	6.3	5.5	17.5			
		Seismic	Test Paramet	ers						
Test Criteria	Sds (g)	z/h	lp	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)			
ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53			
	UUT5 Test Criteria	Tested Unit UUT5b Test Criteria Sds (g)	Dimensions (in       Tested Unit     Length       UUT5b     108.0*       Seismic       Test Criteria     Sds (g)     z/h	UUT5b 108.0* 32.0 Seismic Test Paramet Test Criteria Sds (g) z/h lp	Jimensions (in)       Tested Unit     Length     Width     Height       UUT5b     108.0*     32.0     96.0*       Seismic Test Parameters       Test Criteria     Sds (g)     Z/h     Ip     Aflx-H (g)	Dimensions (in)     Lowest M       Tested Unit     Length     Width     Height     Front-Back       UUT5b     108.0*     32.0     96.0*     6.3       Seismic Test Parameters       Test Criteria     Sds (g)     z/h     Ip     Aflx-H (g)     Arig-H (g)	Lowest Vural Freque       Tested Unit     Length     Width     Height     Front-Back     Side-Side       UUT5b     108.0*     32.0     96.0*     6.3     5.5       Seismic Test Parameters       Test Criteria     Sds (g)     Z/h     Ip     Aflx-H (g)     Arig-H (g)     Aflx-V (g)			

\*Note: Length and height are combined dimensions for UUT7 and UUT5b.

### **Unit Mounting Description:**

The unit was base mounted to the shake table interface frame through the skid using (4) Airloc model 32 neoprene pads and (4) 1/2"diameter, Grade 5 bolts and flat washers spaced approximately 30" widthwise and 78" lengthwise on-center.



UUT5b Overall View

# UUT6 - DCL Test Report 33299-1301



### **UNIT UNDER TEST (UUT) Summary Sheet**

Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: Desiccant air dryers KMT4, DME015, DME060 and DME080RX

**Product Construction Summary:** Powder coated structural steel skid and frame.

Options / Component Summary: KMT4, DME015, DME060 and DME080RX desiccant air dryers.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

			UU	T Properties						
<b>Operating Weight</b>		D	imensions (in	Lowest Natural Frequency (Hz)						
(lb)	Tested	Unit	Length	Width	Height	Front-Back	Side-Side	Vertical		
1,060	UUT	5	98	32	32 79 7.5 5.0					
			Seismic	Test Paramet	ers					
Building Code	Test Criteria	Sds (g)	z/h	lp	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)		
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53		

### Unit Mounting Description:

The unit was base mounted to the shake table interface frame using (4) Airloc model 32 neoprene pads and (4) 1/2"-diameter, Grade 5 bolts and flat washers spaced approximately 30" widthwise and 95" lengthwise on-center.



# UUT7 - DCL Test Report 34796-1401c

## UNIT UNDER TEST (UUT) Summary Sheet



#### Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: MSQ1506(4L5) (controller/compressor skid)

Product Construction Summary: Powder coated structural steel skid and frame. Unit is internally isolated.

*Options / Component Summary:* 5HP scroll pumps with WEG motors, PBMI\_PXMI controller in NEMA 12 enclosure.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

			UU	T Properties							
<b>Operating Weight</b>		D	imensions (in	Lowest Natural Frequency (Hz)							
(lb)	Tested U	Jnit	Length	Width	Height	Front-Back	Back Side-Side Vert				
2,950	UUT7	7	108.0*	34.0	96.0*	4.5	4.0	4.0			
			Seismic	Test Parame	ters						
Building Code	Test Criteria	Sds (g)	z/h	lp	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)			
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53			

\*Note: Length and height are combined dimensions for UUT7 and UUT5b.

### **Unit Mounting Description:**

The unit was base mounted to the shake table interface frame through the skid using (4) Airloc model 32 neoprene pads and (4) 1/2"diameter, Grade 5 bolts and flat washers spaced approximately 32" widthwise and 95" lengthwise on-center.



