

**Report By:**

**National TAB  
1329 E. KEMPER ROAD  
SUITE 4210  
CINCINNATI, OH 45246**



**Report: TAB Report  
Function: Test, Adjust, & Balance  
Date: 12/19/2022**

# **PROJECT**

## **CMS E.E. Waddell High Reno (Charlotte, NC)**

730 Nations Ford Rd

Charlotte, NC 28217

### **Client**

Action Mechanical Inc.

PO Box 7325

CHARLOTTE, NC 28241

# National TAB

Project: CMS E.E. Waddell High Reno (Charlotte, NC)

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## CERTIFICATION

**PROJECT:** CMS E.E. Waddell High Reno (Charlotte, NC)

The data presented in this report is a record of system measurements and final adjustments that have been obtained in accordance with the current edition of the NEBB *Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems*. Any variances from design quantities, which exceed NEBB tolerances, are noted in the Test-Adjust-Balance Report Project Summary.

The air distribution system has been tested and balanced and final adjustments have been made in accordance with NEBB standards and the project specifications.

**NEBB TAB FIRM:** National TAB-Southeast

**REGISTRATION NO:** 3755

**CERTIFIED BY:** J. Scott Springer 23312

**DATE:** 1/6/2023

The hydronic distribution system has been tested and balanced and final adjustments have been made in accordance with NEBB standards and the project specifications.

**NEBB TAB FIRM:** National TAB-Southeast

**REGISTRATION NO:** 3086

**CERTIFIED BY:** J. Scott Springer 23312

**DATE:**

### Submitted and Certified by:

**NEBB TAB FIRM:** National TAB-Southeast

**TAB PROFESSIONAL:** J. Scott Springer

**SIGNATURE:**

**REGISTRATION NO:** 3755 (NTAB) / 23312

**CERTIFICATION EXP:** 12/31/2023





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## Testing, Adjusting, and Balancing Equipment



| Function    |                                   | Range                     | Minimum Accuracy            | Instrument Information               | Calibration Date | Date Due   |
|-------------|-----------------------------------|---------------------------|-----------------------------|--------------------------------------|------------------|------------|
| AIR         | AIR PRESSURE                      | 0 in wg to 10 in wg       | 2% +/- 0.001 in wg          | Shortridge ADM 880C - S/N M05066     | 9/28/2022        | 9/28/2023  |
|             | AIR VELOCITY INSTRUMENT           | 50 fpm to 3900 fpm        | +/- 5 % +/- 7 fpm           | Shortridge ADM 880C - S/N M05066     | 9/28/2022        | 9/28/2023  |
|             | DIRECT HOOD READING               | 100 cfm to 2000 cfm       | +/- 3 % +/- 7 cfm           | Shortridge ADM 880C - S/N M05066     | 9/28/2022        | 9/28/2023  |
| TEMPERATURE | AIR METER                         | -20 F to 240 F            | +/- .5 % 2 F                | Cooper ATKINS - SRH77A S/N 081820093 | 10/12/2022       | 10/12/2023 |
|             | AIR PROBE                         | -20 F to 240 F            | +/- .5 % 2 F                | Cooper ATKINS - PD1388 7-6 S/N 5028  | 10/12/2022       | 10/12/2023 |
|             | IMMERSION METER                   | -20 F to 240 F            | +/- .5 % 2 F                | Cooper ATKINS - SRH77A S/N 081820093 | 10/12/2022       | 10/12/2023 |
|             | IMMERSION PROBE                   | -20 F to 240 F            | +/- .5 % 2 F                | Cooper ATKINS - PD1388 7-6 S/N 1075  | 10/12/2022       | 10/12/2023 |
|             | CONTACT METER                     | -20 F to 240 F            | +/- .5 % 2 F                | Cooper ATKINS - SRH77A S/N 081820093 | 10/12/2022       | 10/12/2023 |
|             | CONTACT PROBE                     | -20 F to 240 F            | +/- .5 % 2 F                | Cooper ATKINS - PD1388 7-6 S/N 4011  | 10/12/2022       | 10/12/2023 |
| HUMIDITY    | HUMIDITY PROBE                    | 10 % RH to 90 % RH        | 3% of reading               | Cooper ATKINS - SRH77A S/N 090315046 | 10/12/2022       | 10/12/2023 |
| ELECTRICAL  | VOLTAGE MEASUREMENT               | 0 VAC to 600 VAC          | 2 % reading<br>+/- 5 digits | Dwyer CM-1 - S/N 190800099           | 10/12/2022       | 10/12/2023 |
|             | AMPERAGE MEASUREMENT              | 0 Amperers to 100 Amperes | 2 % reading<br>+/- 5 digits | Dwyer CM-1 - S/N 190800099           | 10/12/2022       | 10/12/2023 |
| ROTATION    | ROTATION MEASUREMENT              | 60 rpm to 5000 rpm        | 2 % reading<br>2 rpm        | Dwyer TAC-L - S/N S1100123           | 10/12/2022       | 10/12/2023 |
| HYDRONIC    | PRESSURE MEASUREMENT              | -30 in Hg to 200 psi      | ±2% of reading<br>+/- 1 psi | Dwyer 490W-6 - S/N 01L6NK            | 6/29/2022        | 6/29/2023  |
|             | DIFFERENTIAL PRESSURE MEASUREMENT | 0 psi - 80 psi            | ±2% of reading<br>+/- 1 psi | Dwyer 490W-6 - S/N 01L6NK            | 6/29/2022        | 6/29/2023  |

