



## Air Handling Unit Report

PROJECT: Hudson High School  
LOCATION: Maple Gorge, MN  
PROJECT #: 07-1221

DATE: 9/17/2008  
CONTACT: Andy Stadheim

SYSTEM/UNIT: AHU-01  
AREA:

Tested By: Scott Stadheim  
Test Date: October 03, 2006

Unit Data	
UNIT MFG	York
Unit Model Number	YCA-060
Unit Serial Number	1008769AY42
Unit Discharge	Horizontal
Fan Rotation	CW
<u>AHU-01 / SF Filter Bank</u>	
Filter Manufacturer	FARR
Type	Pleated
Filter Qty - Size 1	6
Filter Size - Size 1	20x25x2
Filter Qty - Size 2	2
Filter Size - Size 2	16x25x2

Motor Data	
<u>AHU-01 / Supply Fan</u>	
Motor MFG	Magnatek
UNIT Manufacturer	48T
Motor Type	Belt Drive
Motor HP	5
Motor RPM	1725
Motor Rated Volts	115-208/230
Motor Phase	3
Motor Hertz	60
Motor FL Amps	12
Motor Service Factor	1.25
Nominal Efficiency	88

Test Data	
Total CFM	5602 CFM
Total CFM Design	5500 CFM
Outside Air CFM Design	500
Outside Air CFM Actual	532
Return Air CFM Design	5000
Return Air CFM Actual	5070
Design Total S.P.	2.65
Actual Total S.P.	2.61
Design External S.P.	0.75
Actual External S.P.	0.77 in. wc
S.P. Setpoint	1.25 in. wc
<u>AHU-01 / Supply Fan</u>	
Fan RPM Design	1725 RPM
Fan RPM Actual	1718 RPM
Motor Volts 1	206 Volts
Motor Volts 2	205 Volts
Motor Volts 3	208 Volts
Motor Amps 1	11.80 Amps
Motor Amps 2	11.50 Amps
Motor Amps 3	11.60 Amps

Sheave Data	
<u>AHU-01 / Supply Fan</u>	
Motor Sheave Model	BK36
Motor Sheave MFG	Congress
Motor Sheave Diam.	4 1/2
Motor Sheave Bore	7/8
Fan Sheave Model	BK77
Fan Sheave MFG	Congress
Fan Sheave Diam.	8
Fan Sheave Bore	1
Number of Belts	1
Belt Size	AX44
Sheave Center Line	32 1/2 in.

Test Pressures	
Pre-Filter SP In	0.12 in. wc
Pre-Filter SP Out	0.39 in. wc
Cool. Coil SP In	0.39 in. wc
Cool. Coil SP Out	0.95 in. wc
Fan SP In	0.95 in. wc
Fan SP Out	1.33 in. wc
OA Damper Pos	10 %
RA Damper Pos	90 %
VFD Position	52 HZ

* Notes	Date	Description
AHU-01	17-Sep-08	Pre-Filters are clean.
AHU-01	17-Sep-08	Suggested moving duct static sensor to a different location.



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LOCATION: Maple Gorge, MN  
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DATE: 9/17/2008  
CONTACT: Andy Stadheim

SYSTEM/UNIT: AHU-01 / VAV-01  
AREA: Classroom 100

Tested By: Scott Stadheim  
Test Date: September 17, 2008

Unit Data	
Unit Manufacturer	Nailor
Unit Model Number	NI-808
Box Inlet Size	8
VAV Address	12
Co-Efficient	1.1

Term Box Test Data	
K Factor	1.00
Max Diff. S.P.	0.12
Max Setpoint	1.10
Max Design CFM	1000 CFM
Max Actual CFM	1013 CFM
Min Design CFM	250 CFM
Min Actual CFM	258 CFM
Reheat Design CFM	400 CFM
Reheat Actual CFM	406 CFM

### AHU-01 / VAV-01 Supply Outlet Summary

System / Unit	Area Served	Outlet Type	Size	Design CFM	Prelim Reading	Final Reading	% Final Diff
Outlet-01	Classroom 100	S1	24x24	250	197	155	102
Outlet-02	Classroom 100	S1	24x24	250	181	156	103
Outlet-03	Classroom 100	S1	24x24	250	211	157	99
Outlet-04	Classroom 100	S1	24x24	250	267	158	101
Totals :		-	-	1,000	856	626	63 %

\* Notes

SYSTEM/UNIT: AHU-01 / VAV-02  
AREA: Classroom 103

Tested By: Scott Stadheim  
Test Date: September 17, 2008

Unit Data	
Unit Manufacturer	Nailor
Unit Model Number	NI-808
Box Inlet Size	8
VAV Address	13
Co-Efficient	1.1

Term Box Test Data	
K Factor	1.00
Max Diff. S.P.	0.12
Max Setpoint	1.10
Max Design CFM	1100 CFM
Max Actual CFM	1108 CFM
Min Design CFM	300 CFM
Min Actual CFM	316 CFM
Reheat Design CFM	450 CFM
Reheat Actual CFM	452 CFM

