

Appendix E – Air Handling Unit and Rooftop Unit Selection

This appendix contains the cut sheets and other data for the Carrier air handling units and rooftop units used as a part of the design process.

Please see the all the air handling unit and rooftop unit information on the following pages.

Project Name: Nathan- Thesis Project

Mark For: AHU-1

Unit Parameters

Unit Size: Size 50 39MN

Insulation: R-13 Double Wall Sealed Panel

Exterior Finish: Galvanized Exterior Panels

Interior Finish: Galvanized Interior Panels

Level I Thermal Break

Filter Mixing Box

Damper: Top Standard Parallel

Damper: Rear Standard Opposed

2In. Angle Filter

Field Supplied 2in. Throwaway Filter

Qty (18) 16in. x 20in.

Qty (12) 16in. x 25in.

Hot Water Coil

Hot Water 50.6 sq.ft 1 Row 11 FPI Half Circuit

Coil Connection Right Side

1/2 in. Tube Diameter

AL fins Galv. Casing

Steel Header

No Coating

Heating Performance Ratings

Altitude, ft	0
Face Vel., fpm	408.4
Site Airflow, CFM	20650
Std. Airflow, CFM	20650
Heating Cap., MBH	1283.67
Flow Rate, gpm	92.7
Fluid PD, ft wg	7.7
Fluid Vel., ft/s	5.6
EWT, °F	180.00
LWT, °F	152.3
Drop, °F	27.7
Cv Rating	41.5
EAT, °F	22.50
LAT, °F	79.35
Air Friction, in wg	0.17

Chilled Water Coil

Shipping Split - Aero Latches

Standard Drain Pan Right Side Drain

Chilled Water 50.6 sq.ft 8 Row 14 FPI Double Circuit

Coil Connection Right Side
 1/2 in. Tube Diameter
 AL fins Galv. Casing
 Steel Header
 No Coating

Cooling Performance Ratings

Altitude, ft	0
Face Vel., fpm	408.4
Site Airflow, CFM	20650
Std. Airflow, CFM	20650
Total Clg. Cap, MBH	1386.45
Sen. Clg. Cap, MBH	824.29
Flow Rate, gpm	226.8
Fluid PD, ft wg	10.6
Fluid Vel., ft/s	3.4
EWT, °F	44.00
LWT, °F	56.22
Rise, °F	12.2
Cv Rating	101.4
EADB, °F	87.00
EAWB, °F	71.80
LADB, °F	50.50
LAWB, °F	50.44
Air Friction, in wg	0.97

Note: .

Draw-Thru Supply Fan

Horizontal

Rear Inlet

Performance Ratings

Site Airflow, CFM	20650
Altitude, ft	0
Std. Airflow, CFM	20650
Upstream Ext. Static, in wg	0.00
DownStream Ext. Static, in wg	2.00
Clg. Coil Static, in wg	0.97
Htg. Coil Static, in wg	0.17
Other Losses, in wg	0.00
Accessories Static, in wg	0.41
Total Static, in wg	3.55
Calculated Fan Speed, rpm	1348
Calculated Motor BHP	20.0

Acoustic Data:

Freq.	Disch.	Inlet	Casing
63 hz	106	103	99
125 hz	98	95	90
250 hz	106	100	94
500 hz	97	91	87
1000 hz	92	86	80
2000 hz	86	81	75
4000 hz	84	79	73
8000 hz	79	74	69

Fan Sled

1348 FanRPM Class II

AirFoil Standard Wheel AFMV01301

Top Horiz. Front Discharge

Right Side Fan Motor Location

Spring Fan Isolation

25 HP High Efficiency ODP 200/230/460 3Ph 60Hz 1800 RPM

Variable Frequency Drive 208/230 Volts 3 Phase 60Hz

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Mount

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1.5 Service Factor

Fixed Pitch Drive

Project Name: Nathan- Thesis Project

Mark For: AHU-2

Unit Parameters

Unit Size: Size 40 39MN

Insulation: R-13 Double Wall Sealed Panel

Exterior Finish: Galvanized Exterior Panels

Interior Finish: Galvanized Interior Panels

Level I Thermal Break

Filter Mixing Box

Damper: Top Standard Parallel

Damper: Rear Standard Opposed

2In. Angle Filter

Field Supplied 2in. Throwaway Filter

Qty (24) 16in. x 25in.

