

ELECTRIC DUCT HEATER

MARK	MANUFACTURER	TYPE	WIDTH (IN.)	LENGTH (IN.)	AIRFLOW CFM	HEATING SECTION		ELECTRICAL			UNIT WT (LBS)	NOTES
						ELECTRIC HEAT (KW)	STAGES	VOLT/PHASE	FLA	WIRE SIZE		
EDH-1	INDEECO	QUZ	14	14	900	27.0	3	460/3	40.0	8	???	(1) (2)

- NOTES:
(1) HEATER SHALL BE INTERLOCKED WITH SUPPLY FAN, SF-1, TO ENERGIZE ONLY WITH FAN IN OPERATION.
(2) PROVIDE HEATER WITH PROPORTIONAL ELECTRONIC SCR CONTROLLER, AND DUCT MOUNTED THERMOSTAT SET AT 65 DEG F. (ADJ.)
(3) PROVIDE AUTOMATIC AND MANUAL REST THERMAL CUTOUTS, DIFFERENTIAL PRESSURE AIRFLOW SWITCH, MAGNETIC CONTACTORS, TRANSFORMER, AND DISCONNECT SWITCH.

SUPPLY FAN SCHEDULE

MARK	MANUFACTURER	MODEL	CFM	E.S.P. (in WC)	MOTOR HP	RPM	VOLT/PHASE	DRIVE	AREA SERVED	WEIGHT(LBS.)	TYPE	NOTES
SF-1	GREENHECK	BSQ-100-3	900	0.8	1/3	1697	115/1	BELT	PROCESS OPS CENTER FUME HOOD	146	IN-LINE	(1) THRU (7)

- NOTES:
(1) PROVIDE HIGH EFFICIENCY MOTOR WITH THERMAL OVERLOAD.
(2) PROVIDE AUTOMATIC BELT TENSIONER.
(3) PROVIDE HANGING VIBRATION ISOLATOR (NEOPRENE) KIT .
(4) PROVIDE DISCONNECT SWITCH.
(5) PROVIDE SLOPED FILTER BOX WITH 2 IN. ALUMINUM FILTERS.
(6) PROVIDE INSULATED FAN HOUSING AND MOTOR COVER.
(7) PROVIDE ELECTRICAL INTERLOCK WITH EF-1 FOR SIMULTANEOUS OPERATION.

LOUVER SCHEDULE

MARK	MANUFACTURER	MODEL	AIRFLOW (CFM)	MAX. A.P.D. (inWC)	SIZE (W"xH")	MIN. FREE AREA (SQ. FT.)	VELOCITY (FPM)	TYPE	MATERIAL	HVAC UNIT SERVED	NOTES
L-1	RUSKIN	L375D	80	0.01	12x12	0.35	229	STATIONARY DRAINABLE	GALV. STEEL	FURNACE F-1	(1) THRU (4)
L-2	RUSKIN	L375D	160	0.01	16x12	0.49	327	STATIONARY DRAINABLE	GALV. STEEL	FURNACE F-2	(1) THRU (4)
L-3	RUSKIN	L375D	60	0.01	12x12	0.35	172	STATIONARY DRAINABLE	GALV. STEEL	FURNACE F-3	(1) THRU (4)
L-4	RUSKIN	L375D	610	0.03	24x18	1.26	484	STATIONARY DRAINABLE	GALV. STEEL	EXHAUST FAN EF-2	(1) THRU (4)
L-5	RUSKIN	L375D	900	0.03	24x24	1.75	514	STATIONARY DRAINABLE	GALV. STEEL	SUPPLY FAN SF-1	(1) THRU (4)

- NOTES:
(1) PROVIDE FACTORY PRIMER PAINT. CONTRACTOR SHALL PAINT LOUVER TO MATCH COLOR OF ADJACENT WALL.
(2) PROVIDE 120V MOTORIZED DAMPER INTERLOCKED WITH UNIT LOUVER SERVES. DAMPER SHALL BE FULLY OPEN DURING OCCUPIED HOURS.
(3) PROVIDE 1/4" WIRE MESH BIRD SCREEN.
(4) PROVIDE STANDARD FRAME CONSTRUCTION.

