

MEMORIA DE CÁLCULO DE AIRE ACONDICIONADO

CALCULO DE CARGA TÉRMICA

Proyecto

ADECUACION DE AREA PARA QUIROFANOS EN EL HOSPITAL SALDAÑA

Propietario

Hospital Nacional General de Neumología y Medicina Familiar
Saldaña "Dr. José Antonio Saldaña" (Neumológico)

Air System Sizing Summary for 01.UMA-CQ-01

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

Air System Information

Air System Name **01.UMA-CQ-01**
Equipment Class **SPLT AHU**
Air System Type **SZCAV**

Number of zones **1**
Floor Area **329.7** ft²
Location **San Salvador, El Salvador**

Sizing Calculation Information

Calculation Months **Jan to Dec**
Sizing Data **Calculated**

Zone CFM Sizing **Sum of space airflow rates**
Space CFM Sizing **Individual peak space loads**

Central Cooling Coil Sizing Data

Total coil load **6.3** Tons
Total coil load **75.6** MBH
Sensible coil load **50.9** MBH
Coil CFM at Jun 1400 **1206** CFM
Max block CFM **1206** CFM
Sum of peak zone CFM **1206** CFM
Sensible heat ratio **0.673**
ft²/Ton **52.3**
BTU/(hr-ft²) **229.3**
Water flow @ 10.0 °F rise **N/A**

Load occurs at **Jun 1400**
OA DB / WB **93.8 / 72.8** °F
Entering DB / WB **93.8 / 72.8** °F
Leaving DB / WB **54.7 / 53.1** °F
Coil ADP **50.3** °F
Bypass Factor **0.100**
Resulting RH **49** %
Design supply temp. **55.0** °F
Zone T-stat Check **1 of 1** OK
Max zone temperature deviation **0.0** °F

Central Heating Coil Sizing Data

Max coil load **7.1** MBH
Coil CFM at Nov 0400 **1206** CFM
Max coil CFM **1206** CFM
Water flow @ 20.0 °F drop **N/A**

Load occurs at **Nov 0400**
BTU/(hr-ft²) **21.7**
Ent. DB / Lvg DB **53.4 / 58.9** °F

Supply Fan Sizing Data

Actual max CFM **1206** CFM
Standard CFM **1202** CFM
Actual max CFM/ft² **3.66** CFM/ft²

Fan motor BHP **0.83** BHP
Fan motor kW **0.65** kW
Fan static **2.50** in wg

Outdoor Ventilation Air Data

Design airflow CFM **1206** CFM
CFM/ft² **3.66** CFM/ft²

CFM/person **200.98** CFM/person

Zone Sizing Summary for 01.UMA-CQ-01

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

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05:08p. m.

Air System Information

Air System Name **01.UMA-CQ-01**
Equipment Class **SPLT AHU**
Air System Type **SZCAV**

Number of zones **1**
Floor Area **329.7** ft²
Location **San Salvador, El Salvador**

Sizing Calculation Information

Calculation Months **Jan to Dec**
Sizing Data **Calculated**

Zone CFM Sizing **Sum of space airflow rates**
Space CFM Sizing **Individual peak space loads**

Zone Sizing Data

Zone Name	Maximum Cooling Sensible (MBH)	Design Airflow (CFM)	Minimum Airflow (CFM)	Time of Peak Load	Maximum Heating Load (MBH)	Zone Floor Area (ft ²)	Zone CFM/ft ²
Zone 1	22.1	1206	1206	Aug 1300	0.2	329.7	3.66

Zone Terminal Sizing Data

No Zone Terminal Sizing Data required for this system.

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft ²)	Space CFM/ft ²
Zone 1							
01.CQ-Quirofano #1	1	22.1	Aug 1300	1206	0.2	329.7	3.66

Air System Design Load Summary for 01.UMA-CQ-01

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1400			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 93.8 °F / 72.8 °F			HEATING OA DB / WB 66.4 °F / 55.5 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	330 ft²	3316	-	330 ft²	155	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	330 ft²	0	-	330 ft²	0	-
Partitions	733 ft²	3939	-	733 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	818 W	2790	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	1649 W	5625	-	0	0	-
People	6	1680	1620	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	4295	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	21645	1620	-	155	0
Zone Conditioning	-	21540	1620	-	-303	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	1206 CFM	0	-	1206 CFM	0	-
Ventilation Load	1206 CFM	27112	23093	1206 CFM	2538	0
Supply Fan Load	1206 CFM	2235	-	1206 CFM	-2235	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	50887	24713	-	0	0
Central Cooling Coil	-	50887	24713	-	0	0
Central Heating Coil	-	0	-	-	0	-
>> Total Conditioning	-	50887	24713	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for 02.UMA-CQ-02