# NEBB Fundamental Formulas

## NEBB ABBREVIATIONS

|                                                               |                                                                                          |
|---------------------------------------------------------------|------------------------------------------------------------------------------------------|
| A = Area (ft <sup>2</sup> ) IP, (m <sup>2</sup> ) SI          | M = Mass (lb) IP, (kg) SI                                                                |
| ACH = Air Changes per Hour                                    | ma = Mixed Air                                                                           |
| A <sub>k</sub> = Effective Area                               | m = meter (metre)                                                                        |
| AV = Average                                                  | m <sup>3</sup> /s = Volumetric Flow: Cubic Meters Per Second                             |
| BHP = Brake Horsepower (IP) HP                                | NLA = No Load Amperage                                                                   |
| BP = Brake Power (SI) kW                                      | NPSHA = Net Positive Suction Head Available                                              |
| Btu = British Thermal Unit                                    | oa = Outside Air                                                                         |
| Btu/h = Btuh = BTUH = BTU/Hour                                | % <sub>oa</sub> = % of Outside Air                                                       |
| Φ = Center Distance (used in belt formula)                    | Ω = Ohm                                                                                  |
| °C = Degrees Celsius, °C                                      | P = Pressure                                                                             |
| C = Friction Loss Coefficient (For Duct Fittings)             | P <sub>a</sub> = Atmospheric Pressure                                                    |
| CCF = 100 Cubic Feet                                          | P <sub>ab</sub> = Absolute Pressure (Atmospheric Pressure + Gauge Pressure)              |
| CFM = Volumetric Flow: Cubic Feet Per Minute                  | Pa = Pascals, Pressure SI                                                                |
| C <sub>p</sub> = Specific Heat                                | π = 3.14                                                                                 |
| C <sub>v</sub> = Flow Constant (IP)                           | PD = Sheave Pitch Diameter                                                               |
| ρ = Density (lb/ft <sup>3</sup> ) IP, (kg/m <sup>3</sup> ) SI | P <sub>ℓ</sub> = Pressure at Pump Centerline                                             |
| d = Diameter (in.) IP, (mm) SI                                | ppm = parts per million                                                                  |
| Δ = Difference or Change (Final - Initial)                    | psi = Pounds Per Square Inch                                                             |
| d <sub>imp</sub> = Impeller Diameter                          | psia = Pounds Per Square Inch Absolute                                                   |
| E = Volts                                                     | psig = Pounds Per Square Inch Gauge                                                      |
| Eff = Efficiency                                              | P <sub>vp</sub> = Absolute Vapor Pressure                                                |
| EP = Pump Efficiency                                          | Q (flow) = Volumetric Fluid Flow Rate: (i.e. CFM, GPM, m <sup>3</sup> /s, l/s, etc.)     |
| °F = Degrees Fahrenheit, °F                                   | Q (heat) = Heat Flow Rate (BTU/Hour) IP, (W or kW) SI                                    |
| f = Friction Factor                                           | °R = °Rankin = Degrees Rankin, °R                                                        |
| FLA = Full Load Amps                                          | r = Radius (in) IP, (mm) SI                                                              |
| fpm = Feet per Minute (fpm)                                   | % <sub>ra</sub> = % of Return Air                                                        |
| ft = Foot                                                     | R = Resistance                                                                           |
| g = Acceleration of Gravity                                   | ra = Return Air                                                                          |
| gal = Gallons                                                 | rad = Radians                                                                            |
| GPM = Gallons Per Minute (GPM)                                | RH = Relative Humidity                                                                   |