**UUT7** Overall View

# UUT9 - DCL Test Report 39372-1601b



### **UNIT UNDER TEST (UUT) Summary Sheet**

Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: Desiccant air dryers NDL110 and NDL2110

Product Construction Summary: Powder coated structural steel skid and frame

Options / Component Summary: NDL110 and NDL2110 desiccant air dryers.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

			UU	T Properties							
<b>Operating Weight</b>		D	imensions (in	Lowest Natural Frequency (Hz)							
(lb)	Tested (	Unit	Length	Width	Height	Front-Back	nt-Back Side-Side Ver				
800	UUT9 55.0 31.5 67.0 6.5 6.5							19.5			
			Seismic	Test Paramet	ters						
Building Code	Test Criteria	Sds (g)	z/h	lp	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)			
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53			
					YYYYYYY						

### Unit Mounting Description:

The unit was base mounted to the shake table interface frame through the skid using (4) Airloc model 32 neoprene pads and (4) 1/2"diameter, Grade 5 bolts and flat washers spaced at approximately 30" widthwise and 53" lengthwise on-center.



## UUT10a,b - DCL Test Report 39372-1601b



### **UNIT UNDER TEST (UUT) Summary Sheet**

#### Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: MSD15B4(4K5) partially welded controller/compressor skid (UUT10a) and receiver/dryer skid (UUT10b)

**Product Construction Summary:** Powder coated structural steel skid and frame. UUT10a is internally isolated.

1.0

**Options / Component Summary:** 7.5 HP scroll pumps with WEG motors, 120 gallon vertical receiver tank, BASIC\_PSM controller, PMD45 desiccant air dryer.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

			UU	T Properties				
<b>Operating Weight</b>		[	Dimensions (in	Lowest N	Natural Frequency (Hz)			
(lb)	Tested	Unit	Length	Width	Height	Front-Back	Side-Side	Vertical
1,550	UUT1	Da	61.0	32.5	78.0	6.5	4.5	24.0
840	UUT1	Db	61.0	33.5	76.0	4.0	6.0	23.0
		NE	Seismic	Test Paramet	ers			
Building Code	Test Criteria	Sds (g)	z/h	Ip 🛛	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)

1.5

2-0380

3.20

2.40

1.33

0.53

#### Unit Mounting Description:

ICC-ES AC156

2.00

CBC 2022

Each skid was base mounted to the shake table interface frame with (4) 1/2"-diameter, Grade 5 bolts and flat washers spaced at approximately 30.5" widthwise and 57.5" lengthwise on-center for both skids.



UUT10a,b Overall View

## UUT11aii,bii - DCL Test Report 39372-1601b



### **UNIT UNDER TEST (UUT) Summary Sheet**

#### Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: MSQ20B6(2P5) partially welded controller/pump skid (UUT11aii) and receiver/dryer skid (UUT11bii)

Product Construction Summary: Powder coated structural steel skid and frame. UUT11aii is internally isolated.

**Options / Component Summary:** 10 HP scroll pumps with WEG motors, 240 gallon vertical receiver tank, PBMI\_PXMI controller, NDL130 desiccant air dryer.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

	UUT Properties											
Operating Weight	Tested Unit		Dimensions (ir	n)	Lowest N	latural Frequ	ency (Hz)					
(lb)	Tested Onit	Length	Width	Height	Front-Back	Side-Side	Vertical					
3,120	UUT11aii	79.0	0 33.5	78.0	3.0	3.0	7.5					
1,680	UUT11bii	79.0	43.0	93.0	4.5	4.0	17.0					
4,800	Total	79.0	90.0 *	93.0	NA	NA	NA					

\*Overall width dimension that includes an 18" separation between the two equipment skids.

	Seismic Test Parameters										
Building Code	Test Criteria	Sds (g)	z/h)Sł	2-0 <b>1</b> 80	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)			
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	<mark>2</mark> .40	1.33	0.53			

#### Unit Mounting Description:

### BY: Timothy Piland

Each skid was base mounted to the shake table interface frame with (4) 1/2"-diameter, Grade 5 bolts and flat washers spaced at approximately 31' widthwise and 74" lengthwise on-center for UUT11aii and 42" widthwise and 74" lengthwise and 74" leng



UUT11aii, UUT11bii Overall View

## UUT12a - DCL Test Report 41182-1701a



# **UNIT UNDER TEST (UUT) Summary Sheet**

Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: MDRC05074FA5 (pump skid)

Product Construction Summary: Painted carbon steel enclosure. Unit is internally isolated.