EXHAUST FAN SCHEDULE

MARK	MANUFACTURER	MODEL	CFM	E.S.P. (in WC)	MOTOR HP	RPM	VOLT/PHASE	DRIVE	AREA SERVED	WEIGHT (LBS.)	TYPE	NOTES
EF-1	GREENHECK	BSQ-120-3	1,290	0.500	1/3	1474	115/1	BELT	PROCESS OPS CENTER FUME HOOD	117	IN-LINE	(1) THRU (7)
EF-2	GREENHECK	CSP-A700	610	0.500	350 WATTS	1100	115/1	DIRECT	SHOWER/LOCKER/TOILETS	34	IN-LINE	(3)(4)(8)

- NOTES:
(1) PROVIDE HIGH EFFICIENCY MOTOR WITH THERMAL OVERLOAD.
(2) PROVIDE AUTOMATIC BELT TENSIONER.
(3) PROVIDE HANGING VIBRATION ISOLATOR (NEOPRENE) KIT .
(4) PROVIDE DISCONNECT SWITCH.
(5) PROVIDE HI-PRO POLYESTER COATING FOR FAN AND ACCESSORIES.
(6) PROVIDE INSULATED FAN HOUSING AND MOTOR COVER.
(7) PROVIDE ELECTRICAL INTERLOCK WITH SF-1 FOR SIMULTANEOUS OPERATION.
(8) PROVIDE ELECTRICAL INTERLOCK WITH F-3 FOR SIMULTANEOUS OPERATION. FAN SHALL OPERATE DURING OCCUPIED HOURS.

AIR DISTRIBUTION SCHEDULE

MARK	MANUFACTURER	MODEL	TYPE	FACE SIZE	NECK SIZE	COLOR	FRAME	NOTES
A	TITUS	TDCA	SUPPLY	AS INDICATED	AS INDICATED	WHITE	SURFACE	(1)
B	TITUS	50F	RETURN/EXHAUST	AS INDICATED	AS INDICATED	WHITE	SURFACE	(1)
C	TITUS	300RS	SUPPLY	AS INDICATED	AS INDICATED	WHITE	WALL/DUCT	(1)
D	TITUS	50F	RETURN	AS INDICATED	AS INDICATED	WHITE	WALL/DUCT	(1)

- NOTES:
(1) OPPOSED BLADE DAMPER

ZONE IDENTIFICATION					IMC 2009 - NOTE (2)									
HVAC UNIT DESIGNATION	ROOM NUMBER	ROOM NAME	OCCUPANCY CLASSIFICATION	AREA (SF)	TABLE 403.3 PEOPLE OUTDOOR AIR RATE (CFM/PERSON)	TABLE 403.3 AREA OUTDOOR AIR RATE (CFM/SF)	TABLE 103.3 OCCUPANT DENSITY (#/1000 SF)	BREATHING ZONE OUTDOOR AIRFLOW Vbz (CFM)	TABLE 403.3.1.2 ZONE AIR DISTRIBUTION	ZONE OUTDOOR AIRFLOW	TABLE 403.3.2.3.2 SYSTEM VENTILATION EFFICIENCY Ev	OUTDOOR AIR INTAKE FLOW	ZONE PRIMARY AIRFLOW FRACTION	PRIMARY OUTDOOR AIR FRACTION
										Voz (CFM) =Vbz/Ez		Vot (CFM) =Voz/Ev	Vpz (CFM) (NOTE 1)	Zp=Voz/Vpz
F-1	N/A	OFFICE/WORKROOM/ENTRY	OFFICE SPACE	547	5	0.06	5	46.50	0.8	58.12	1	58	1300	0.04
F-2	N/A	PROCESS OPS CENTER	SCIENCE LABORATORIES	550	10	0.18	25	236.50	0.8	295.63	0.9	328	1800	0.16
F-3	N/A	STAFF WORK/SHOWER/TOILETS	OFFICE SPACE	662	5	0.06	5	56.27	0.8	70.34	1	70	1600	0.04
DSFC-1	N/A	SERVER ROOM	OFFICE SPACE	60	5	0.06	5	5.10	0.8	6.38	1	6	635	0.01
TOTALS				1,819				344		430		463	5,335	