### AHU-01 / VAV-02 Supply Outlet Summary

System / Unit	Area Served	Outlet Type	Size	Design CFM	Prelim Reading	Final Reading	% Final Diff
Outlet-01	Classroom 103	S1	24x24	275	200	267	97
Outlet-02	Classroom 103	S1	24x24	275	161	272	99
Outlet-03	Classroom 103	S1	24x24	275	147	288	105
Outlet-04	Classroom 103	S1	24x24	275	141	281	102
Totals :		-	-	1,100	649	1,108	101 %

\* Notes

AHU-01 / VAV-02	17-Sep-08	VAV controller actuator tightened on shaft and still slips a little.
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**LOCATION:** Maple Gorge, MN  
**PROJECT #:** 07-1221

**DATE:** 9/17/2008  
**CONTACT:** Andy Stadheim

**SYSTEM/UNIT:** AHU-01 / VAV-03  
**AREA:** Classroom 105

Tested By: Scott Stadheim  
Test Date: September 17, 2008

Unit Data	
Unit Manufacturer	Nailor
Unit Model Number	NI-1000
Box Inlet Size	10
VAV Address	17
Co-Efficient	1.5

Term Box Test Data	
K Factor	1.00
Max Diff. S.P.	0.13
Max Setpoint	1.50
Max Design CFM	1500 CFM
Max Actual CFM	1516 CFM
Min Design CFM	500 CFM
Min Actual CFM	528 CFM
Reheat Design CFM	650 CFM
Reheat Actual CFM	657 CFM

### AHU-01 / VAV-03 Supply Outlet Summary

System / Unit	Area Served	Outlet Type	Size	Design CFM	Prelim Reading	Final Reading	% Final Diff
Outlet-01	Classroom 106	S1	24x24	250	132	261	104
Outlet-02	Classroom 106	S1	24x24	250	188	248	99
Outlet-03	Classroom 106	S1	24x24	250	164	257	103
Outlet-04	Classroom 106	S1	24x24	250	144	257	103
Outlet-05	Classroom 106	S1	24x24	250	221	242	97
Outlet-06	Classroom 106	S1	24x24	250	198	251	100
<b>Totals :</b>		-	-	<b>1,500</b>	<b>1,047</b>	<b>1,516</b>	<b>101 %</b>

\* Notes



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DATE: 9/17/2008  
CONTACT: Andy Stadheim

SYSTEM/UNIT: AHU-01 / VAV-04  
AREA: Classroom 106

Tested By: Scott Stadheim  
Test Date: September 17, 2008

Unit Data	
Unit Manufacturer	Nailor
Unit Model Number	NI-606
Box Inlet Size	6
VAV Address	16
Co-Efficient	.9

Term Box Test Data	
K Factor	1.00
Max Diff. S.P.	0.13
Max Setpoint	0.09
Max Design CFM	800 CFM
Max Actual CFM	822 CFM
Min Design CFM	200 CFM
Min Actual CFM	218 CFM
Reheat Design CFM	300 CFM
Reheat Actual CFM	308 CFM

### AHU-01 / VAV-04 Supply Outlet Summary

System / Unit	Area Served	Outlet Type	Size	Design CFM	Prelim Reading	Final Reading	% Final Diff
Outlet-01	Classroom 109	D2	18x20	200	218	211	106
Outlet-02	Classroom 109	D2	18x20	200	197	205	103
Outlet-03	Classroom 109	D2	18x20	200	238	208	104
Outlet-04	Classroom 109	D2	18x20	200	241	198	99
Totals :		-	-	800	894	822	103 %

\* Notes

SYSTEM/UNIT: AHU-01 / VAV-05  
AREA: Classroom 111

Tested By: Scott Stadheim  
Test Date: September 17, 2008

Unit Data	
Unit Manufacturer	Nailor
Unit Model Number	NI-808
Box Inlet Size	8
VAV Address	14
Co-Efficient	1.1

Term Box Test Data	
K Factor	1.00
Max Diff. S.P.	0.12
Max Setpoint	1.10
Max Design CFM	1100 CFM
Max Actual CFM	1143 CFM
Min Design CFM	300 CFM
Min Actual CFM	311 CFM
Reheat Design CFM	450 CFM
Reheat Actual CFM	455 CFM

### AHU-01 / VAV-05 Supply Outlet Summary

System / Unit	Area Served	Outlet Type	Size	Design CFM	Prelim Reading	Final Reading	% Final Diff
Outlet-01	Classroom 111	S1	24x24	250	282	262	105
Outlet-02	Classroom 111	S1	24x24	250	267	253	101
Outlet-03	Classroom 111	S1	24x24	250	306	265	106
Outlet-04	Classroom 111	S1	24x24	250	198	255	102
Outlet-05	Classroom 112	S3	8x8	100	154	108	108
Totals :		-	-	1,100	1,207	1,143	104 %

\* Notes