Options / Component Summary: 50 HP pumps with WEG motors.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

			UU	T Properties						
<b>Operating Weight</b>		Dimensions (in)						ency (Hz)		
(lb)	Tested l	Jnit	Length	Width	Height	Front-Back	Atural Frequencies       Side-Side       6.0       Aflx-V (g)       1.33	Vertical		
2,930	UUT12	2a	77.5	39.4	65.2	5.5 6.0 28.0				
			Seismic	Test Parame	ters					
Building Code	Test Criteria	Sds (g)	z/h	lp	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)		
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53		
Unit Mounting Des	cription:	S		wy av		-				

### Unit Mounting Description:

The unit was base mounted with (4) 7/16"-diameter Grade 8 bolts, flat washers, and (4) 3"x3"x1/4" galvanized finish low carbon steel washers spaced approximately 38" widthwise and 34" lengthwise on-center. Pre-test retrofit: the side panels were bolted to the enclosure frame with an additional (4) 5/16-inch diameter Grade 5 bolts, nuts, and washers each.



## UUT12b - DCL Test Report 41182-1701a

## UNIT UNDER TEST (UUT) Summary Sheet



Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: MDRC05074FA5 (dryer/controller skid)

Product Construction Summary: Powder coated structural steel skid and frame.

Options / Component Summary: Quadruplex controller, NDL2120 and NDL4130 desiccant air dryers.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

			UU	T Properties				
<b>Operating Weight</b>		D	imensions (in	Lowest N	Natural Frequency (Hz)			
(lb)	Tested	Unit	Length	Width	Height	Front-Back	Side-Side	Vertical
1,760	UUT12	2b	32.0	99.2	80.3	5.0	10.5	>33.3
			Seismic	Test Paramet	ters	-	-	
Building Code	Test Criteria	Sds (g)	z/h	() Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53
				MANNY AL YA D	XXXXXXXX	-		

#### Unit Mounting Description:

The unit was base mounted with (4) 1/2"-diameter Grade 5 bolts and flat washers spaced approximately 96" widthwise and 30" lengthwise on-center with (4) 3"x3"x3/16" galvanized finish low carbon steel washers.



UUT12b Front View

UUT12b Side View

## UUT12c - DCL Test Report 41182-1701a



### **UNIT UNDER TEST (UUT) Summary Sheet**

Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: MDRC05074FA5 (400 gallon receiver tank)

Product Construction Summary: Painted carbon steel

Options / Component Summary: 400 gallon vertical receiver tank

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

			UU	T Properties				
<b>Operating Weight</b>		D	imensions (in	Lowest N	t Natural Frequency (Hz)			
(lb)	Tested l	Jnit	Length	Width	Height	Front-Back	Side-Side	Vertical
640	UUT12	2c	38.2	47.2	101.5	14.0	14.5	>33.3
			Seismic	Test Parame	ters			
Building Code	Test Criteria	Sds (g)	z/h	lp 💦	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53
Unit Mounting Des	cription:	SI				7		

#### Unit Mounting Description:

The unit was base mounted with (4) 1/2"-diameter Grade 8 bolts spaced approximately 19" widthwise and 19" lengthwise on-center, each with a 1/2" Grade 8 washer, 5/8" Grade 8 washer, and 2"x2"x3/16" low carbon steel black oxide finish plate washer.



UUT12c Overall View and Mounting Hardware

## UUT14a - DCL Test Report 41182-1701a



### **UNIT UNDER TEST (UUT) Summary Sheet**

Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: MSED200425 (pump skid)

Product Construction Summary: Painted carbon steel enclosure. Unit is internally isolated.

Options / Component Summary: 5 HP pumps with WEG motors.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

			UU	T Properties				
<b>Operating Weight</b>		imensions (in	Lowest N	latural Frequency (Hz)				
(lb)	Tested	Unit	Length	Width	Height	Front-Back	Side-Side	Vertical
1,030	UUT14	4a	46.4	35.2	61.2	4.5	5.5	>33.3
			Seismic	Test Paramet	ers			
Building Code	Test Criteria	Sds (g)	z/h	lp	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53

### Unit Mounting Description:

The unit was base mounted with (4) 1/2"-diameter Grade 5 bolts and washers spaced approximately 28" widthwise and 33" lengthwise on-center with (4) 1 1/2"x1 1/2"x1/4" galvanized finish low carbon steel washers.



UUT14a Overall View

## UUT14b - DCL Test Report 41182-1701a



### **UNIT UNDER TEST (UUT) Summary Sheet**

Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: MSED200425 (controller skid); 2 controllers tested: PXEM218G2AJ and PXEM418G2AJ

Product Construction Summary: Powder coated structural steel skid.