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

Air System Information

Air System Name **02.UMA-CQ-02**
Equipment Class **SPLT AHU**
Air System Type **SZCAV**

Number of zones **1**
Floor Area **329.5** ft²
Location **San Salvador, El Salvador**

Sizing Calculation Information

Calculation Months **Jan to Dec**
Sizing Data **Calculated**

Zone CFM Sizing **Sum of space airflow rates**
Space CFM Sizing **Individual peak space loads**

Central Cooling Coil Sizing Data

Total coil load **6.3** Tons
Total coil load **75.9** MBH
Sensible coil load **52.2** MBH
Coil CFM at Jul 1400 **1205** CFM
Max block CFM **1205** CFM
Sum of peak zone CFM **1205** CFM
Sensible heat ratio **0.687**
ft²/Ton **52.1**
BTU/(hr-ft²) **230.5**
Water flow @ 10.0 °F rise **N/A**

Load occurs at **Jul 1400**
OA DB / WB **94.8 / 72.8** °F
Entering DB / WB **94.8 / 72.8** °F
Leaving DB / WB **54.6 / 52.9** °F
Coil ADP **50.2** °F
Bypass Factor **0.100**
Resulting RH **49** %
Design supply temp. **55.0** °F
Zone T-stat Check **1 of 1** OK
Max zone temperature deviation **0.0** °F

Central Heating Coil Sizing Data

Max coil load **7.3** MBH
Coil CFM at Dec 0500 **1205** CFM
Max coil CFM **1205** CFM
Water flow @ 20.0 °F drop **N/A**

Load occurs at **Dec 0500**
BTU/(hr-ft²) **22.1**
Ent. DB / Lvg DB **53.6 / 59.3** °F

Supply Fan Sizing Data

Actual max CFM **1205** CFM
Standard CFM **1202** CFM
Actual max CFM/ft² **3.66** CFM/ft²

Fan motor BHP **0.83** BHP
Fan motor kW **0.65** kW
Fan static **2.50** in wg

Outdoor Ventilation Air Data

Design airflow CFM **1205** CFM
CFM/ft² **3.66** CFM/ft²

CFM/person **200.91** CFM/person

Zone Sizing Summary for 02.UMA-CQ-02

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

Air System Information

Air System Name **02.UMA-CQ-02**
Equipment Class **SPLT AHU**
Air System Type **SZCAV**

Number of zones **1**
Floor Area **329.5** ft²
Location **San Salvador, El Salvador**

Sizing Calculation Information

Calculation Months **Jan to Dec**
Sizing Data **Calculated**

Zone CFM Sizing **Sum of space airflow rates**
Space CFM Sizing **Individual peak space loads**

Zone Sizing Data

Zone Name	Maximum Cooling Sensible (MBH)	Design Airflow (CFM)	Minimum Airflow (CFM)	Time of Peak Load	Maximum Heating Load (MBH)	Zone Floor Area (ft ²)	Zone CFM/ft ²
Zone 1	22.1	1205	1205	Aug 1300	0.2	329.5	3.66

Zone Terminal Sizing Data

No Zone Terminal Sizing Data required for this system.

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft ²)	Space CFM/ft ²
Zone 1							
02.CQ-Quirofano #2	1	22.1	Aug 1300	1205	0.2	329.5	3.66

Air System Design Load Summary for 02.UMA-CQ-02

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

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	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1400			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 94.8 °F / 72.8 °F			HEATING OA DB / WB 66.4 °F / 55.5 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	330 ft²	3409	-	330 ft²	154	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	330 ft²	0	-	330 ft²	0	-
Partitions	733 ft²	3984	-	733 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	817 W	2788	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	1648 W	5621	-	0	0	-
People	6	1680	1620	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	4295	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	21777	1620	-	154	0
Zone Conditioning	-	21660	1620	-	-303	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	1205 CFM	0	-	1205 CFM	0	-
Ventilation Load	1205 CFM	28316	22118	1205 CFM	2537	0
Supply Fan Load	1205 CFM	2234	-	1205 CFM	-2234	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	52211	23738	-	0	0
Central Cooling Coil	-	52211	23738	-	0	0
Central Heating Coil	-	0	-	-	0	-
>> Total Conditioning	-	52211	23738	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for 03.UMA-CQ-03