| h = Enthalpy (BTU/lb dry air) IP, (kJ/kg dry air) SI          | RPM = Revolutions Per Minute                                                             |
| H = Head (in wc, ft wc, psi) IP, (Pa, kPa) SI                 | R <sub>value</sub> = Thermal Resistance                                                  |
| Hg = Mercury                                                  | s = second                                                                               |
| h <sub>ma</sub> = Mixed Air Enthalpy                          | SHR = Sensible Heat Ratio                                                                |
| h <sub>oa</sub> = Outside Air Enthalpy                        | SME = Sash Movement Effect Performance Rating (SME-XX yyy)                               |
| HP = Horsepower                                               | SP = Static Pressure                                                                     |
| hr = Hour                                                     | Sp Gr = Specific Gravity (for water use 1.00)                                            |
| h <sub>ra</sub> = Return Air Enthalpy                         | T = Temperature                                                                          |
| HT = Height (in) IP, (mm) SI                                  | Ta = Absolute Temperature (460° + T) or °R                                               |
| I = Amps                                                      | T <sub>ma</sub> = Mixed Air Temperature                                                  |
| J = Joules                                                    | T <sub>oa</sub> = Outside Air Temperature                                                |
| K = Kelvin, K                                                 | TP = Total Pressure                                                                      |
| K <sub>v</sub> = Flow constant (SI)                           | T <sub>ra</sub> = Return Air Temperature                                                 |
| kg = Kilogram                                                 | TS = Tip Speed (fpm) IP, (m/s) SI                                                        |
| kJ = Kilojoule                                                | U = Heat Transfer Coefficient                                                            |
| kPa = Kilopascal                                              | μ = viscosity, dynamic                                                                   |
| kW = Kilowatt = 1000 Watts                                    | V = Velocity                                                                             |
| l = Liter (Litre)                                             | VP = Velocity Pressure                                                                   |
| l/s = Volumetric Flow: Liters Per Second                      | W = Watt                                                                                 |
| lb = Pounds                                                   | WD = Width (in) IP, (mm) SI                                                              |
| lm = Lumens                                                   | wg = wc = water gauge = water column                                                     |
| ln = natural log                                              | WHP = Water Horsepower (IP)                                                              |
| LG = Length (in) IP, (mm) SI                                  | WP = Water Power (SI)                                                                    |
| lx = Lux                                                      | ω = Humidity Ratio (lb or grains of water/lb of dry air) (g H <sub>2</sub> O/kg dry air) |

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Project: CMS E.E. Waddell High Reno (Charlotte, NC)



Comfort. Under control.

## VAV - Single Duct

### VAV/

| Asset      |      |            |                |         |                |         |                 |          |
|------------|------|------------|----------------|---------|----------------|---------|-----------------|----------|
| Asset Name | Type | Inlet Size | Design Max CFM | Max CFM | Design Min CFM | Min CFM | Design Heat CFM | Heat CFM |
| VAV-1      | VAV  | 10"        | 1250           | 674     | 320            | 322     | 630             | 674      |

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Project: CMS E.E. Waddell High Reno (Charlotte, NC)



Comfort. Under control.

## Diffuser Supply (GRD)

### RTU-3 DIFFUSER/

| Asset      |          |      |      |            |    |        |           |             |
|------------|----------|------|------|------------|----|--------|-----------|-------------|
| Asset Name | Location | Type | Size | DESIGN CFM | AK | CFM(1) | FINAL CFM | % to design |
| 3-1        | 301      | A    | 12   | 460        |    | 239    | 239       | 52.0        |

| Asset | Notes               |
|-------|---------------------|
| 3-1   | AHU 3 at full speed |

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Project: CMS E.E. Waddell High Reno (Charlotte, NC)



Comfort. Under control.