Hot Water Coil

Hot Water 40.0 sq.ft 1 Row 8 FPI Half Circuit

Coil Connection Right Side

1/2 in. Tube Diameter

AL fins Galv. Casing

Steel Header

No Coating

Heating Performance Ratings

Altitude, ft	0
Face Vel., fpm	469.4
Site Airflow, CFM	18777
Std. Airflow, CFM	18777
Heating Cap., MBH	917.70
Flow Rate, gpm	76.8
Fluid PD, ft wg	6.6
Fluid Vel., ft/s	5.4
EWT, °F	180.00
LWT, °F	156.1
Drop, °F	23.9
Cv Rating	34.3
EAT, °F	15.20
LAT, °F	59.89
Air Friction, in wg	0.17

Chilled Water Coil

Shipping Split - Aero Latches

Standard Drain Pan Right Side Drain
 Chilled Water 40.0 sq.ft 8 Row 12 FPI Double Circuit
 Coil Connection Right Side
 5/8 in. Tube Diameter
 AL fins Galv. Casing
 Steel Header
 No Coating

Cooling Performance Ratings

Altitude, ft	0
Face Vel., fpm	469.4
Site Airflow, CFM	18777
Std. Airflow, CFM	18777
Total Clg. Cap, MBH	1407.94
Sen. Clg. Cap, MBH	834.53
Flow Rate, gpm	247.2
Fluid PD, ft wg	11.3
Fluid Vel., ft/s	3.4
EWT, °F	44.00
LWT, °F	55.39
Rise, °F	11.4
Cv Rating	110.6
EADB, °F	91.40
EAWB, °F	73.90
LADB, °F	50.76
LAWB, °F	50.68
Air Friction, in wg	1.30

Draw-Thru Supply Fan

Horizontal

Rear Inlet

Performance Ratings

Site Airflow, CFM	18777
Altitude, ft	0
Std. Airflow, CFM	18777
Upstream Ext. Static, in wg	0.00
DownStream Ext. Static, in wg	2.00
Clg. Coil Static, in wg	1.30
Htg. Coil Static, in wg	0.17
Other Losses, in wg	0.00
Accessories Static, in wg	0.43
Total Static, in wg	3.90
Calculated Fan Speed, rpm	1629
Calculated Motor BHP	21.8

Acoustic Data:

Freq.	Disch.	Inlet	Casing
63 hz	110	107	103
125 hz	99	96	91
250 hz	108	102	96
500 hz	100	94	90
1000 hz	95	89	83
2000 hz	90	85	79
4000 hz	87	82	76
8000 hz	83	78	73

Fan Sled

1629 FanRPM Class II
AirFoil Standard Wheel AFMV01271
Top Horiz. Front Discharge
Right Side Fan Motor Location
Spring Fan Isolation
25 HP High Efficiency ODP 200/230/460 3Ph 60Hz 1800 RPM
Variable Frequency Drive 208/230 Volts 3 Phase 60Hz
5Factor
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Mount
ed No
Bypass
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1.5 Service Factor
Fixed Pitch Drive

Project Name: Nathan- Thesis Project

Mark For: AHU-3

Unit Parameters

Unit Size: Size 21 39MN

Insulation: R-13 Double Wall Sealed Panel

Exterior Finish: Galvanized Exterior Panels

Interior Finish: Galvanized Interior Panels

Level I Thermal Break

Filter Mixing Box

Damper: Top Standard Parallel

Damper: Rear Standard Opposed

2In. Angle Filter

Field Supplied 2in. Throwaway Filter

Qty (12) 16in. x 25in.

Skid (factory)

Hot Water Coil

Hot Water 21.44 sq.ft 2 Row 8 FPI Full Circuit

Coil Connection Right Side

1/2 in. Tube Diameter

AL fins Galv. Casing

Steel Header

No Coating

Heating Performance Ratings

Altitude, ft	0
Face Vel., fpm	393.8
Site Airflow, CFM	8444
Std. Airflow, CFM	8444
Heating Cap., MBH	645.08
Flow Rate, gpm	59.8
Fluid PD, ft wg	3.1
Fluid Vel., ft/s	2.7
EWT, °F	180.00
LWT, °F	158.4
Drop, °F	21.6
Cv Rating	26.7
EAT, °F	11.00
LAT, °F	80.86
Air Friction, in wg	0.13