- NOTES:
(1) THIS VALUE IS THE SUPPLY AIR (CFM) INDICATED BY THE LOAD CALCULATION PROGRAM.
(2) CALCULATIONS ARE PER ASHRAE 62.1-2007 AND PER 2009 IMC 403.3.

DUCTLESS SPLIT SYSTEM SCHEDULE

SYSTEM	DSFC-1/DSCU-1
GENERAL DATA	
ELEVATION (FT)	5420
AREA SERVED	IT ROOM
MOUNTING TYPE	WALL-MOUNTED
SYSTEM TYPE	COOLING ONLY
REFRIGERANT	R-410A
SEER	13.5
INDOOR UNIT DATA	
MARK	DSFC-1
MANUFACTURER	MITSUBISHI
MODEL	PKA-A24FA
COOLING AIRFLOW (MAX, WET COIL)	635
FAN DRIVE TYPE	DIRECT
TOTAL COOLING CAPACITY (MBH)	24
SENSIBLE COOLING CAPACITY (MBH)	18.7
ENT. AIR TEMP (deg F DB/WB)	80/67
INDOOR UNIT VOLTAGE/PHASE	
INDOOR UNIT MCA	1
INDOOR UNIT FAN MOTOR (AMPS)	0.43
INDOOR UNIT WEIGHT (LBS)	
53	
CONDENSING UNIT DATA	
MARK	DSCU-1
MANUFACTURER	MITSUBISHI
MODEL	PUY-A24NHA
FAN MOTOR (AMPS)	0.75
OUTDOOR AIR TEMP @ MAX. CAPACITY	95
OUTDOOR UNIT VOLT/PHASE	
OUTDOOR UNIT MCA	208-230/1
BREAKER SIZE (AMPS)	18
WEIGHT (LBS)	
163	
(1)(2)(3)(4)	

- NOTES:
(1) MOUNT UNIT PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
PROVIDE WIRED THERMOSTAT.
(2) PROVIDE CONDENSATE PUMP. ROUTE CONDENSATE TUBING TO DISCHARGE PER PLUMBING DRAWINGS.
(3) SECURELY BOLT CONDENSING UNIT TO CONCRETE PAD SHOWN ON PLAN AND ENSURE UNIT IS INSTALLED LEVEL.
(4) PROVIDE WIND BAFFLE FOR CONDENSING UNIT TO ALLOW FOR LOW AMBIENT OPERATION.

SPLIT SYSTEM SCHEDULE

INDOOR UNIT MARK	F-1	F-2	F-3
GENERAL DATA			
ELEVATION (FT)	5,420	5,420	5,420
TYPE	VERT. COND. FURNACE	VERT. COND. FURNACE	VERT. COND. FURNACE
CARRIER MODEL NO.	59MN7A60V14--14	59MN7A60V21--20	59MN7A60V21--20
SUPPLY FAN DATA			
AIRFLOW ACFM	1,400	1,900	1,700
OUTSIDE AIR ACFM	86	160	410
EXT. STATIC PRESS. (in WC)	0.6	0.6	0.6
FAN MOTOR (HP)	1/2		1
DRIVE TYPE	DIRECT	DIRECT	DIRECT
ELECTRICAL VOLTS / PHASE	120 / 1	120 / 1	120 / 1
MOTOR F.L. AMPS	7.7	12.8	12.8
COOLING COIL DATA			
NOMINAL COOLING CAPACITY, TONS	2 1/2 TON	3 TON	3 TON
REFRIGERANT	R-410A	R-410A	R-410A
CARRIER MODEL	CNPVP3017ATA	CNPVP3621ATA	CNPVP3621ATA
GAS HEAT DATA			
NATURAL GAS INPUT (MBH)	60	60	60
HEATING OUTPUT AT ALTITUDE (MBH)	33.4	33.8	33.8
COMBUSTION EFFICIENCY	97.4%	98.5%	98.5%
FILTER SECTION			
TYPE	EXTERNAL FILTER RACK	EXTERNAL FILTER RACK	EXTERNAL FILTER RACK
UNIT DATA			
WIDTH, IN.	17.5	21	21
DEPTH, IN.	29.5	29.5	29.5
HEIGHT (INCL. COOLING COIL), IN.	52	52	52
WEIGHT (INCL. COOLING COIL), LBS.	204	210	210
NOTES:			
(1) (2) (3) (4) (7)	(1) (2) (3) (4) (7)	(1) (2) (3) (4) (7)	(1) (2) (3) (4) (7)
CONDENSING UNIT MARK	CU-1	CU-2	CU-3
GENERAL DATA			
COMPRESS. TYPE/REFRIG.	AIR-COOLED	AIR-COOLED	AIR-COOLED
CARRIER MODEL NO.	24ACB430A0030	24ACB436A0030	24ACB436A0030
COOLING CAPACITY, NOMINAL	2 1/2 TON	3 TON	3 TON
AMBIENT AIR TEMPERATURE, °F	95	95	95
SEER	15.0	14.5	14.5
ELECTRICAL DATA			
VOLTS / PHASE	208 / 1	208 / 1	208 / 1
RLA / LRA (COMPRESSOR)	14.1 / 73	16.7 / 79	16.7 / 79
MCA / MAX FUSE SIZE	18.1 / 30	22 / 35	22 / 35
UNIT DATA			
WIDTH, IN.	35	35	35
DEPTH, IN.	35	35	35
HEIGHT, IN.	29	36	36
WEIGHT, LBS.	177	225	225
NOTES:			
(5) (6) (7)	(5) (6) (7)	(5) (6) (7)	(5) (6) (7)

- NOTES:
(1) PROVIDE CONCENTRIC TERMINATION KIT.
(2) PROVIDE CONDENSATE FREEZE PROTECTION KIT.
(3) PROVIDE CONDENSATE NEUTRALIZER KIT.
(4) PROVIDE BALL BEARING FAN MOTOR, COMP. START ASSIST CAPACITOR & RELAY, CRANKCASE HEATER, EVAP. FREEZE T-STAT, HARD SHUT-OFF TXV, MOTOR MASTER CONTROL OR LOW-AMBIENT PRESS. SWITCH, SUPPORT FEET, AND WINTER START CONTROL FOR LOW AMBIENT COOLING.
(5) PROVIDE 6" CONCRETE PAD. ATTACH CONDENSING UNITS TO CONCRETE WITH ANCHOR BOLTS, AT THE LOCATIONS PROVIDED IN THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
(6) EQUIPMENT MANUFACTURER SHALL SIZE REFRIGERANT PIPING. ALLOW FOR 20 FT VERTICAL RUN.
(7) ROUTE ALL CONDENSATE PIPING TO ADJACENT FLOOR DRAIN. REFER TO PLUMBING PLANS.

REVISIONS		
No. 1	DATE 06/28/2012	DESCRIPTION ISSUED FOR BUILDING PERMIT SUBMITTAL TO PPRBD (OPERATIONS BUILDING)
2	08/15/2012	ISSUED FOR CONSTRUCTION PER PPRBD PERMIT #35220 (OPERATIONS BLDG)

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MECHANICAL SCHEDULES
HAROLD D. THOMPSON REGIONAL WATER RECLAMATION FACILITY
LOWER FOUNTAIN METROPOLITAN SEWAGE DISPOSAL DISTRICT

DRAWN JE
DESIGNED MK
CHECKED CF
DATE MAY 2012
PROJECT NO. 20166.410
GMS FILE NO. 2599

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MOP-3
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