## Diffuser Supply (GRD)

### VAV-1/301A

| Asset      |          |      |        |            |    |        |           |             |
|------------|----------|------|--------|------------|----|--------|-----------|-------------|
| Asset Name | Location | Type | Size   | DESIGN CFM | AK | CFM(1) | FINAL CFM | % to design |
| 3.1-1      | 301A     | A    | 12"12" | 400        |    | 257    | 257       | 64.3        |
| 3.1-2      | 301A     | A    | 12"12" | 400        |    | 166    | 166       | 41.5        |
| 3.1-3      | 301A     | A    | 12"12" | 400        |    | 251    | 251       | 62.8        |

| Asset | Notes               |
|-------|---------------------|
| 3-1   | AHU 3 at full speed |



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Project: CMS E.E. Waddell High Reno (Charlotte, NC)

## System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF1

AREA:

| Unit Data  |           |             |
|------------|-----------|-------------|
|            | Design    | Actual      |
| MFG        | GREENHECK | GREENHECK   |
| Model Num  | USF-12    | USF-12      |
| Serial Num | -         | 20512849    |
| Type       | -         | UTILITY SET |

| Motor Data       |        |        |
|------------------|--------|--------|
|                  | Design | Actual |
| Motor MFG        | -      | WEG    |
| Frame            | -      | 56     |
| Horsepower       | -      | 0.25   |
| Motor Rpm        | -      | 1740   |
| Phase            | -      | 1      |
| Voltage (rated)  | -      | 115    |
| Amperage (rated) | -      | 2.9    |
| Service Factor   | -      | 1.35   |

| Drive Data        |        |        |
|-------------------|--------|--------|
|                   | Design | Actual |
| Motor Sheave Size | -      | VL34   |
| Motor Bore Size   | -      | 0.625  |
| Fan Sheave Size   | -      | AK58   |
| Fan Sheave Bore   | -      | 1.0    |
| Belt CL Distance  | -      | 7.75   |
| Num of Belts      | -      | 1      |
| Belt Size         | -      | 3L280  |

| Test Data         |        |        |
|-------------------|--------|--------|
|                   | Design | Actual |
| CFM               | 870    | 456    |
| Fan RPM           | 1187   | 1070   |
| RL Voltage        | -      | 118    |
| RL Amperage       | -      | 2.8    |
| Suction ESP       | -      | 0.39   |
| Discharge ESP     | -      | 0.21   |
| Total ESP         | 0.50   | 0.60   |
| Brake Horse Power | -      | 0.24   |

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Notes: NO HORSEPOWER REMAINING TO INCREASE FAN SPEED/CFM

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Project: CMS E.E. Waddell High Reno (Charlotte, NC)

## System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF2

AREA:

| Unit Data  |           |             |
|------------|-----------|-------------|
|            | Design    | Actual      |
| MFG        | GREENHECK | GREENHECK   |
| Model Num  | USF-12    | USF-12      |
| Serial Num | -         | 20512850    |
| Type       | -         | UTILITY SET |

| Motor Data       |        |        |
|------------------|--------|--------|
|                  | Design | Actual |
| Motor MFG        | -      | WEG    |
| Frame            | -      | 56     |
| Horsepower       | -      | 0.25   |
| Motor Rpm        | -      | 1740   |
| Phase            | -      | 1      |
| Voltage (rated)  | -      | 115    |
| Amperage (rated) | -      | 2.9    |
| Service Factor   | -      | 1.35   |

| Drive Data        |        |        |
|-------------------|--------|--------|
|                   | Design | Actual |
| Motor Sheave Size | -      | VL34   |
| Motor Bore Size   | -      | 0.625  |
| Fan Sheave Size   | -      | AK58   |
| Fan Sheave Bore   | -      | 1.0    |
| Belt CL Distance  | -      | 7.75   |
| Num of Belts      | -      | 1      |
| Belt Size         | -      | 3L280  |

| Test Data         |        |        |
|-------------------|--------|--------|
|                   | Design | Actual |
| CFM               | 870    | 507    |
| Fan RPM           | 1187   | 1061   |
| RL Voltage        | -      | 118    |
| RL Amperage       | -      | 2.8    |
| Suction ESP       | -      | 0.38   |
| Discharge ESP     | -      | 0.22   |
| Total ESP         | 0.50   | 0.60   |
| Brake Horse Power | -      | .24    |