Chilled Water Coil

Shipping Split - Aero Latches
 Standard Drain Pan Right Side Drain
 Chilled Water 21.44 sq.ft 10 Row 14 FPI Double Circuit
 Coil Connection Right Side
 1/2 in. Tube Diameter
 AL fins Galv. Casing
 Steel Header
 No Coating

Cooling Performance Ratings

Altitude, ft	0
Face Vel., fpm	393.8
Site Airflow, CFM	8444
Std. Airflow, CFM	8444
Total Clg. Cap, MBH	715.21
Sen. Clg. Cap, MBH	409.71
Flow Rate, gpm	121.7
Fluid PD, ft wg	8.5
Fluid Vel., ft/s	3.3
EWT, °F	44.00
LWT, °F	55.75
Rise, °F	11.7
Cv Rating	54.4
EADB, °F	93.00
EAWB, °F	75.00
LADB, °F	48.63
LAWB, °F	48.62
Air Friction, in wg	1.15

Draw-Thru Supply Fan

Horizontal

Rear Inlet

Performance Ratings

Site Airflow, CFM	8444
Altitude, ft	0
Std. Airflow, CFM	8444
Upstream Ext. Static, in wg	0.00
DownStream Ext. Static, in wg	2.00
Clg. Coil Static, in wg	1.15
Htg. Coil Static, in wg	0.13
Other Losses, in wg	0.00
Accessories Static, in wg	0.43
Total Static, in wg	3.71
Calculated Fan Speed, rpm	1889

Calculated Motor BHP 8.0

Acoustic Data:

Freq.	Disch.	Inlet	Casing
63 hz	100	92	91
125 hz	95	88	86
250 hz	97	82	81
500 hz	92	76	76
1000 hz	89	75	73
2000 hz	86	72	70
4000 hz	81	68	56
8000 hz	76	60	51

Fan Sled

1889 FanRPM Class I

AirFoil Standard Wheel AFMV01201

Top Horiz. Front Discharge

Right Side Fan Motor Location

Spring Fan Isolation

10 HP High Efficiency ODP 200/230/460 3Ph 60Hz 1800 RPM

Variable Frequency Drive 208/230 Volts 3 Phase 60Hz

5Factor

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Mount

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Bypas

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1.5 Service Factor

Variable Pitch Drive

Skid (factory)

Project Name: Nathan- Thesis Project

Mark For: AHU-4

Unit Parameters

Unit Size: Size 12 39MN

Insulation: R-13 Double Wall Sealed Panel

Exterior Finish: Galvanized Exterior Panels

Interior Finish: Galvanized Interior Panels

Level I Thermal Break

Filter Mixing Box

Damper: Top Standard Parallel

Damper: Rear Standard Opposed

2In. Angle Filter

Field Supplied 2in. Throwaway Filter

Qty (6) 20in. x 20in.

Skid (factory)

Hot Water Coil

Hot Water 12.64 sq.ft 1 Row 11 FPI Half Circuit

Coil Connection Right Side

1/2 in. Tube Diameter

AL fins Galv. Casing

Steel Header

No Coating

Heating Performance Ratings

Altitude, ft	0
Face Vel., fpm	385.0
Site Airflow, CFM	4867
Std. Airflow, CFM	4867
Heating Cap., MBH	331.12
Flow Rate, gpm	31.2
Fluid PD, ft wg	6.0
Fluid Vel., ft/s	3.8
EWT, °F	180.00
LWT, °F	158.8
Drop, °F	21.2
Cv Rating	14.0
EAT, °F	12.90
LAT, °F	75.12
Air Friction, in wg	0.15

Chilled Water Coil

Shipping Split - Aero Latches
 Standard Drain Pan Right Side Drain
 Chilled Water 12.64 sq.ft 10 Row 14 FPI Full Circuit
 Coil Connection Right Side
 1/2 in. Tube Diameter
 AL fins Galv. Casing
 Steel Header
 No Coating

Cooling Performance Ratings

Altitude, ft	0
Face Vel., fpm	385.0
Site Airflow, CFM	4867
Std. Airflow, CFM	4867
Total Clg. Cap, MBH	409.46
Sen. Clg. Cap, MBH	236.24
Flow Rate, gpm	71.1
Fluid PD, ft wg	15.5
Fluid Vel., ft/s	4.3
EWT, °F	44.00
LWT, °F	55.51
Rise, °F	11.5
Cv Rating	27.4
EADB, °F	92.20
EAWB, °F	74.40
LADB, °F	47.81
LAWB, °F	47.81
Air Friction, in wg	1.12