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

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Air System Information

Air System Name **03.UMA-CQ-03**
Equipment Class **SPLT AHU**
Air System Type **SZCAV**

Number of zones **1**
Floor Area **329.7** ft²
Location **San Salvador, El Salvador**

Sizing Calculation Information

Calculation Months **Jan to Dec**
Sizing Data **Calculated**

Zone CFM Sizing **Sum of space airflow rates**
Space CFM Sizing **Individual peak space loads**

Central Cooling Coil Sizing Data

Total coil load **6.3** Tons
Total coil load **75.6** MBH
Sensible coil load **50.9** MBH
Coil CFM at Jun 1400 **1206** CFM
Max block CFM **1206** CFM
Sum of peak zone CFM **1206** CFM
Sensible heat ratio **0.673**
ft²/Ton **52.3**
BTU/(hr-ft²) **229.3**
Water flow @ 10.0 °F rise **N/A**

Load occurs at **Jun 1400**
OA DB / WB **93.8 / 72.8** °F
Entering DB / WB **93.8 / 72.8** °F
Leaving DB / WB **54.7 / 53.1** °F
Coil ADP **50.3** °F
Bypass Factor **0.100**
Resulting RH **49** %
Design supply temp. **55.0** °F
Zone T-stat Check **1 of 1** OK
Max zone temperature deviation **0.0** °F

Central Heating Coil Sizing Data

Max coil load **7.1** MBH
Coil CFM at Nov 0400 **1206** CFM
Max coil CFM **1206** CFM
Water flow @ 20.0 °F drop **N/A**

Load occurs at **Nov 0400**
BTU/(hr-ft²) **21.7**
Ent. DB / Lvg DB **53.4 / 58.9** °F

Supply Fan Sizing Data

Actual max CFM **1206** CFM
Standard CFM **1202** CFM
Actual max CFM/ft² **3.66** CFM/ft²

Fan motor BHP **0.83** BHP
Fan motor kW **0.65** kW
Fan static **2.50** in wg

Outdoor Ventilation Air Data

Design airflow CFM **1206** CFM
CFM/ft² **3.66** CFM/ft²

CFM/person **200.98** CFM/person

Zone Sizing Summary for 03.UMA-CQ-03

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

Air System Information

Air System Name **03.UMA-CQ-03**
Equipment Class **SPLT AHU**
Air System Type **SZCAV**

Number of zones **1**
Floor Area **329.7** ft²
Location **San Salvador, El Salvador**

Sizing Calculation Information

Calculation Months **Jan to Dec**
Sizing Data **Calculated**

Zone CFM Sizing **Sum of space airflow rates**
Space CFM Sizing **Individual peak space loads**

Zone Sizing Data

Zone Name	Maximum Cooling Sensible (MBH)	Design Airflow (CFM)	Minimum Airflow (CFM)	Time of Peak Load	Maximum Heating Load (MBH)	Zone Floor Area (ft ²)	Zone CFM/ft ²
Zone 1	22.1	1206	1206	Aug 1300	0.2	329.7	3.66

Zone Terminal Sizing Data

No Zone Terminal Sizing Data required for this system.

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft ²)	Space CFM/ft ²
Zone 1							
03.CQ-Quirofano #3	1	22.1	Aug 1300	1206	0.2	329.7	3.66

Air System Design Load Summary for 03.UMA-CQ-03

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1400			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 93.8 °F / 72.8 °F			HEATING OA DB / WB 66.4 °F / 55.5 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	330 ft²	3316	-	330 ft²	155	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	330 ft²	0	-	330 ft²	0	-
Partitions	733 ft²	3939	-	733 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	818 W	2790	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	1649 W	5625	-	0	0	-
People	6	1680	1620	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	4295	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	21645	1620	-	155	0
Zone Conditioning	-	21540	1620	-	-303	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	1206 CFM	0	-	1206 CFM	0	-
Ventilation Load	1206 CFM	27112	23093	1206 CFM	2538	0
Supply Fan Load	1206 CFM	2235	-	1206 CFM	-2235	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	50887	24713	-	0	0
Central Cooling Coil	-	50887	24713	-	0	0
Central Heating Coil	-	0	-	-	0	-
>> Total Conditioning	-	50887	24713	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for 04.UMA-CQ-04

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

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05:08p. m.