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Notes: NO HORSEPOWER REMAINING TO INCREASE FAN SPEED/CFM

# National TAB

Project: CMS E.E. Waddell High Reno (Charlotte, NC)

## System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF3

AREA:

| Unit Data  |           |             |
|------------|-----------|-------------|
|            | Design    | Actual      |
| MFG        | GREENHECK | GREENHECK   |
| Model Num  | USF-12    | USF-12      |
| Serial Num | -         | 20512851    |
| Type       | -         | UTILITY SET |

| Motor Data       |        |        |
|------------------|--------|--------|
|                  | Design | Actual |
| Motor MFG        | -      | WEG    |
| Frame            | -      | CRE    |
| Horsepower       | -      | 0.25   |
| Motor Rpm        | -      | 1740   |
| Phase            | -      | 1      |
| Voltage (rated)  | -      | 115    |
| Amperage (rated) | -      | 2.9    |
| Service Factor   | -      | 1.35   |

| Drive Data        |        |        |
|-------------------|--------|--------|
|                   | Design | Actual |
| Motor Sheave Size | -      | VL34   |
| Motor Bore Size   | -      | 0.625  |
| Fan Sheave Size   | -      | AK58   |
| Fan Sheave Bore   | -      | 1.0    |
| Belt CL Distance  | -      | 7.75   |
| Num of Belts      | -      | 1      |
| Belt Size         | -      | 3L280  |

| Test Data         |        |        |
|-------------------|--------|--------|
|                   | Design | Actual |
| CFM               | 870    | 482    |
| Fan RPM           | 1187   | 1098   |
| RL Voltage        | -      | 118    |
| RL Amperage       | -      | 2.8    |
| Suction ESP       | -      | 0.39   |
| Discharge ESP     | -      | 0.20   |
| Total ESP         | 0.50   | 0.59   |
| Brake Horse Power | -      | 0.24   |

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Notes:

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Project: CMS E.E. Waddell High Reno (Charlotte, NC)

## System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF-4

AREA:GENERAL EXHAUST

| Unit Data  |        |           |
|------------|--------|-----------|
|            | Design | Actual    |
| MFG        | NA     | GREENHECK |
| Model Num  | NA     | G-140-VG  |
| Serial Num | -      | 20518303  |
| Type       | -      | CRE       |

| Motor Data       |        |           |
|------------------|--------|-----------|
|                  | Design | Actual    |
| Motor MFG        | -      | VARIGREEN |
| Horsepower       | -      | 0.50      |
| Motor Rpm        | -      | 300-1750  |
| Phase            | -      | 1         |
| Voltage (rated)  | -      | 277       |
| Amperage (rated) | -      | 3.2       |

| Test Data   |        |        |
|-------------|--------|--------|
|             | Design | Actual |
| CFM         | 1300   | 1348   |
| RL Voltage  | -      | 284    |
| RL Amperage | -      | 2.0    |
| Total ESP   | 0.50   | 0.42   |

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Project: CMS E.E. Waddell High Reno (Charlotte, NC)

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF-5

AREA:

| Unit Data |        |           |
|-----------|--------|-----------|
|           | Design | Actual    |
| MFG       | NA     | GREENHECK |
| Model Num | NA     | SP-A510   |

| Test Data |        |        |
|-----------|--------|--------|
|           | Design | Actual |
| CFM       | 350    | 400    |

| Motor Data       |        |        |
|------------------|--------|--------|
|                  | Design | Actual |
| Horsepower       | -      | 224 W  |
| Motor Rpm        | -      | 1015   |
| Phase            | -      | 1      |
| Voltage (rated)  | -      | 115    |
| Amperage (rated) | -      | 3.3    |

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Project: CMS E.E. Waddell High Reno (Charlotte, NC)