Draw-Thru Supply Fan

Horizontal

Rear Inlet

Performance Ratings

Site Airflow, CFM	4867
Altitude, ft	0
Std. Airflow, CFM	4867
Upstream Ext. Static, in wg	0.00
DownStream Ext. Static, in wg	2.00
Clg. Coil Static, in wg	1.12
Htg. Coil Static, in wg	0.15
Other Losses, in wg	0.00
Accessories Static, in wg	0.43
Total Static, in wg	3.70
Calculated Fan Speed, rpm	2301

Calculated Motor BHP 5.0

Acoustic Data:

Freq.	Disch.	Inlet	Casing
63 hz	105	97	96
125 hz	95	88	86
250 hz	96	81	80
500 hz	92	76	76
1000 hz	88	74	72
2000 hz	85	71	69
4000 hz	80	67	55
8000 hz	74	58	49

Fan Sled

2301 FanRPM Class II

AirFoil Standard Wheel AFMV01161

Top Horiz. Front Discharge

Right Side Fan Motor Location

Spring Fan Isolation

7.5 HP High Efficiency ODP 200/230/460 3Ph 60Hz 1800 RPM

Variable Frequency Drive 208/230 Volts 3 Phase 60Hz

5Factor

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Mount

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1.5 Service Factor

Variable Pitch Drive

Skid (factory)

Project Name: Nathan- Thesis Project

Mark For: RTU-1

Unit Parameters

Unit Size: Size 06 39MW
Insulation: R-13 Double Wall Sealed Panel
Exterior Finish: Galvanized Exterior Panels
Interior Finish: Galvanized Interior Panels
Level II Thermal Break
Ahu Curb Factory Supplied 14in. Curb
Coil Connection House Curb
24in. Deep Coil Connection Housing Single Wall

Filter Mixing Box

Damper: Rear Standard Opposed
Hood Rear
Damper: Bottom Standard Parallel
2in. Angle Filter
Construction Filter (disposable panel filter)
Field Supplied 2in. Throwaway Filter
Qty (4) 16in. x 20in.

Hot Water Coil

Hot Water 5.9 sq.ft 1 Row 8 FPI Half Circuit
Coil Connection Right Side
1/2 in. Tube Diameter
AL fins Galv. Casing
Steel Header
No Coating

Heating Performance Ratings

Altitude, ft	0
Face Vel., fpm	484.9
Site Airflow, CFM	2861
Std. Airflow, CFM	2861
Heating Cap., MBH	73.52
Flow Rate, gpm	3.0
Fluid PD, ft wg	0.1
Fluid Vel., ft/s	0.5
EWT, °F	180.00
LWT, °F	131.0
Drop, °F	49.0
Cv Rating	1.3

EAT, °F	41.50
LAT, °F	65.00
Air Friction, in wg	0.18

Skid

Chilled Water Coil

Standard Drain Pan Right Side Drain

Chilled Water 5.9 sq.ft 8 Row 11 FPI Double Circuit

Coil Connection Right Side

1/2 in. Tube Diameter

AL fins Galv. Casing

Steel Header

No Coating

Cooling Performance Ratings

Altitude, ft	0
Face Vel., fpm	484.9
Site Airflow, CFM	2861
Std. Airflow, CFM	2861
Total Clg. Cap, MBH	110.14
Sen. Clg. Cap, MBH	85.03
Flow Rate, gpm	18.4
Fluid PD, ft wg	1.2
Fluid Vel., ft/s	0.9
EWT, °F	44.00
LWT, °F	55.97
Rise, °F	12.0
Cv Rating	8.2
EADB, °F	84.00
EAWB, °F	68.60
LADB, °F	56.82
LAWB, °F	56.58
Air Friction, in wg	1.06

Note: Fluid velocity for this application is outside the scope of ARI Std. 410.

Hot Water Coil

Hot Water 5.9 sq.ft 2 Row 8 FPI Half Circuit

Coil Connection Right Side

1/2 in. Tube Diameter

AL fins Galv. Casing

Steel Header

No Coating

Heating Performance Ratings

Altitude, ft	0
Face Vel., fpm	484.9

Site Airflow, CFM	2861
Std. Airflow, CFM	2861
Heating Cap., MBH	160.18
Flow Rate, gpm	16.0
Fluid PD, ft wg	3.0
Fluid Vel., ft/s	2.7
EWT, °F	180.00
LWT, °F	160.0
Drop, °F	20.0
Cv Rating	7.2
EAT, °F	45.00
LAT, °F	96.20
Air Friction, in wg	0.20

Draw-Thru Supply Fan

Horizontal

Rear Inlet

Performance Ratings

Site Airflow, CFM	2861
Altitude, ft	0
Std. Airflow, CFM	2861
Upstream Ext. Static, in wg	0.00
DownStream Ext. Static, in wg	2.00
Clg. Coil Static, in wg	1.06
Htg. Coil Static, in wg	0.37
Other Losses, in wg	0.00
Accessories Static, in wg	0.75
Total Static, in wg	4.18
Calculated Fan Speed, rpm	3434
Calculated Motor BHP	4.0

Acoustic Data:

Freq.	Disch.	Inlet	Casing
63 hz	101	93	92
125 hz	95	88	86
250 hz	93	78	77
500 hz	95	79	79
1000 hz	89	75	73
2000 hz	87	73	71
4000 hz	82	69	57
8000 hz	77	61	52

Fan Sled

3434 FanRPM Class II

Project Name: Nathan- Thesis Project

Mark For: RTU-2

Unit Parameters

Unit Size: Size 30 39MW
Insulation: R-13 Double Wall Sealed Panel
Exterior Finish: Galvanized Exterior Panels
Interior Finish: Galvanized Interior Panels
Level II Thermal Break
Ahu Curb Factory Supplied 14in. Curb
Coil Connection House Curb
24in. Deep Coil Connection Housing Single Wall

Filter Mixing Box

Damper: Rear Standard Opposed
Hood Rear
Damper: Bottom Standard Parallel
2in. Angle Filter
Construction Filter (disposable panel filter)
Field Supplied 2in. Throwaway Filter
Qty (16) 16in. x 25in.

Hot Water Coil

Hot Water 30.35 sq.ft 1 Row 8 FPI Half Circuit
Coil Connection Right Side
1/2 in. Tube Diameter
AL fins Galv. Casing
Steel Header
No Coating

Heating Performance Ratings

Altitude, ft	0
Face Vel., fpm	502.1
Site Airflow, CFM	15238
Std. Airflow, CFM	15238
Heating Cap., MBH	657.11
Flow Rate, gpm	30.4
Fluid PD, ft wg	3.0
Fluid Vel., ft/s	2.7
EWT, °F	180.00
LWT, °F	136.8
Drop, °F	43.2
Cv Rating	13.6

EAT, °F	11.00
LAT, °F	50.44
Air Friction, in wg	0.18

Skid

Chilled Water Coil

Standard Drain Pan Right Side Drain

Chilled Water 30.35 sq.ft 4 Row 8 FPI Double Circuit

Coil Connection Right Side

1/2 in. Tube Diameter

AL fins Galv. Casing

Steel Header

No Coating

Cooling Performance Ratings

Altitude, ft	0
Face Vel., fpm	502.1
Site Airflow, CFM	15238
Std. Airflow, CFM	15238
Total Clg. Cap, MBH	469.41
Sen. Clg. Cap, MBH	364.90
Flow Rate, gpm	60.9
Fluid PD, ft wg	1.2
Fluid Vel., ft/s	1.4
EWT, °F	44.00
LWT, °F	59.41
Rise, °F	15.4
Cv Rating	27.2
EADB, °F	92.40
EAWB, °F	74.80
LADB, °F	70.50
LAWB, °F	66.72
Air Friction, in wg	0.49

Hot Water Coil

Hot Water 30.35 sq.ft 1 Row 8 FPI Half Circuit

Coil Connection Right Side

1/2 in. Tube Diameter

AL fins Galv. Casing

Steel Header

No Coating

Heating Performance Ratings

Altitude, ft	0
Face Vel., fpm	502.1
Site Airflow, CFM	15238

Std. Airflow, CFM	15238
Heating Cap., MBH	586.35
Flow Rate, gpm	58.7
Fluid PD, ft wg	10.5
Fluid Vel., ft/s	5.3
EWT, °F	180.00
LWT, °F	160.0
Drop, °F	20.0
Cv Rating	26.3
EAT, °F	45.00
LAT, °F	80.19
Air Friction, in wg	0.20

Draw-Thru Supply Fan

Horizontal

Rear Inlet

Performance Ratings

Site Airflow, CFM	15238
Altitude, ft	0
Std. Airflow, CFM	15238
Upstream Ext. Static, in wg	0.00
DownStream Ext. Static, in wg	2.00
Clg. Coil Static, in wg	0.49
Htg. Coil Static, in wg	0.38
Other Losses, in wg	0.00
Accessories Static, in wg	1.08
Total Static, in wg	3.95
Calculated Fan Speed, rpm	2226
Calculated Motor BHP	19.2

Acoustic Data:

Freq.	Disch.	Inlet	Casing
63 hz	102	94	93
125 hz	98	91	89
250 hz	102	87	86
500 hz	100	84	84
1000 hz	98	84	82
2000 hz	94	80	78
4000 hz	90	77	65
8000 hz	87	71	62

Fan Sled

2226 FanRPM Class II

AirFoil Standard Wheel AFMV01221

Project Name: Nathan- Thesis Project

Mark For: RTU-3

Unit Parameters

Unit Size: Size 12 39MW
Insulation: R-13 Double Wall Sealed Panel
Exterior Finish: Galvanized Exterior Panels
Interior Finish: Galvanized Interior Panels
Level II Thermal Break
Ahu Curb Factory Supplied 14in. Curb
Coil Connection House Curb
24in. Deep Coil Connection Housing Single Wall

Filter Mixing Box

Damper: Rear Standard Opposed
Hood Rear
Damper: Bottom Standard Parallel
2In. Angle Filter
Construction Filter (disposable panel filter)
Field Supplied 2in. Throwaway Filter
Qty (6) 20in. x 20in.

Hot Water Coil

Hot Water 12.64 sq.ft 1 Row 8 FPI Half Circuit
Coil Connection Right Side
1/2 in. Tube Diameter
AL fins Galv. Casing
Steel Header
No Coating

Heating Performance Ratings

Altitude, ft	0
Face Vel., fpm	481.6
Site Airflow, CFM	6088
Std. Airflow, CFM	6088
Heating Cap., MBH	152.79
Flow Rate, gpm	5.0
Fluid PD, ft wg	0.2
Fluid Vel., ft/s	0.6
EWT, °F	180.00
LWT, °F	118.9
Drop, °F	61.1
Cv Rating	2.2

EAT, °F	41.50
LAT, °F	64.45
Air Friction, in wg	0.18

Skid

Chilled Water Coil

Standard Drain Pan Right Side Drain

Chilled Water 12.64 sq.ft 4 Row 11 FPI Full Circuit

Coil Connection Right Side

1/2 in. Tube Diameter

AL fins Galv. Casing

Steel Header

No Coating

Cooling Performance Ratings

Altitude, ft	0
Face Vel., fpm	481.6
Site Airflow, CFM	6088
Std. Airflow, CFM	6088
Total Clg. Cap, MBH	111.20
Sen. Clg. Cap, MBH	106.95
Flow Rate, gpm	13.0
Fluid PD, ft wg	0.8
Fluid Vel., ft/s	0.9
EWT, °F	44.00
LWT, °F	61.10
Rise, °F	17.1
Cv Rating	5.8
EADB, °F	78.40
EAWB, °F	66.40
LADB, °F	62.34
LAWB, °F	60.77
Air Friction, in wg	0.42

Note: Fluid velocity for this application is outside the scope of ARI Std. 410.

Hot Water Coil

Hot Water 12.64 sq.ft 1 Row 8 FPI Half Circuit

Coil Connection Right Side

1/2 in. Tube Diameter

AL fins Galv. Casing

Steel Header

No Coating

Heating Performance Ratings

Altitude, ft	0
Face Vel., fpm	481.6

Site Airflow, CFM	6088
Std. Airflow, CFM	6088
Heating Cap., MBH	216.48
Flow Rate, gpm	21.6
Fluid PD, ft wg	2.9
Fluid Vel., ft/s	2.6
EWT, °F	180.00
LWT, °F	160.0
Drop, °F	20.0
Cv Rating	9.7
EAT, °F	51.60
LAT, °F	84.12
Air Friction, in wg	0.18

Draw-Thru Supply Fan

Horizontal

Rear Inlet

Performance Ratings

Site Airflow, CFM	6088
Altitude, ft	0
Std. Airflow, CFM	6088
Upstream Ext. Static, in wg	0.00
DownStream Ext. Static, in wg	2.00
Clg. Coil Static, in wg	0.42
Htg. Coil Static, in wg	0.36
Other Losses, in wg	0.00
Accessories Static, in wg	0.81
Total Static, in wg	3.59
Calculated Fan Speed, rpm	2553
Calculated Motor BHP	6.8

