



# *Now In Production*

*AUGUST 2009*

## **SPARTANBURG UROLOGY OPERATING ROOMS, SPARTANBURG, SC**

One (1) custom new 84 ton Dual Path System with 100% OA economizer, DX cooling with air cooled condensing section, gas heat, scroll compressors, R-410A refrigerant, VFDs and DDC controls. Unit is designed to conditioned the air down to 41.5 / 41 deg F leaving air temperature.

**Representative : Carolina Cooling; 801 Pressley Road, Suite 100 B, Charlotte, NC 28217**  
**Bob Alexy, Brian Alexy ; P 704-521-2665; F 704-521-4444**



The unit is a top return, top discharge Dual Path VAV system. The fresh air is conditioned with three (3) scroll compressors (lead is a modulating digital scroll) down to 41 deg F dew point. The return air is conditioned thru a separate path with two scroll compressors down to 41 deg F dew point. Each path is provided with an independent sub-cooling reheat coil and a combined hot gas reheat coil to bring the supply air to 60 deg DB and 50 deg WB.



An air cooled condensing section with a total of five (5) independently circuited scroll compressors conditions 14,330 cfm of air down to 41 deg dew point with no need for a defrost cycle. Some other features are plenum supply air blower, premium efficiency motors, VFDS and modulating tubular Heatco burners with stainless steel heat exchangers.





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Other features include painted aluminum exterior panels , extruded aluminum door frames, hinged access doors with single handle and multiple latches, state-of-the-art control panel, provision for UV lights, service lights in all accessible sections, and photoelectric smoke detectors.



Per the customer's request all access doors are provided on one side of the unit. The unit is completely tested and shipped to the job site for rigging and start up.



**ENGINEERING SPECIFICATIONS**

**JOB NAME** SPARTANBURG UROLOGY OR SUITE (DUAL PATH)  
**LOCATION** SPARTANBURG, SC  
**DATE PREPARED** Revised: 03/19/09  
**SEASONS-4 REFERENCE #** A48301  
**UNIT MODEL #** 3HJK43-0845-TN8.0-14SE  
**UNIT DESIGNATION** AC-1  
**SYSTEM VOLTAGE** 460/3/60

**DESIGN DATA**

TOTAL COOLING CAPACITY (BTUH)	1,017,042*
SENSIBLE CAPACITY (BTUH)	613,335*
TOTAL AIRFLOW (CFM)	14,330
OUTDOOR AIR (CFM)	5,330 - 14,330
NET TOTAL COOLING CAPACITY (BTUH)	840,148*
NET SENSIBLE CAPACITY (BTUH)	436,441*
ESTIMATED REFRIGERANT CHARGE (LBS. R410A)	431

\* DESIGN DATA CAPACITIES INCLUDE EFFECTS OF SUBCOOL COIL REHEAT

**COMPRESSOR SECTION**

COMPRESSOR:

TYPE	COPELAND SCROLL
NUMBER	5
STAGES OF CAPACITY	5

**AIR COOLED CONDENSER SECTION**

CONDENSER COIL:

COIL FACE AREA/ROWS/FPI	95.0/6/10
DESIGN AMBIENT TEMPERATURE (FDB):	100.0

CONDENSER FANS:

TYPE	PROPELLER
DIA/RPM	30/1,140
QTY/HP	6/1.5

**PRE-COOL COIL SECTION**

FACE AREA (SQ-FT)	13.2
ROWS/FPI	3/12
COIL CIRCUITS (NUMBER)	1
TOTAL CAPACITY (BTUH)	275,740
SENSIBLE CAPACITY (BTUH)	178,506
ENTERING AIR TEMP (FDB/FWB)	100.0/78.0
COIL LEAVING AIR TEMP (FDB/FWB)	69.8/64.6
CONDITIONED AIR (CFM)	5,330

**DEHUMIDIFICATION COIL SECTION**

FACE AREA (SQ-FT)	13.2
ROWS/FPI	9/10
COIL CIRCUITS (NUMBER)	2
TOTAL CAPACITY (BTUH)	337,314
SENSIBLE CAPACITY (BTUH)	168,615

**ENGINEERING SPECIFICATIONS**

ENTERING AIR TEMP (FDB/FWB)	69.8/64.6
COIL LEAVING AIR TEMP (FDB/FWB)	41.0/40.8
CONDITIONED AIR (CFM)	5,330

**SUBCOOLING COIL SECTION (DEHUMIDIFICATION)**

FACE AREA (SQ-FT)	13.2
ROWS/FPI	2/10
REHEAT CAPACITY (BTUH)	74,932
ENTERING AIR TEMP (FDB/FWB)	0.0
LEAVING AIR TEMP (FDB/FWB)	53.9/47.2
CONDITIONED AIR (CFM)	5,330

**HOT GAS REHEAT COIL SECTION (COMPRESSOR 1 ONLY)**

FACE AREA (SQ-FT)	22.8
ROWS/FPI	2/10
COIL CIRCUITS (NUMBER)	1
REHEAT CAPACITY (BTUH)	126,380
ENTERING AIR TEMP (FDB/FWB)	52.0/46.2
LEAVING AIR TEMP (FDB/FWB)	60.1/49.9
CONDITIONED AIR (CFM)	14,330
AIR PRESSURE DROP	0.19

**RETURN AIR COIL SECTION**

FACE AREA (SQ-FT)	20.8
ROWS/FPI	8/10
COIL CIRCUITS (NUMBER)	2
TOTAL CAPACITY (BTUH)	403,987
SENSIBLE CAPACITY (BTUH)	266,213
ENTERING AIR TEMP (FDB/FWB)	68.5/59.0
COIL LEAVING AIR TEMP (FDB/FWB)	41.5/41.0
CONDITIONED AIR (CFM)	9,000

**SUBCOLING COIL SECTION (RETURN AIR)**

FACE AREA (SQ-FT)	20.8
ROWS/FPI	2/10
REHEAT CAPACITY (BTUH)	101,962
ENTERING AIR TEMP (FDB/FWB)	41.5/41.0
LEAVING AIR TEMP (FDB/FWB)	51.8/46.2
CONDITIONED AIR (CFM)	9,000

**SUPPLY AIR BLOWER SECTION**

TYPE	AF SWSI PLENUM
NUMBER/SIZE	1/27"
AIRFLOW (CFM)	14,330
TOTAL STATIC PRESSURE (TSP) IN WC	6.96
EXTERNAL STATIC (ESP) IN WC	2.50
DESIGN FAN SPEED (RPM)	1,857
FAN BHP (INCLUDING DRIVE LOSSES)	21.7
MOTOR HP	25.0
MOTOR DRIVE	FIXED SHEAVE

**RETURN AIR BLOWER SECTION**

TYPE	FC DWDI
NUMBER/SIZE	2/15-11"
AIRFLOW (CFM)	9,000
TOTAL STATIC PRESSURE (TSP) IN WC	2.25
EXTERNAL STATIC (ESP) IN WC	0.50

## ENGINEERING SPECIFICATIONS

DESIGN FAN SPEED (RPM)	1,005
FAN BHP (INCLUDING DRIVE LOSSES)	5.9
MOTOR HP	7.5
MOTOR DRIVE	FIXED SHEAVE

### MAIN FILTER SECTION

TYPE	2" PLEATED
NUMBER/SIZE	10/16x20, 10/16x25
TOTAL FACE AREA (SQ-FT)	50.0
FACE VELOCITY (FPM)	0

### OA FILTER SECTION

TYPE	2" PLEATED
NUMBER/SIZE	4/16x20, 4/16x25
TOTAL FACE AREA (SQ-FT)	20.0
FACE VELOCITY (FPM)	267

### RA FILTER SECTION

TYPE	2" PLEATED
NUMBER/SIZE	6/16x20, 6/16x25
TOTAL FACE AREA (SQ-FT)	30.0
FACE VELOCITY (FPM)	300

### FINAL FILTER SECTION

TYPE	12" CARTRIDGE HEPA
NUMBER/SIZE	9/24x24
TOTAL FACE AREA (SQ-FT)	36.0
FACE VELOCITY (FPM)	398

### GAS HEAT SECTION

TYPE	NATURAL GAS; TUBULAR DUCT FURNACE
INPUT CAPACITY (BTUH)	800,000
OUTPUT CAPACITY (BTUH)	640,000
CONDITIONED AIR (CFM)	14,330
CONDITIONED AIR TR (F)	41
STAGING	MODULATING
GAS CONNECTION SIZE (MPT)	1-1/4"
MIN GAS PRESSURE (IN-WC)	7"
MAX GAS PRESSURE (IN-WC)	14"

<b>UNIT WEIGHT (LBS)</b>	16,150
<b>CURB WEIGHT (LBS)</b>	850

**ENGINEERING SPECIFICATIONS**

**ELECTRICAL DATA**

**JOB NAME** SPARTANBURG UROLOGY OR SUITE (DUAL PATH)

**LOCATION** SPARTANBURG, SC

**DATE PREPARED** Revised: 03/19/09

**SEASONS-4 REF NUMBER** A48301 **UNIT MODEL** 3HJK43-0845-TN8.0-14SE

**UNIT DESIGNATION** AC-1

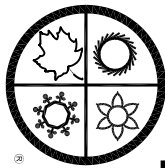
**SYSTEM VOLTAGE** 460 **CONTROL VOLTAGE** 120 **EXT. VOLTAGE** 24

<u>ITEM</u>	<u>QTY</u>	<u>HP</u>	<u>FLA</u>	<u>LRA</u>	<u>KW</u>	<u>TYPE</u>
COMP 3 (PC)	1	***	33.9	225.0	19.5	ZP235KCE
COMP 1 (DEH)	1	***	25.7	150.0	12.3	ZPD154KCE
COMP 2 (DEH)	1	***	25.7	150.0	12.3	ZP154KCE
COMP 4 & 5 (RA)	2	***	30.0	173.0	14.8	ZP182KCE
COND FAN(1)	6	1.5	2.7	16.2	1.4	
SA FAN	1	25.0	30.0	190.3	17.2	Bald
RA FAN	1	7.5	9.6	61.0	4.8	Bald
CONTROL CIRCUIT			2.2			
TOTALS (COOL)	13	***	203.3		104.2	
TOTALS (HEAT)	2	32.5	41.8		22.0	

M.C.A.  (MINIMUM CIRCUIT AMPACITY)

M.O.P.  (MAXIMUM OVERLOAD PROTECTION)

S.C.C.R.  (SHORT CIRCUIT CURRENT RATING)

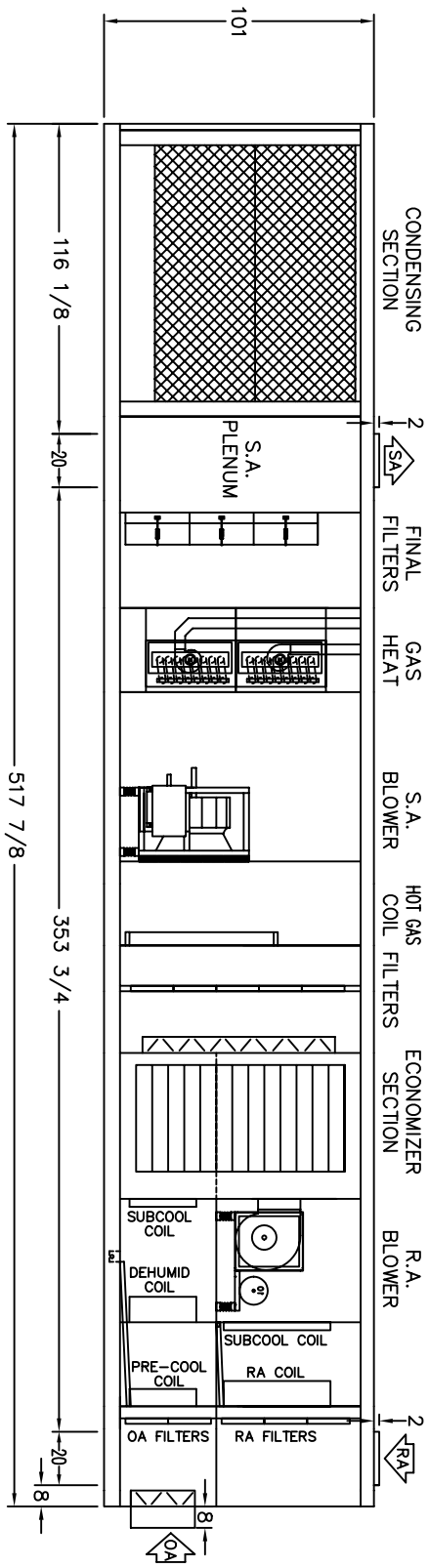
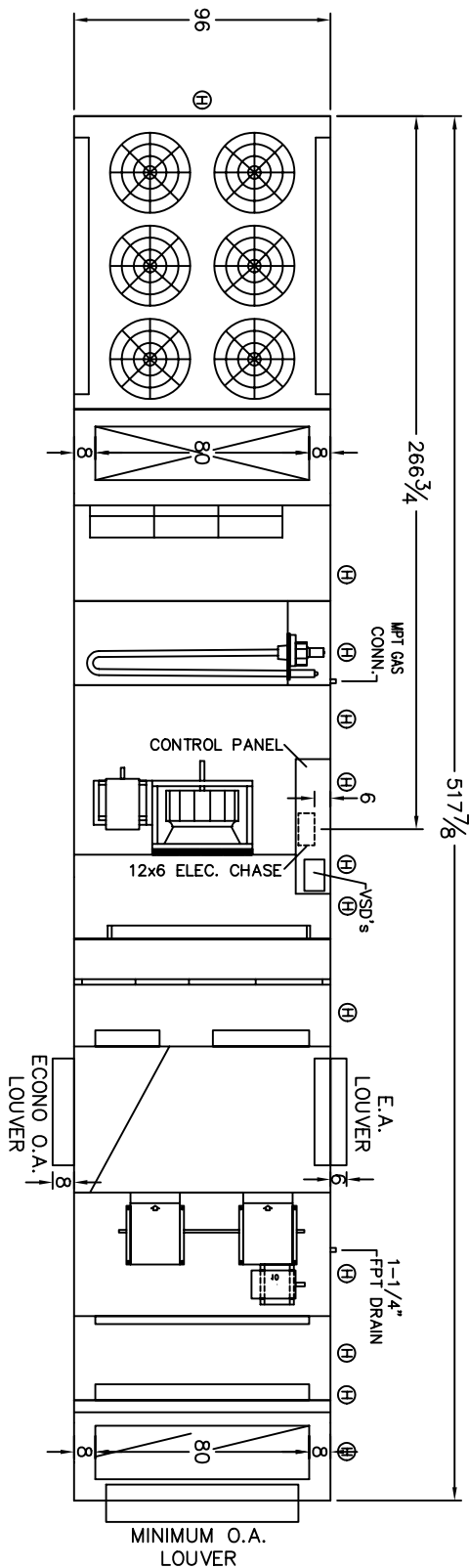


SEASONS 4

ENGINEERING AND MANUFACTURING HVAC EQUIPMENT SINCE 1971

# DIMENSIONAL DATA

SPARTANBURG UROLOGY  
 SPARTANBURG, SC  
 AC-1



- Ⓜ HINGED ACCESS DOOR
- Ⓝ SCREW-ON ACCESS DOOR
- Ⓛ LIFT-OFF ACCESS DOOR

NOTE: O.A./E.A. LOUVERS, FURNACE VENT CAPS, ETC. MAY REQUIRE FIELD INSTALLATION

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