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF-6

AREA:

| Unit Data |        |            |
|-----------|--------|------------|
|           | Design | Actual     |
| MFG       | NA     | GREENHECK  |
| Model Num | NA     | SP-A390-VG |

| Test Data |        |        |
|-----------|--------|--------|
|           | Design | Actual |
| CFM       | 175    | 340    |

| Motor Data       |        |        |
|------------------|--------|--------|
|                  | Design | Actual |
| Horsepower       | -      | 26 W   |
| Motor Rpm        | 1099   | 1099   |
| Phase            | 1      | 1      |
| Voltage (rated)  | 115    | 115    |
| Amperage (rated) | -      | 1.5    |

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Project: CMS E.E. Waddell High Reno (Charlotte, NC)

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF-7

AREA:

| Unit Data |        |            |
|-----------|--------|------------|
|           | Design | Actual     |
| MFG       | NA     | GREENHECK  |
| Model Num | NA     | SP-A390-VG |

| Test Data |        |        |
|-----------|--------|--------|
|           | Design | Actual |
| CFM       | 175    | 330    |

| Motor Data       |        |        |
|------------------|--------|--------|
|                  | Design | Actual |
| Horsepower       | -      | 26 W   |
| Motor Rpm        | 1099   | 1099   |
| Phase            | 1      | 1      |
| Voltage (rated)  | 115    | 115    |
| Amperage (rated) | -      | 1.5    |

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Project: CMS E.E. Waddell High Reno (Charlotte, NC)

## System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF-8

AREA:

| Unit Data |        |               |
|-----------|--------|---------------|
|           | Design | Actual        |
| MFG       | NA     | GREENHECK     |
| Model Num | NA     | SP-A90-130-VG |

| Test Data |        |        |
|-----------|--------|--------|
|           | Design | Actual |
| CFM       | 129    | 131    |

| Motor Data       |        |        |
|------------------|--------|--------|
|                  | Design | Actual |
| Motor MFG        | -      | Baldor |
| Horsepower       | -      | 12 W   |
| Motor Rpm        | -      | 1041   |
| Phase            | -      | 1      |
| Voltage (rated)  | -      | 115    |
| Amperage (rated) | -      | 0.29   |

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Project: CMS E.E. Waddell High Reno (Charlotte, NC)

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF-9

AREA:

| Unit Data |        |               |
|-----------|--------|---------------|
|           | Design | Actual        |
| MFG       | NA     | GREENHECK     |
| Model Num | NA     | SP-A90-130-VG |

| Test Data |        |        |
|-----------|--------|--------|
|           | Design | Actual |
| CFM       | 129    | 132    |

| Motor Data       |        |        |
|------------------|--------|--------|
|                  | Design | Actual |
| Horsepower       | -      | 12 W   |
| Motor Rpm        | -      | 1041   |
| Phase            | -      | 1      |
| Voltage (rated)  | -      | 115    |
| Amperage (rated) | -      | 0.29   |

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Project: CMS E.E. Waddell High Reno (Charlotte, NC)

## System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF-10

AREA:

| Unit Data |        |               |
|-----------|--------|---------------|
|           | Design | Actual        |
| MFG       | NA     | GREENHECK     |
| Model Num | NA     | SP-A90-130-VG |

| Test Data |        |        |
|-----------|--------|--------|
|           | Design | Actual |
| CFM       | 129    | 115    |

| Motor Data       |        |        |
|------------------|--------|--------|
|                  | Design | Actual |
| Horsepower       | -      | 12 W   |
| Motor Rpm        | -      | 1041   |
| Phase            | -      | 1      |
| Voltage (rated)  | -      | 115    |
| Amperage (rated) | -      | 0.29   |

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# National TAB

Project: CMS E.E. Waddell High Reno (Charlotte, NC)

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF-11

AREA:

| Unit Data |        |               |
|-----------|--------|---------------|
|           | Design | Actual        |
| MFG       | NA     | GREENHECK     |
| Model Num | NA     | SP-A90-130-VG |

| Test Data |        |        |
|-----------|--------|--------|
|           | Design | Actual |
| CFM       | 129    | 122    |

| Motor Data       |        |        |
|------------------|--------|--------|
|                  | Design | Actual |
| Horsepower       | -      | 12 W   |
| Motor Rpm        | 1041   | 1041   |
| Phase            | 1      | 1      |
| Voltage (rated)  | 115    | 115    |
| Amperage (rated) | -      | 0.29   |

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Notes: