 <b>GOODKEY, WEEDMARK &amp; ASSOCIATES LIMITED</b> Consulting Engineers 1688 Woodward Dr., Ottawa, ON Canada K2C 3R8 Tel.: 613-727-5111, Fax: 613-727-5115, info@gwal.com	
REVIEWED <input type="checkbox"/> REVIEWED AS NOTED <input checked="" type="checkbox"/>	REVISE & RESUBMIT <input type="checkbox"/> REJECTED <input type="checkbox"/>
For general conformance only. Contractor remains responsible for equipment & system details, performance, accuracy, dimensions and coordination.	Date: <i>July 8<sup>th</sup> 2019</i>
	GWA #: <i>2019-148</i>
	SD #: <i>SM-01</i>
	By: <i>Fikri</i>

*1 elev: INT*

*NOTE:- COORDINATE UNIT SUPPLY & DISCHARGE DUCT WITH TRUSS LOCATIONS.*

*- ROOF CURBS TO BE SEISMIC & REVIEWED BY SEISMIC ENGINEER AS PER SPECIFICATION CONTRACTOR TO PROVIDE THIS.*

# SUBMITTAL

Job: Meridian Community Centre Rebuild

Spec Section No:

Submittal No: 0

Revision No: 0

Sent Date: June 17, 2019


Spec Section Title: Roof Top Unit

Submittal Title: Roof Top Unit

Contractor:

Contractor's Stamp

Optimum Mechanical  
Supplier: Carrier ✓

Project Name Meridian Community Centre Rel		 OPTIMUM Mechanical Solutions Industry Leaders 30 Bentley Avenue, Downsview, Ontario M3B 1T9 PH: 416-228-7000 FAX: 416-228-7110
<input type="checkbox"/> APPROVED	<input type="checkbox"/> REJECTED	
<input type="checkbox"/> REVISE	<input checked="" type="checkbox"/> REVIEWED	
BY Ndewar	DATE 6/17/2019	
SUBMITTAL# 0	SPEC 0	

Reviewed by: FARAH BANO  
TAL-LO BUILDING INNOVATIONS LTD.  
JUNE 17, 2018 @ 4:05 PM.

Distribution: Hobin ; GWAL ; CLIENT ; INSURANCE ;  
TRUSS SUPPLIER (NOVA TRUSS) ;

Architect: ELECTRICAL SUPPLIER (LAMARCHE), Architect's Stamp

Engineer:

Engineer's Stamp



turn to the experts™



constant | excellence  
Carrier Enterprise Canada

## SUBMITTAL

Meridian Fire Restoration RTU-1  
Project

Optimum Mechanical  
Contractor

Goodkey Weedmark  
Mechanical Engineer

June 14, 2019

CARRIER ENTERPRISE CANADA  
1155 Lola Street  
OTTAWA, ONTARIO  
K1K 4C1

PREPARED BY: Michael Hayman  
613-505-4622

### FOR APPROVAL

Equipment will not be ordered from factory until one set of approved drawings are returned to Carrier



**\*\* Curb to be made seismic by installing contractor \*\***

\* US PATENTS 5188333, 5255887  
CANADIAN PATENT 2073900  
ADDITIONAL PATENTS PENDING

**\*CLIPLOCK 1000 ROOF CURB TO SUIT**

**Carrier**

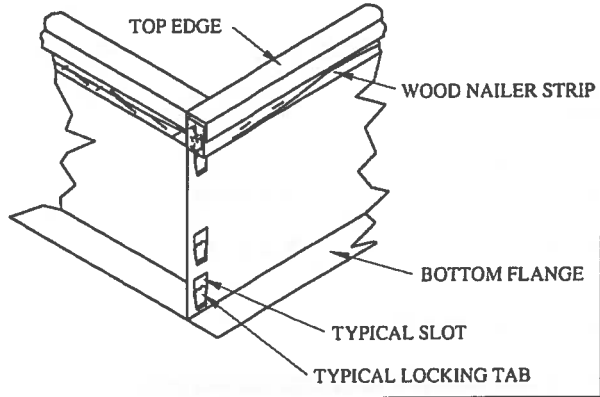
48/50TC08-014, 48/50HC07-12

**FEATURES:**

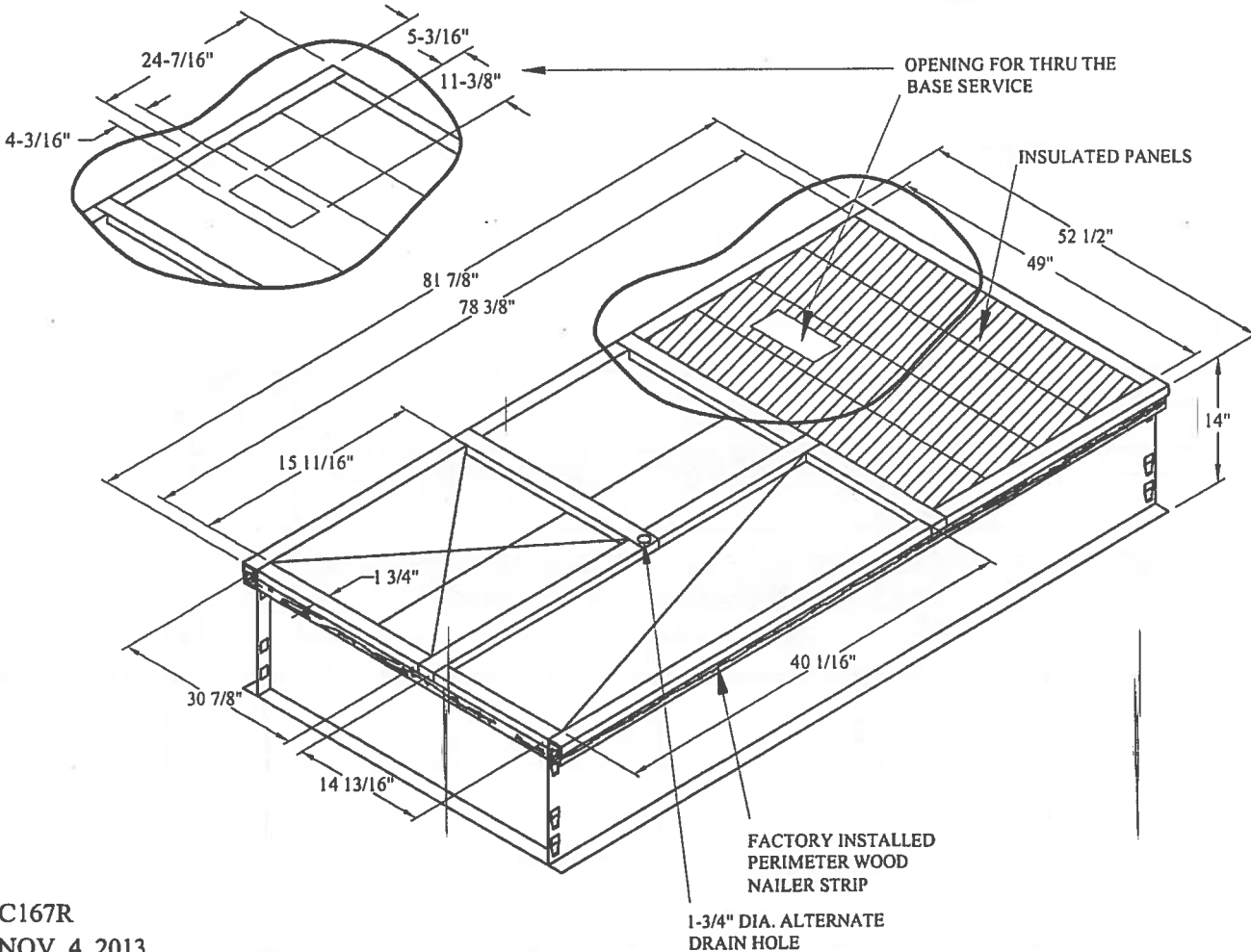
- HEAVY GAUGE GALVANIZED STEEL CONSTRUCTION
- 2" x 3" WOOD PERIMETER NAILER
- PATENTED CLIPLOCK DESIGN FOR EASE OF ASSEMBLY
- NEOPRENE GASKET

SPINNAKER PART #	HEIGHT (inch)	HEIGHT (mm)	CARRIER PART #
<del>C167R</del>	14	355.6	<del>CRRFCURB003A01-S</del>
<del>C167R-18</del>	18	457.2	<del>CRRFCURB003A0118-S</del>
C167R-24	24	609.6	CRRFCURB004A01-S

**CLIPLOCK CORNER DETAIL**



NOTE: SEE CLIPLOCK 1000 INSTALLATION INSTRUCTIONS FOR COMPLETE ASSEMBLY AND INSTALLATION PROCEDURES AND REQUIREMENTS.



C167R  
NOV. 4, 2013

# Unit Report For Meridian Retirement Fire Restoration RTU-1

Project: 48TC  
Prepared By:

06/14/2019  
04:28PM

**Unit Parameters**

Unit Model: 48TCFD14A3A5-6B0G0 ✓  
 Unit Size: 14 (12.5 Tons) ✓  
 Volts-Phase-Hertz: 208-3-60 ✓  
 Heating Type: Gas ✓  
 Duct Cfg: Vertical Supply / Vertical Return ✓  
 High Heat  
 Round Tube Plate Fin Coils

**Dimensions (ft. in.) & Weight (lb.) \*\*\***

Unit Length: 7' 4.125"  
 Unit Width: 4' 11.5"  
 Unit Height: 4' 1.375"

\*\*\* Total Operating Weight: 1556 lb

\*\*\* Weights and Dimensions are approximate. Weight does not include unit packaging. Approximate dimensions are provided primarily for shipping purposes. For exact dimensions and weights, refer to appropriate product data catalog.

← TBIL to  
Provide to  
Truss supplier

**Lines and Filters**

Gas Line Size: 3/4  
 Condensate Drain Line Size: 3/4  
 Return Air Filter Type: Throwaway  
 Return Air Filter Quantity: 4  
 Return Air Filter Size: 20 x 20 x 2

**Unit Configuration**

High Static Option (Belt Drive) ✓  
 Al/Cu - Al/Cu  
 Electromechanical Controls w/W7220 Econo Controller ✓  
 Temperature Economizer w/ Barometric Relief  
 Standard Packaging  
 2-Speed indoor fan motor controlled by VFD

**Warranty Information**

5-Year parts  
 5-Year compressor parts(std.)  
 10-Year heat exchanger - Aluminized(std.)

**Ordering Information**

Part Number	Description	Quantity
48TCFD14A3A5-6B0G0	Rooftop Unit	1 ✓
	Base Unit	
	High Static Option (Belt Drive) c/w 2 Speed Fan Controller (VFD)	
	Low leak Temp Econo X with baro relief, W7220 control. Meets Calif. Title 24 FDD	
<b>Accessories Shipped Loose</b>	Honeywell TH8320 Prostat and Qty.1 wall mount sensor C7189U1005	1 ✓
	Honeywell C7232B1006 Duct Mount CO2 sensor for DCV	1 ✓
	24-inch Tall Roof Curb	1 ✓



# Certified Drawing for Meridian Retirement Fire Restoration RTU-1

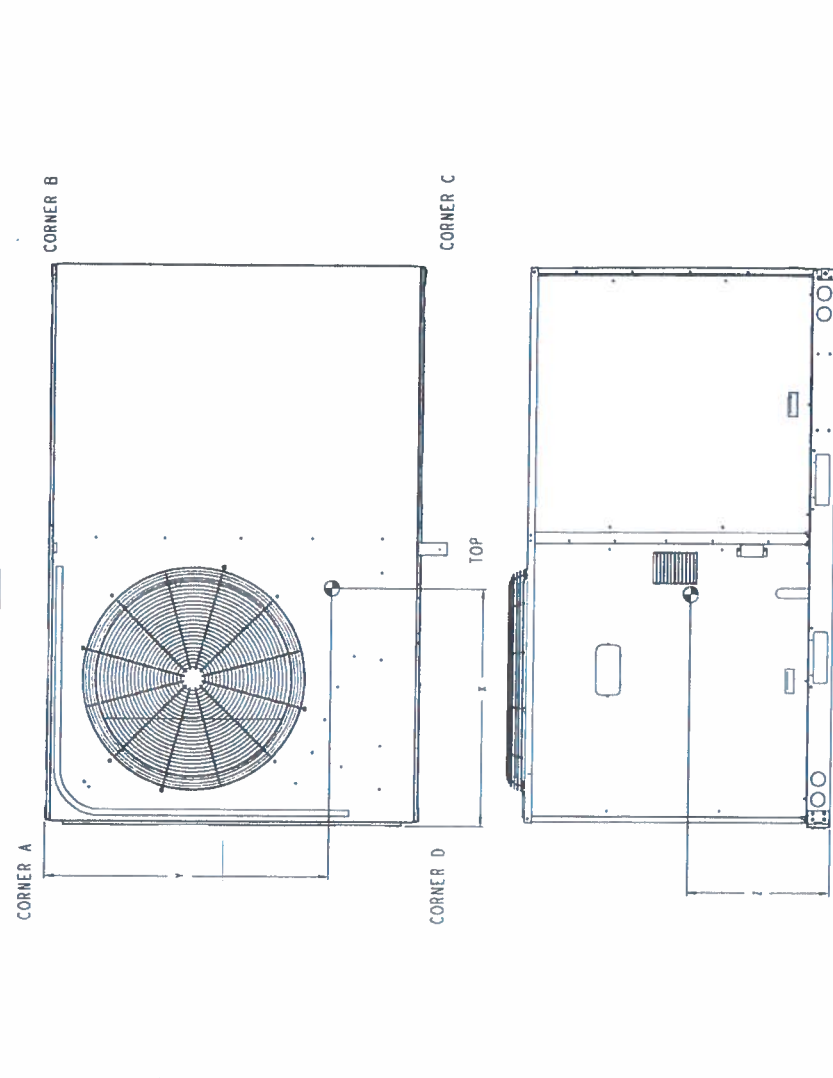
Project: 48TC  
Prepared By:

06/14/2019  
04:28PM

UNIT	STANDARD UNIT WEIGHT	CORNER A		CORNER B		CORNER C		CORNER D		C.G.
		LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	
48TC-014	1187	530	240	159	72	167	76	211	96	440
*** STANDARD UNIT WEIGHT IS WITH LOW GAS HEAT AND WITHOUT PACKAGING. FOR OTHER OPTIONS AND ACCESSORIES, REFER TO THE PRODUCT DATA CATALOG ***										

UNIT IS NOT TO BE USED IN THE FIELD OF CARTRIDGE COMPARTMENT. UNIT IS NOT TO BE USED IN THE FIELD OF CARTRIDGE COMPARTMENT. UNIT IS NOT TO BE USED IN THE FIELD OF CARTRIDGE COMPARTMENT. UNIT IS NOT TO BE USED IN THE FIELD OF CARTRIDGE COMPARTMENT.

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UNIT	48TC-014	48TC-14 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	48TN501441
DATE	10-04-10	DATE	08-30-10
SHEET	2 OF 2	SHEET	08-30-10
REV	G	REV	G

# Performance Summary For Meridian Retirement Fire Restoration RTU-1

Project: 48TC  
Prepared By:

06/14/2019  
04:28PM

## Part Number: 48TCFD14A3A5-6B0G0

ARI EER: ..... 10.80  
IEER: ..... 12.2

### Base Unit Dimensions

Unit Length: ..... 88.1 in  
Unit Width: ..... 59.5 in  
Unit Height: ..... 49.4 in

### Operating Weight

Base Unit Weight: ..... 1167 lb  
High Heat: ..... 35 lb  
High Static Option (Belt Drive): ..... 15 lb  
Temperature Economizer w/ Barometric Relief: ..... 74 lb  
2 Speed Fan Controller (VFD): ..... 20 lb

### Accessories

24-inch Tall Roof Curb: ..... 245 lb

Total Operating Weight: ..... 1556 lb

### Unit

Unit Voltage-Phase-Hertz: ..... 208-3-60  
Air Discharge: ..... Vertical  
Fan Drive Type: ..... Belt  
Actual Airflow: ..... 5000 CFM >4200 ✓  
Site Altitude: ..... 0 ft

### Cooling Performance

Condenser Entering Air DB: ..... 95.0 F  
Evaporator Entering Air DB: ..... 77.6 F  
Evaporator Entering Air WB: ..... 65.2 F  
Entering Air Enthalpy: ..... 30.08 BTU/lb  
Evaporator Leaving Air DB: ..... 58.4 F  
Evaporator Leaving Air WB: ..... 55.8 F  
Evaporator Leaving Air Enthalpy: ..... 23.64 BTU/lb  
Gross Cooling Capacity: ..... 144.97 MBH  
Gross Sensible Capacity: ..... 103.81 MBH  
Compressor Power Input: ..... 10.20 kW  
Coil Bypass Factor: ..... 0.248

### Mixed Air

Outdoor Air Airflow: ..... 420 CFM  
Outdoor Air DB: ..... 95.0 F  
Outdoor Air WB: ..... 77.0 F  
Outdoor Air Htg. Temp.: ..... 35.0 F  
Return Air DB: ..... 76.0 F  
Return Air WB: ..... 64.0 F  
Return Air Htg. Temp.: ..... 70.0 F

### Heating Performance

Heating Airflow: ..... 5000 CFM >4200 ✓  
Entering Air Temp: ..... 67.1 F  
Leaving Air Temp: ..... 105.0 F  
Gas Heating Input Capacity: ..... 200.0 / 250.0 MBH  
Gas Heating Output Capacity: ..... 160.0 / 205.0 MBH  
Temperature Rise: ..... 38.0 F  
Thermal Efficiency (%): ..... 80.0

### Supply Fan

External Static Pressure: ..... 0.60 in wg

# Performance Summary For Meridian Retirement Fire Restoration RTU-1

Project: 48TC  
Prepared By:

06/14/2019  
04:28PM

**Options / Accessories Static Pressure**

Economizer:.....	0.32	in wg
Total Application Static (ESP + Unit Opts/Acc.):.....	0.92	in wg
Fan RPM:.....	1109	
Fan Power:.....	4.19	BHP
NOTE:.....	Selected IFM RPM Range: 1022 - 1240	

**Electrical Data**

Voltage Range:.....	187 - 253
Compressor #1 RLA:.....	19.6
Compressor #1 LRA:.....	136
Compressor #2 RLA:.....	22.4
Compressor #2 LRA:.....	149
Indoor Fan Motor Type:.....	HIGH
Indoor Fan Motor FLA:.....	13.6
Combustion Fan Motor FLA (ea):.....	0.48
Power Supply MCA:.....	68
Power Supply MOCP (Fuse or HACR):.....	80
Disconnect Size FLA:.....	71
Disconnect Size LRA:.....	405
Electrical Convenience Outlet:.....	None
Outdoor Fan [Qty / FLA (ea)]:.....	1 / 6.2

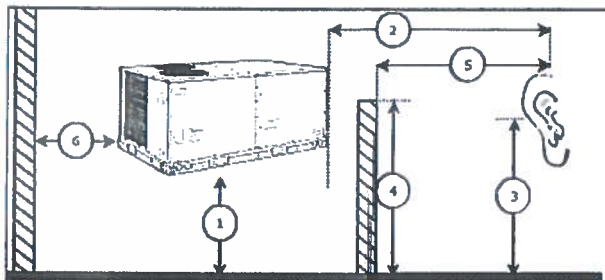
**Control Panel SCCR: 5kA RMS at Rated Symmetrical Voltage**

**Acoustics**

Sound Power Levels, db re 10E-12 Watts

	Discharge	Inlet	Outdoor
63 Hz	98.8	95.1	87.0
125 Hz	96.4	89.6	85.2
250 Hz	84.9	75.2	84.6
500 Hz	78.9	70.9	84.9
1000 Hz	75.8	69.0	82.2
2000 Hz	72.5	65.0	78.4
4000 Hz	76.0	65.5	75.3
8000 Hz	78.1	62.9	72.9
 A-Weighted	 85.6	 77.7	 87.0

**Advanced Acoustics**



**Advanced Acoustics Parameters**

1. Unit height above ground:.....	30.0	ft
2. Horizontal distance from unit to receiver:.....	50.0	ft
3. Receiver height above ground:.....	5.7	ft
4. Height of obstruction:.....	0.0	ft
5. Horizontal distance from obstruction to receiver:.....	0.0	ft

# Performance Summary For Meridian Retirement Fire Restoration RTU-1

Project: 48TC  
Prepared By:

06/14/2019  
04:28PM

6. Horizontal distance from unit to obstruction:.....0.0 ft

### Detailed Acoustics Information

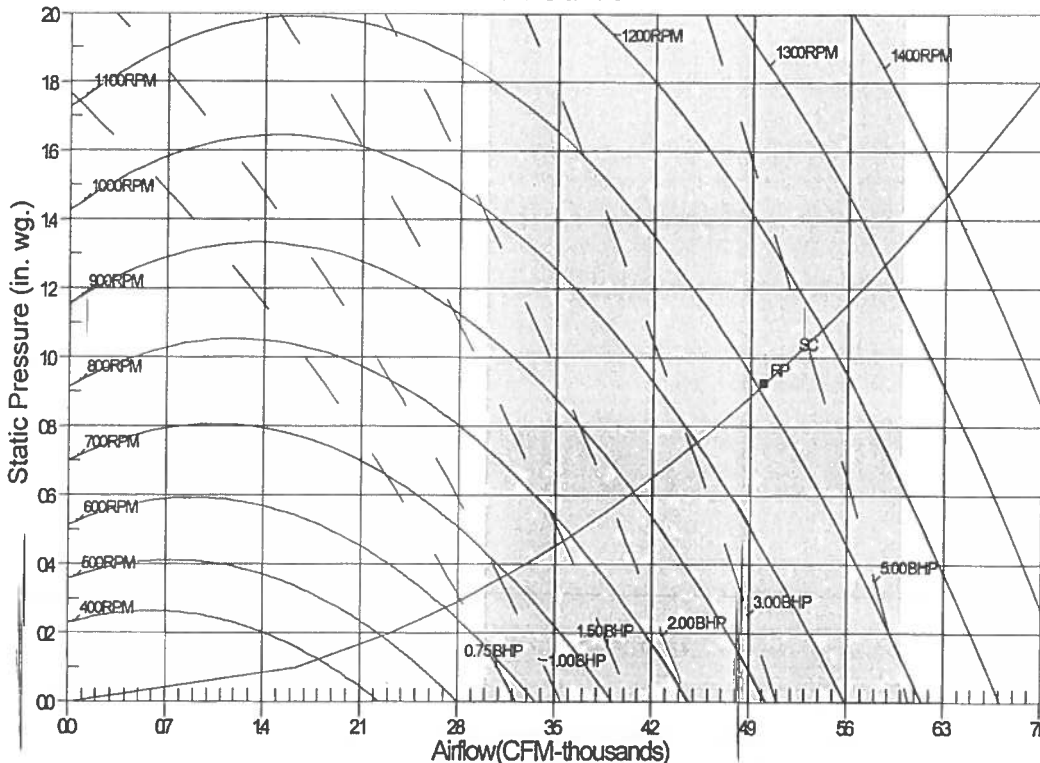
Octave Band Center Freq. Hz	63	125	250	500	1k	2k	4k	8k	Overall
A	87.0	85.2	84.6	84.9	82.2	78.4	75.3	72.9	92.4 Lw
B	60.8	69.1	76.0	81.7	82.2	79.6	76.3	71.8	87.1 LwA
C	54.6	52.8	52.2	52.5	49.8	46.0	42.9	40.5	60.0 Lp
D	28.4	36.7	43.6	49.3	49.8	47.2	43.9	39.4	54.7 LpA

### Legend

- A Sound Power Levels at Unit's Acoustic Center, Lw
- B A-Weighted Sound Power Levels at Unit's Acoustic Center, LwA
- C Sound Pressure Levels at Specific Distance from Unit, Lp
- D A-Weighted Sound Pressure Levels at Specific Distance from Unit, LpA

Calculation methods used in this program are patterned after the ASHRAE Guide; other ASHRAE Publications and the AHRI Acoustical Standards. While a very significant effort has been made to insure the technical accuracy of this program, it is assumed that the user is knowledgeable in the art of system sound estimation and is aware of the tolerances involved in real world acoustical estimation. This program makes certain assumptions as to the dominant sound sources and sound paths which may not always be appropriate to the real system being estimated. Because of this, no assurances can be offered that this software will always generate an accurate sound prediction from user supplied input data. If in doubt about the estimation of expected sound levels in a space, an Acoustical Engineer or a person with sound prediction expertise should be consulted.

### Fan Curve



RPM=1109 BHP=4.19 Maximum RPM=1400 Maximum BHP=4.70  
Note: Please contact application engineering for selections outside the shaded region.  
SC-System Curve RP-Rated Point