Acoustic Data:

Freq.	Disch.	Inlet	Casing
63 hz	107	99	98
125 hz	97	90	88
250 hz	97	82	81
500 hz	96	80	80
1000 hz	92	78	76
2000 hz	88	74	72
4000 hz	84	71	59
8000 hz	78	62	53

Fan Sled

2553 FanRPM Class II

Project Name: Nathan- Thesis Project

Mark For: RTU-7

Unit Parameters

Unit Size: Size 06 39MW
Insulation: R-13 Double Wall Sealed Panel
Exterior Finish: Galvanized Exterior Panels
Interior Finish: Galvanized Interior Panels
Level II Thermal Break
Ahu Curb Factory Supplied 14in. Curb
Coil Connection House Curb
24in. Deep Coil Connection Housing Single Wall

Filter Mixing Box

Damper: Rear Standard Opposed
Hood Rear
Damper: Bottom Standard Parallel
2in. Angle Filter
Construction Filter (disposable panel filter)
Field Supplied 2in. Throwaway Filter
Qty (4) 16in. x 20in.

Hot Water Coil

Hot Water 5.9 sq.ft 1 Row 8 FPI Half Circuit
Coil Connection Right Side
1/2 in. Tube Diameter
AL fins Galv. Casing
Steel Header
No Coating

Heating Performance Ratings

Altitude, ft	0
Face Vel., fpm	422.4
Site Airflow, CFM	2492
Std. Airflow, CFM	2492
Heating Cap., MBH	72.53
Flow Rate, gpm	3.0
Fluid PD, ft wg	0.1
Fluid Vel., ft/s	0.5
EWT, °F	180.00
LWT, °F	131.7
Drop, °F	48.3
Cv Rating	1.3

EAT, °F	38.40
LAT, °F	65.02
Air Friction, in wg	0.14

Skid

Chilled Water Coil

Standard Drain Pan Right Side Drain

Chilled Water 5.9 sq.ft 6 Row 11 FPI Double Circuit

Coil Connection Right Side

1/2 in. Tube Diameter

AL fins Galv. Casing

Steel Header

No Coating

Cooling Performance Ratings

Altitude, ft	0
Face Vel., fpm	422.4
Site Airflow, CFM	2492
Std. Airflow, CFM	2492
Total Clg. Cap, MBH	82.35
Sen. Clg. Cap, MBH	56.34
Flow Rate, gpm	11.8
Fluid PD, ft wg	0.8
Fluid Vel., ft/s	0.9
EWT, °F	44.00
LWT, °F	57.95
Rise, °F	14.0
Cv Rating	5.3
EADB, °F	81.60
EAWB, °F	70.20
LADB, °F	60.93
LAWB, °F	60.49
Air Friction, in wg	0.66

Note: Fluid velocity for this application is outside the scope of ARI Std. 410.

Hot Water Coil

Hot Water 5.9 sq.ft 1 Row 8 FPI Half Circuit

Coil Connection Right Side

1/2 in. Tube Diameter

AL fins Galv. Casing

Steel Header

No Coating

Heating Performance Ratings

Altitude, ft	0
Face Vel., fpm	422.4

Site Airflow, CFM	2492
Std. Airflow, CFM	2492
Heating Cap., MBH	96.36
Flow Rate, gpm	9.7
Fluid PD, ft wg	0.9
Fluid Vel., ft/s	1.6
EWT, °F	180.00
LWT, °F	160.0
Drop, °F	20.0
Cv Rating	4.3
EAT, °F	45.00
LAT, °F	80.36
Air Friction, in wg	0.14

Draw-Thru Supply Fan

Horizontal

Rear Inlet

Performance Ratings

Site Airflow, CFM	2492
Altitude, ft	0
Std. Airflow, CFM	2492
Upstream Ext. Static, in wg	0.00
DownStream Ext. Static, in wg	2.00
Clg. Coil Static, in wg	0.66
Htg. Coil Static, in wg	0.28
Other Losses, in wg	0.00
Accessories Static, in wg	0.64
Total Static, in wg	3.58
Calculated Fan Speed, rpm	3121
Calculated Motor BHP	2.9

Acoustic Data:

Freq.	Disch.	Inlet	Casing
63 hz	99	91	90
125 hz	94	87	85
250 hz	92	77	76
500 hz	92	76	76
1000 hz	87	73	71
2000 hz	84	70	68
4000 hz	79	66	54
8000 hz	74	58	49

Fan Sled

3121 FanRPM Class II

Project Name: Nathan- Thesis Project

Mark For: RTU-8

Unit Parameters

Unit Size: Size 03 39MW
Insulation: R-13 Double Wall Sealed Panel
Exterior Finish: Galvanized Exterior Panels
Interior Finish: Galvanized Interior Panels
Level II Thermal Break
Ahu Curb Factory Supplied 14in. Curb
Coil Connection House Curb
24in. Deep Coil Connection Housing Single Wall

Filter Mixing Box

Damper: Rear Standard Parallel
Hood Rear
Damper: Bottom Standard Parallel
2In. Angle Filter
Construction Filter (disposable panel filter)
Field Supplied 2in. Throwaway Filter
Qty (2) 16in. x 25in.

Hot Water Coil

Hot Water 3.47 sq.ft 1 Row 8 FPI Half Circuit
Coil Connection Right Side
1/2 in. Tube Diameter
AL fins Galv. Casing
Steel Header
No Coating

Heating Performance Ratings

Altitude, ft	0
Face Vel., fpm	427.4
Site Airflow, CFM	1483
Std. Airflow, CFM	1483
Heating Cap., MBH	60.81
Flow Rate, gpm	4.0
Fluid PD, ft wg	0.2
Fluid Vel., ft/s	0.7
EWT, °F	180.00
LWT, °F	149.6
Drop, °F	30.4
Cv Rating	1.8

EAT, °F	11.00
LAT, °F	48.50
Air Friction, in wg	0.14

Skid

Chilled Water Coil

Standard Drain Pan Right Side Drain

Chilled Water 3.47 sq.ft 8 Row 11 FPI Full Circuit

Coil Connection Right Side

1/2 in. Tube Diameter

AL fins Galv. Casing

Steel Header

No Coating

Cooling Performance Ratings

Altitude, ft	0
Face Vel., fpm	427.4
Site Airflow, CFM	1483
Std. Airflow, CFM	1483
Total Clg. Cap, MBH	70.58
Sen. Clg. Cap, MBH	43.32
Flow Rate, gpm	8.9
Fluid PD, ft wg	0.6
Fluid Vel., ft/s	0.9
EWT, °F	44.00
LWT, °F	59.85
Rise, °F	15.9
Cv Rating	4.0
EADB, °F	86.60
EAWB, °F	73.30
LADB, °F	59.89
LAWB, °F	59.73
Air Friction, in wg	0.92

Note: Fluid velocity for this application is outside the scope of ARI Std. 410.

Hot Water Coil

Hot Water 3.47 sq.ft 1 Row 8 FPI Half Circuit

Coil Connection Right Side

1/2 in. Tube Diameter

AL fins Galv. Casing

Steel Header

No Coating

Heating Performance Ratings

Altitude, ft	0
Face Vel., fpm	427.4

Site Airflow, CFM	1483
Std. Airflow, CFM	1483
Heating Cap., MBH	52.15
Flow Rate, gpm	5.2
Fluid PD, ft wg	0.3
Fluid Vel., ft/s	0.9
EWT, °F	180.00
LWT, °F	160.0
Drop, °F	20.0
Cv Rating	2.3
EAT, °F	45.00
LAT, °F	77.16
Air Friction, in wg	0.15

Draw-Thru Supply Fan

Horizontal

Rear Inlet

Performance Ratings

Site Airflow, CFM	1483
Altitude, ft	0
Std. Airflow, CFM	1483
Upstream Ext. Static, in wg	0.00
DownStream Ext. Static, in wg	2.00
Clg. Coil Static, in wg	0.92
Htg. Coil Static, in wg	0.28
Other Losses, in wg	0.00
Accessories Static, in wg	0.79
Total Static, in wg	3.99
Calculated Fan Speed, rpm	4000
Calculated Motor BHP	2.8

Acoustic Data:

Freq.	Disch.	Inlet	Casing
63 hz	105	97	96
125 hz	92	85	83
250 hz	89	74	73
500 hz	93	77	77
1000 hz	87	73	71
2000 hz	85	71	69
4000 hz	81	68	56
8000 hz	77	61	52

Fan Sled

4000 FanRPM Class II