Options / Component Summary: Custom skid with duplex and quadruplex PXE controllers.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

		UU	T Properties				
	Lowest N	latural Freque	ency (Hz)				
Tested L	Jnit	Length	Width	Height	Front-Back	Side-Side	Vertical
UUT14	b	55.0	39.8	79.4	11.0	9.5	>33.3
		Seismic	Test Parame	ters	-		
Test Criteria	Sds (g)	z/h	lp	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53
cription:	SI				7		
	UUT14 Test Criteria ICC-ES AC156	Tested Unit       UUT14b       Test Criteria     Sds (g)       ICC-ES AC156     2.00	Dimensions (in)           Tested Unit         Length           UUT14b         55.0           Seismic           Test Criteria         Sds (g)         z/h           ICC-ES AC156         2.00         1.0	Junction         Junction	Image: Second S	Lowest N           Tested Unit         Length         Width         Height         Front-Back           UUT14b         55.0         39.8         79.4         11.0           Seismic Test Parameters           Test Criteria         Sds (g)         Z/h         Ip         Aflx-H (g)         Arig-H (g)           ICC-ES AC156         2.00         1.0         1.5         3.20         2.40	Lowest Variable         Lowest Variable           Tested Unit         Length         Width         Height         Front-Back         Side-Side           UUT14b         55.0         39.8         79.4         11.0         9.5           Seismic Test Parameters           Test Criteria         Sds (g)         Z/h         Ip         Aflx-H (g)         Arig-H (g)         Aflx-V (g)           ICC-ES AC156         2.00         1.0         1.5         3.20         2.40         1.33

The unit was base mounted with (4) 1/2"-diameter Grade 5 bolts, flat washers, and plain finish 1 1/4"x1 1/4" x 3/8" malleable iron bevel washers spaced approximately 30" widthwise and 52" lengthwise on-center. Each control panel was braced to the skid with one piece of B-Line B45 14 gage galvanized carbon steel channel attached with B-Line B230 brackets (one bracket per channel end) and two Grade 2, 1/2"-diameter bolts and nuts with flat washers per bracket.



UUT14b - duplex panel

UUT14b - quadruplex panel

## UUT15a - DCL Test Report 41182-1701a



## **UNIT UNDER TEST (UUT) Summary Sheet**

Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: LSEQ60B845 (pump skid)

Product Construction Summary: Painted carbon steel enclosure. Unit is internally isolated.

Options / Component Summary: 10 HP pumps with WEG motors.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

			UU	T Properties							
<b>Operating Weight</b>		imensions (in	Lowest N	latural Freque	ency (Hz)						
(lb)	Tested l	Jnit	Length	Width	Height	Front-Back	Side-Side	Vertical			
2,740	UUT15	5a	51.0	73.8	61.2	5.0					
			Seismic	Test Parame	ters						
Building Code	Test Criteria	Sds (g)	z/h	lp	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)			
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53			
Unit Mounting Des	cription:	E.				2					

### Unit Mounting Description:

The unit was base mounted with (4) 1/2"-diameter Grade 5 bolts, flat washers, and 1 1/2"x1 1/2"x1/4" galvanized finish low carbon steel plate washers spaced approximately 72" widthwise and 37" lengthwise on-center. Pre-test retrofit: the top diaphragm corners were welded together, and the side panels were bolted to the frame with an additional four 5/16-inch diameter Grade 5 bolts, nuts and washers each.



UUT15a Overall View and Mounting Hardware

## UUT15b - DCL Test Report 41182-1701a



### UNIT UNDER TEST (UUT) Summary Sheet

Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: LSEQ60B845 (660 gallon receiver tank)

Product Construction Summary: Carbon steel

Options / Component Summary: 660 gallon vertical receiver tank

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

			UU	T Properties				
<b>Operating Weight</b>		imensions (in	Lowest N	atural Frequency (Hz) Side-Side Vertical 9.5 >33.3				
(lb)	Tested U	Jnit	Length	Width	Height	Front-Back	Side-Side	Vertical
1,500	UUT15	5b	42.0	42.0	126.5	14.5	9.5	>33.3
			Seismic	Test Parame	ters			
Building Code	Test Criteria	Sds (g)	z/h	lp	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53

#### Unit Mounting Description:

The unit was base mounted with (4) 1/2"-diameter Grade 8 bolts, flat washers, and 3"x3"x3/16" galvanized finish low carbon steel washers spaced approximately 20" widthwise and 20" lengthwise on-center.



UUT15b Overall View

## UUT30a - DCL Test Report 42747-1801



## UNIT UNDER TEST (UUT) Summary Sheet

Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: VES07285 (80gal tank), VES07072 (240gal tank)

Product Construction Summary: Powder coated structural steel skid

**Options / Component Summary:** Platform frame mounted tanks

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

			UU	T Properties						
<b>Operating Weight</b>		C	imensions (in	)		Lowest N	Lowest Natural Frequency (Hz)			
(lb)	Tested	Unit	Length	Width	Height	Front-Back	Natural Freq Side-Side 5.5 Aflx-V (g) 1.33	Vertical		
1,010	UUT30	Da	33.5	60.0	94.0	4.0	5.5	31.5		
			Seismic	Test Paramet	ers					
Building Code	Test Criteria	Sds (g)	z/h	lp	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)		
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53		

### Unit Mounting Description:

UUT30a was base mounted with (4) 1/2" diameter Grade 5 bolts and flat washers spaced approximately 50" widthwise and 31" lengthwise on center.



UUT30a Overall View

## UUT31a - DCL Test Report 42747-1801



# UNIT UNDER TEST (UUT) Summary Sheet

Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: VES07285 (80gal tank), VES04767 (120gal tank)

Product Construction Summary: Powder coated structural steel skid

**Options / Component Summary:** Ladder frame mounted tanks

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

			UU	T Properties				
<b>Operating Weight</b>		D	imensions (in)	Lowest N	atural Frequency (Hz) Side-Side Vertical			
(lb)	Tested U	Jnit	Length	Width	Height	Front-Back	Side-Side	Vertical
630	UUT3:	La	32	55	75	8.5	11.5	>33.3
			Seismic	Test Paramet	rers			
Building Code	Test Criteria	Sds (g)	z/h	lp	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53

### Unit Mounting Description:

UUT31a was base mounted with four 1/2" diameter Grade 5 bolts, flat washers, and 1 1/4"x1 1/4" x 3/8" malleable iron bevel washers spaced approximately 53" widthwise and 30" lengthwise on center.



## UUT30b - DCL Test Report 42747-1801



### **UNIT UNDER TEST (UUT) Summary Sheet**

Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: VES07285 (80gal tank), VES07072 (240gal tank)

Product Construction Summary: Powder coated structural steel skid

**Options / Component Summary:** Platform frame mounted tanks

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties												
<b>Operating Weight</b>		D		Lowest Natural Frequency (Hz)								
(lb)	Tested	Unit	Length	Front-Back	Side-Side	Vertical						
1,010	UUT30	)b	33.5	3.0	3.5	10.5						
			Seismic	Test Paramet	ers							
Building Code	Test Criteria	Sds (g)	z/h	lp	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)				
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53				

### Unit Mounting Description:

UUT30b was base mounted with (4) 1/2" diameter Grade 5 bolts and flat washers spaced approximately 50" widthwise and 31" lengthwise on-center through an Airloc model 32 neprene pad. -0380



UUT30b Overall View

## UUT31b - DCL Test Report 42747-1801



# **UNIT UNDER TEST (UUT) Summary Sheet**

Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: VES07285 (80gal tank), VES04767 (120gal tank)

Product Construction Summary: Powder coated structural steel skid

Options / Component Summary: Ladder frame mounted tanks

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

			UU	T Properties					
<b>Operating Weight</b>		D	imensions (in		Lowest Natural Frequency (Hz)				
(lb)	Tested (	Jnit	Length	Front-Back	Side-Side	Vertical			
630	UUT3:	1b	32	75	8.0	9.5	16.0		
			Seismic	Test Paramet	ters				
Building Code	Test Criteria	Sds (g)	z/h	lp	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)	
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53	
					YYYYYYYYY				

### Unit Mounting Description:

UUT31b was base mounted with four 1/2" diameter Grade 5 bolts, flat washers, and 1 1/4" x1 1/4" x 3/8" malleable iron bevel washers spaced approximately 53" widthwise and 30" lengthwise on-center through an Airloc model 32 neprene pad.



# UUT32 - DCL Test Report 43305-1801

### UNIT UNDER TEST (UUT) Summary Sheet



#### Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: MSD02A3

Product Construction Summary: Powder coated structural steel skid

Options / Component Summary: Medical air and laboratory air unit with Trident PD204A desiccant dryer.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties												
<b>Operating Weight</b>		D	imensions (in	)		Lowest N	Lowest Natural Frequency (Hz)					
(lb)	Tested U	Jnit	Length	Front-Back	Side-Side	Vertical						
1,060	UUT3	UUT32 51 31 75					9.5	21.0				
			Seismic	Test Parame	ters							
Building Code	Test Criteria	Sds (g)	z/h	lp 💦	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)				
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53				

### Unit Mounting Description:

UUT32 was base mounted with (4) 1/2"-diameter Grade 5 bolts and flat washers spaced approximately 30" widthwise and 20" lengthwise on-center.



UUT32 Overall View

# UUT33i,ii - DCL Test Report 43305-1801

### UNIT UNDER TEST (UUT) Summary Sheet



Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: MSP15A6

Product Construction Summary: Powder coated structural steel skid

Options / Component Summary: Medical air and laboratory air unit with Trident PD213A desiccant dryer.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

	UUT Properties												
<b>Operating Weight</b>		0	)imensions (in	)		Lowest N	latural Frequ	ency (Hz)					
(lb)	Tested	Unit	Length	Width	Height	Front-Back	Side-Side	Vertical					
2,110	UUT3	UUT33i		34	91	5.0	6.5	27.5					
4,030	UUT33	3ii	862	OL34E	80	5.5	4.0	22.0					
		15	Seismic	Test Paramet	ers		-						
Building Code	Test Criteria	Sds (g)	z/h	lp 🖉	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)					
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53					

### Unit Mounting Description:

UUT33i and 33ii were base mounted with (8) 1/2"-diameter Grade 5 bolts and flat washers spaced approxmately 31" widthwise and 20" lengthwise on-center for both skids.





UUT33i and UUT33ii Overall Views

# UUT34 - DCL Test Report 43160-2301b

## UNIT UNDER TEST (UUT) Summary Sheet



#### Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: LSD10C3

Product Construction Summary: Painted carbon steel

**Options / Component Summary:** Duplex system. Scroll compressor assemblies (10 hp), PBMI\_PXMI controller in NEMA 12 enclosure, PD208A desicant dryer, 80 gallon air reciever tank.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

			UUT Pro	operties							
Operating Weight	Testec	lunit	D	Dimensions (in) Lowest Natural Frequer							
(lb)	Tester	i unit	Length	Width	Height	Front-Back	Side-Side	Vertical			
1,490	τυυ	34	46.5	34.5	75.5	6.0	6.5	15.5			
		6	Seismic Test	Parameters	1.						
Building Code	Test Criteria	Sds (g)	z/h	lp	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)			
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53			

### Unit Mounting Description:

UUT34 wase rigidly base mounted to the DCL interference plate with (4) ½" Grade 5 bolts and (8) flat washers. The bolts were spaced 30.5" apart widthwise and 44" apart lengthwise on-center.



UUT34 Overall View

# UUT35 - DCL Test Report 43160-2301b



### **UNIT UNDER TEST (UUT) Summary Sheet**

#### Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: MSQ10C6

### Product Construction Summary: Carbon steel

**Options / Component Summary:** Quadruplex system. Scroll compressor assembles (7.5 hp) and BASIC\_PSM controller in NEMA 12 enclosure.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

			UUT Pro	operties					
Operating Weight	Tested unit		D	imensions (in	)	Lowest Natural Frequency (Hz)			
(lb)	Tested	unit	Length	Width	Height	Front-Back	Side-Side	Vertical	
1,770	υυτ	35	60.0	34.5	80.5	4.5	6.5	14.5	
	_	A	Seismic Test	Parameters	1	-	-		
Building Code	Test Criteria	Sds (g)	z/h	lp	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)	
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53	

#### Unit Mounting Description:

UUT35 was rigidly base mounted to the DCL interference plate with (4) ½" Grade 5 bolts and flat washers spaced 54.5" apart lengthwise and 32.5" apart widthwise on-center. Pre-test retrofit: a 12" long and 2" wide L-shaped bracket made of 1/8" carbon steel was added between the compressor stack and top of the controller. The bracket was attached to the controlled and skid frame with two 5/16" Grade 5 bolts, washers, and serrated nuts, one at each end of the bracket.

# DATE: 01/23/2024





#### UUT35 Overall View and Pre-Test Retrofit

# UUT36 - DCL Test Report 43160-2301b



### **UNIT UNDER TEST (UUT) Summary Sheet**

#### Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: MSH20C6

Product Construction Summary: Painted carbon steel

**Options / Component Summary:** Twelve pump system. Scroll compressor assemblies (10 hp) and PBMI\_PXMI controller in NEMA 12 enclosure.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

			UUT Pr	operties					
Operating Weight	Tested	unit		Dimensions (in) Lowest Natural Frequency					
(lb)	resteu	umit	Length	Width	Height	Front-Back	Vertical		
4,590	UUT	36	90.5	35.0	89.5	14.0			
	-		Seismic Test	Parameters	1	-			
Building Code	Test Criteria	Sds (g)	z/h	lp	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)	
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53	
Unit Mounting Doco	rintion	$\sim$		/ xxx VX AVAAA					

### Unit Mounting Description:

UUT36 was rigidly base mounted to the DCL interference plate with (8) ½" Grade 5 bolts and flat washers spaced 33.3", 19.1", and 34.6" apart lengthwise and 32.5" apart widthwise on-center.



UUT36 Overall View

# UUT40 - DCL Test Report 43160-2301b



### **UNIT UNDER TEST (UUT) Summary Sheet**

Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air Gas Manifolds

Model Number: MFLD-CYL-NFPA-O2-N4

Product Construction Summary: Painted carbon steel

Options / Component Summary: NEMA 4 enclosure, regulators and valves, HMI/PLC controller.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

			operties						
ight Tested unit			Dimensions (in) Lowest Natural Frequency (H						
Testeu	unit	Length	Width	Front-Back	Side-Side	Vertical			
UUT4	40	10.0	17.5	20.5	N/A	N/A	N/A		
	1	Seismic Test	Parameters						
Test Criteria	Sds (g)	z/h	lp	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)		
CC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53		
	UUT4		Tested unit Length UUT40 10.0 Seismic Test Test Criteria Sds (g) z/h	Tested unit     Length     Width       UUT40     10.0     17.5       Seismic Test Parameters       Test Criteria     Sds (g)     z/h	Tested unit     Length     Width     Height       UUT40     10.0     17.5     20.5       Seismic Test Parameters       Test Criteria     Sds (g)     z/h     Ip     Aflx-H (g)	Tested unit     Length     Width     Height     Front-Back       UUT40     10.0     17.5     20.5     N/A       Seismic Test Parameters       Test Criteria     Sds (g)     z/h     Ip     Aflx-H (g)     Arig-H (g)	Tested unit     Length     Width     Height     Front-Back     Side-Side       UUT40     10.0     17.5     20.5     N/A     N/A       Seismic Test Parameters       Test Criteria     Sds (g)     z/h     Ip     Aflx-H (g)     Arig-H (g)     Aflx-V (g)		

#### Unit Mounting Description:

UUT40 was rigidly wall mounted to the DCL wall fixture using a manufacturer-provided support with (4) 3/8" Grade 5 bolts, flat washers, 1¾" x1¾" x¼" carbon steel washers, and channel nuts. The bolts were spaced 10.8" apart widthwise and 18.5" apart vertically on-center. The manufacturer-provided support was a rectangular 20"x12"x0.11" carbon steel frame with a depth of 1.3". The manifold was attached to the support with (4) 5/16" Grade 5 bolts spaced 18.5" vertically, 8" widthwise on the top row, and 5" widthwise on the bottom row on-center. Retrofit: the bottom latches were moved approximately 3/16" back lengthwise from their previous position.



UUT40 Overall View and Retrofit

# UUT41 - DCL Test Report 43160-2301b



### UNIT UNDER TEST (UUT) Summary Sheet

Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air Gas Manifolds

Model Number: MFLD-CYL-NFPA-O2-N4

Product Construction Summary: Painted carbon steel

Options / Component Summary: NEMA 4 enclosure, regulators and valves, HMI/PLC controller.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

			UUT Pro	operties					
<b>Operating Weight</b>	Tested	C	Dimensions (in) Lowest Natural Frequency (Hz)						
(lb)	Tested	i unit	Length	Width	Height	Front-Back	Side-Side	Vertical	
72	υυτ	41	10.0	17.5	20.5	N/A	N/A	N/A	
	-		Seismic Test	Parameters		-			
Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)	
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53	
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	C	

#### Unit Mounting Description:

UUT41 was rigidly wall mounted to the DCL wall fixture using a manufacturer-provided support with (4) 3/8'' Grade 5 bolts, flat washers,  $1\frac{3}{4}'' \times 1\frac{3}{4}'' \times \frac{3}{4}''$  carbon steel washers, and channel nuts. The bolts were spaced 10.8'' apart widthwise and 18.5'' apart vertically on-center. The manufacturer-provided support was a rectangular  $20'' \times 12'' \times 0.11''$  carbon steel frame with a depth of 1.3''. The manifold was attached to the support with (4) 5/16'' Grade 5 bolts spaced 18.5'' vertically, 8'' widthwise on the top row, and 5'' widthwise on the bottom row on-center. Retrofit: the bottom latches were moved approximately 3/16'' back lengthwise from their previous position.



UUT41 Overall View and Retrofit

# UUT42 - DCL Test Report 43160-2301b

## **UNIT UNDER TEST (UUT) Summary Sheet**



#### Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: IOPDXX04

Product Construction Summary: Painted Carbon Steel

Options / Component Summary: Duplex system. 120 gallon vertical tank, dryers, BASIC\_PSM controller in NEMA 12 enclosure, (1) 3 HP compressor in the bottom position and (1) 5 HP compressor in the top position.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

			UUT Pro	operties					
Operating Weight	ting Weight Tested unit		C	imensions (in	ı)	Lowest Natural Frequency (Hz)			
(lb)	Tester	i unit	Length	Width	Height	Front-Back	Side-Side	Vertical	
1,720	דטט	42	54.0	D 71.0	81.0	5.0	7.0	20.5	
		(O)	Seismic Test	Parameters	11.				
Building Code	Test Criteria	Sds (g)	z/h	lp 💦	Aftx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)	
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53	

\* The width of UUT42 was obtained by adding the width of each skid together along with the tested 4" gap between the skids. OSP-0380

### Unit Mounting Description:

UUT42 consisted of a compressor skid and a tank/dryer/controller skid. The compressor skid was flexibly base mounted to the DCL interface plate with (4) ½" Grade 5 bolts, flat washers, and 4"x4"x1" Airloc 32 neoprene pads. The tank/dryer/controller skid was rigidly base mounted to the DCL interface plate with (4) ½" Grade 5 bolts and (8) flat washers. The bolts on each skid were spaced 31" apart widthwise and 49" apart lengthwise measured on-center. Both skids were tested with a gap of 4".



**UUT42 Overall View** 

# UUT43a,b - DCL Test Report 43160-2301b

### UNIT UNDER TEST (UUT) Summary Sheet



#### Manufacturer: Powerex

Product Line: Medical Air and Laboratory Air

Model Number: IOPDXX06

Product Construction Summary: Painted Carbon Steel

**Options / Component Summary:** Duplex system. 240 gallon vertical tank, dryers, PBMI\_PXMI controller in NEMA 12 enclosure, (1) 7.5 HP compressor in the bottom position and (1) 15 HP compressor in the top position. Both compressors were mounted to the compressor skid with spring isolators.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

			UUT Pro	operties					
Operating Weight	To she down it		D	imensions (in	)	Lowest Natural Frequency (Hz)			
(lb)	Tested	Tested unit		Width	Height	Front-Back	Side-Side	Vertical	
1,270	UUT4	13a	51.5	34.5	71.0	3.0	5.0	8.0	
1,290	UUT4	UUT43b		34.5	96.0	4.5	6.0	30.0	
		S.	Seismic Test	Parameters					
Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)	
CBC 2022	ICC-ES AC156	2.00	01.0P_(	3 01.5	3.20	2.40	1.33	0.53	
				0000					

#### Unit Mounting Description:

UUT43a,b consisted of a compressor skid referred to as UUT43a and a tank/dryer/controller skid referred to as UUT43b. UUT43a was flexibly base mounted to the DCL interface plate with (4) ½" Grade 5 bolts, flat washers, and 4"x4"x1" Airloc 32 neoprene pads. UUT43b was rigidy base mounted to the DCL interface plate with (4) ½" Grade 5 bolts and (8) flat washers. The bolts on UUT43a were spaced 31" apart widthwise and 49" apart lengthwise measured on-center. The bolts on UUT43b were spaced 31" apart widthwise and 58" apart lengthwise measured on-center. The units were tested with a gap of 4" between the skids./



UUT43a,b Overall View