Air System Information

Air System Name **04.UMA-CQ-04**
Equipment Class **SPLT AHU**
Air System Type **SZCAV**

Number of zones **1**
Floor Area **329.5** ft²
Location **San Salvador, El Salvador**

Sizing Calculation Information

Calculation Months **Jan to Dec**
Sizing Data **Calculated**

Zone CFM Sizing **Sum of space airflow rates**
Space CFM Sizing **Individual peak space loads**

Central Cooling Coil Sizing Data

Total coil load **6.3** Tons
Total coil load **75.9** MBH
Sensible coil load **52.2** MBH
Coil CFM at Jul 1400 **1205** CFM
Max block CFM **1205** CFM
Sum of peak zone CFM **1205** CFM
Sensible heat ratio **0.687**
ft²/Ton **52.1**
BTU/(hr-ft²) **230.5**
Water flow @ 10.0 °F rise **N/A**

Load occurs at **Jul 1400**
OA DB / WB **94.8 / 72.8** °F
Entering DB / WB **94.8 / 72.8** °F
Leaving DB / WB **54.6 / 52.9** °F
Coil ADP **50.2** °F
Bypass Factor **0.100**
Resulting RH **49** %
Design supply temp. **55.0** °F
Zone T-stat Check **1 of 1** OK
Max zone temperature deviation **0.0** °F

Central Heating Coil Sizing Data

Max coil load **7.3** MBH
Coil CFM at Dec 0500 **1205** CFM
Max coil CFM **1205** CFM
Water flow @ 20.0 °F drop **N/A**

Load occurs at **Dec 0500**
BTU/(hr-ft²) **22.1**
Ent. DB / Lvg DB **53.6 / 59.3** °F

Supply Fan Sizing Data

Actual max CFM **1205** CFM
Standard CFM **1202** CFM
Actual max CFM/ft² **3.66** CFM/ft²

Fan motor BHP **0.83** BHP
Fan motor kW **0.65** kW
Fan static **2.50** in wg

Outdoor Ventilation Air Data

Design airflow CFM **1205** CFM
CFM/ft² **3.66** CFM/ft²

CFM/person **200.91** CFM/person

Zone Sizing Summary for 04.UMA-CQ-04

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

Air System Information

Air System Name **04.UMA-CQ-04**
Equipment Class **SPLT AHU**
Air System Type **SZCAV**

Number of zones **1**
Floor Area **329.5** ft²
Location **San Salvador, El Salvador**

Sizing Calculation Information

Calculation Months **Jan to Dec**
Sizing Data **Calculated**

Zone CFM Sizing **Sum of space airflow rates**
Space CFM Sizing **Individual peak space loads**

Zone Sizing Data

Zone Name	Maximum Cooling Sensible (MBH)	Design Airflow (CFM)	Minimum Airflow (CFM)	Time of Peak Load	Maximum Heating Load (MBH)	Zone Floor Area (ft ²)	Zone CFM/ft ²
Zone 1	22.1	1205	1205	Aug 1300	0.2	329.5	3.66

Zone Terminal Sizing Data

No Zone Terminal Sizing Data required for this system.

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft ²)	Space CFM/ft ²
Zone 1							
04.CQ-Quirofano #4	1	22.1	Aug 1300	1205	0.2	329.5	3.66

Air System Design Load Summary for 04.UMA-CQ-04

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1400			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 94.8 °F / 72.8 °F			HEATING OA DB / WB 66.4 °F / 55.5 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	330 ft²	3409	-	330 ft²	154	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	330 ft²	0	-	330 ft²	0	-
Partitions	733 ft²	3984	-	733 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	817 W	2788	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	1648 W	5621	-	0	0	-
People	6	1680	1620	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	4295	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	21777	1620	-	154	0
Zone Conditioning	-	21660	1620	-	-303	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	1205 CFM	0	-	1205 CFM	0	-
Ventilation Load	1205 CFM	28316	22118	1205 CFM	2537	0
Supply Fan Load	1205 CFM	2234	-	1205 CFM	-2234	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	52211	23738	-	0	0
Central Cooling Coil	-	52211	23738	-	0	0
Central Heating Coil	-	0	-	-	0	-
>> Total Conditioning	-	52211	23738	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for 05.UMA-CQ-05

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

Air System Information

Air System Name **05.UMA-CQ-05**
Equipment Class **SPLT AHU**
Air System Type **SZCAV**

Number of zones **1**
Floor Area **755.7** ft²
Location **San Salvador, El Salvador**

Sizing Calculation Information

Calculation Months **Jan to Dec**
Sizing Data **Calculated**

Zone CFM Sizing **Sum of space airflow rates**
Space CFM Sizing **Individual peak space loads**

Central Cooling Coil Sizing Data

Total coil load **8.9** Tons
Total coil load **107.1** MBH
Sensible coil load **81.7** MBH
Coil CFM at Aug 1500 **2469** CFM
Max block CFM **2469** CFM
Sum of peak zone CFM **2469** CFM
Sensible heat ratio **0.763**
ft²/Ton **84.7**
BTU/(hr-ft²) **141.7**
Water flow @ 10.0 °F rise **N/A**

Load occurs at **Aug 1500**
OA DB / WB **95.4 / 73.0** °F
Entering DB / WB **84.0 / 67.2** °F
Leaving DB / WB **53.3 / 52.5** °F
Coil ADP **51.6** °F
Bypass Factor **0.050**
Resulting RH **50** %
Design supply temp. **55.0** °F
Zone T-stat Check **1 of 1** OK
Max zone temperature deviation **0.0** °F

Central Heating Coil Sizing Data

Max coil load **30.9** MBH
Coil CFM at Dec 0600 **2469** CFM
Max coil CFM **2469** CFM
Water flow @ 20.0 °F drop **N/A**

Load occurs at **Dec 0600**
BTU/(hr-ft²) **40.9**
Ent. DB / Lvg DB **52.9 / 64.5** °F

Supply Fan Sizing Data

Actual max CFM **2469** CFM
Standard CFM **2461** CFM
Actual max CFM/ft² **3.27** CFM/ft²

Fan motor BHP **1.69** BHP
Fan motor kW **1.34** kW
Fan static **2.50** in wg

Outdoor Ventilation Air Data

Design airflow CFM **1234** CFM
CFM/ft² **1.63** CFM/ft²

CFM/person **102.86** CFM/person

Zone Sizing Summary for 05.UMA-CQ-05

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

Air System Information

Air System Name **05.UMA-CQ-05**
Equipment Class **SPLT AHU**
Air System Type **SZCAV**

Number of zones **1**
Floor Area **755.7** ft²
Location **San Salvador, El Salvador**

Sizing Calculation Information

Calculation Months **Jan to Dec**
Sizing Data **Calculated**

Zone CFM Sizing **Sum of space airflow rates**
Space CFM Sizing **Individual peak space loads**

Zone Sizing Data

Zone Name	Maximum Cooling Sensible (MBH)	Design Airflow (CFM)	Minimum Airflow (CFM)	Time of Peak Load	Maximum Heating Load (MBH)	Zone Floor Area (ft ²)	Zone CFM/ft ²
Zone 1	30.7	2469	2469	Jul 1400	0.9	755.7	3.27

Zone Terminal Sizing Data

No Zone Terminal Sizing Data required for this system.

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft ²)	Space CFM/ft ²
Zone 1							
05.CQ-Recup. Anestesia	1	30.7	Jul 1400	2469	0.9	755.7	3.27

Air System Design Load Summary for 05.UMA-CQ-05

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1500 COOLING OA DB / WB 95.4 °F / 73.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 66.4 °F / 55.5 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	572 ft²	4266	-	572 ft²	530	-
Roof Transmission	756 ft²	6888	-	756 ft²	354	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	756 ft²	0	-	756 ft²	0	-
Partitions	572 ft²	3110	-	572 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	907 W	3094	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	620 W	2115	-	0	0	-
People	12	3360	3240	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	7340	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	30173	3240	-	884	0
Zone Conditioning	-	30145	3240	-	525	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	2469 CFM	0	-	2469 CFM	0	-
Ventilation Load	1234 CFM	30330	22146	1234 CFM	3917	0
Supply Fan Load	2469 CFM	4575	-	2469 CFM	-4575	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	65049	25386	-	-133	0
Central Cooling Coil	-	81696	25386	-	0	0
Central Heating Coil	-	-16647	-	-	0	-
>> Total Conditioning	-	65049	25386	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for 06.UMA-CQ-06

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

Air System Information

Air System Name **06.UMA-CQ-06**
Equipment Class **SPLT AHU**
Air System Type **SZCAV**

Number of zones **1**
Floor Area **969.1** ft²
Location **San Salvador, El Salvador**

Sizing Calculation Information

Calculation Months **Jan to Dec**
Sizing Data **Calculated**

Zone CFM Sizing **Sum of space airflow rates**
Space CFM Sizing **Individual peak space loads**

Central Cooling Coil Sizing Data

Total coil load **5.0** Tons
Total coil load **59.4** MBH
Sensible coil load **46.3** MBH
Coil CFM at Aug 1400 **1520** CFM
Max block CFM **1520** CFM
Sum of peak zone CFM **1520** CFM
Sensible heat ratio **0.778**
ft²/Ton **195.7**
BTU/(hr-ft²) **61.3**
Water flow @ 10.0 °F rise **N/A**

Load occurs at **Aug 1400**
OA DB / WB **94.8 / 72.8** °F
Entering DB / WB **84.1 / 67.3** °F
Leaving DB / WB **55.8 / 54.3** °F
Coil ADP **52.7** °F
Bypass Factor **0.100**
Resulting RH **50** %
Design supply temp. **55.0** °F
Zone T-stat Check **1 of 1** OK
Max zone temperature deviation **0.0** °F

Central Heating Coil Sizing Data

Max coil load **11.6** MBH
Coil CFM at Jan 0500 **1520** CFM
Max coil CFM **1520** CFM
Water flow @ 20.0 °F drop **N/A**

Load occurs at **Jan 0500**
BTU/(hr-ft²) **11.9**
Ent. DB / Lvg DB **57.0 / 64.1** °F

Supply Fan Sizing Data

Actual max CFM **1520** CFM
Standard CFM **1515** CFM
Actual max CFM/ft² **1.57** CFM/ft²

Fan motor BHP **1.04** BHP
Fan motor kW **0.83** kW
Fan static **2.50** in wg

Outdoor Ventilation Air Data

Design airflow CFM **760** CFM
CFM/ft² **0.78** CFM/ft²

CFM/person **0.00** CFM/person

Zone Sizing Summary for 06.UMA-CQ-06

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

Air System Information

Air System Name **06.UMA-CQ-06**
Equipment Class **SPLT AHU**
Air System Type **SZCAV**

Number of zones **1**
Floor Area **969.1** ft²
Location **San Salvador, El Salvador**

Sizing Calculation Information

Calculation Months **Jan to Dec**
Sizing Data **Calculated**

Zone CFM Sizing **Sum of space airflow rates**
Space CFM Sizing **Individual peak space loads**

Zone Sizing Data

Zone Name	Maximum Cooling Sensible (MBH)	Design Airflow (CFM)	Minimum Airflow (CFM)	Time of Peak Load	Maximum Heating Load (MBH)	Zone Floor Area (ft ²)	Zone CFM/ft ²
Zone 1	27.8	1520	1520	Aug 1300	0.5	969.1	1.57

Zone Terminal Sizing Data

No Zone Terminal Sizing Data required for this system.

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft ²)	Space CFM/ft ²
Zone 1							
06.CQ-Pasillo Blanco	1	27.8	Aug 1300	1520	0.5	969.1	1.57

Air System Design Load Summary for 06.UMA-CQ-06

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1400 COOLING OA DB / WB 94.8 °F / 72.8 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 66.4 °F / 55.5 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	969 ft²	10195	-	969 ft²	454	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	969 ft²	0	-	969 ft²	0	-
Partitions	2083 ft²	11321	-	2083 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1163 W	3968	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	485 W	1653	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	27136	0	-	454	0
Zone Conditioning	-	25810	0	-	150	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	1520 CFM	0	-	1520 CFM	0	-
Ventilation Load	760 CFM	17632	13165	760 CFM	2637	0
Supply Fan Load	1520 CFM	2817	-	1520 CFM	-2817	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	46258	13165	-	-29	0
Central Cooling Coil	-	46258	13166	-	0	0
Central Heating Coil	-	0	-	-	0	-
>> Total Conditioning	-	46258	13166	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for 07.UMA-CQ-07

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

Air System Information

Air System Name **07.UMA-CQ-07**
Equipment Class **SPLT AHU**
Air System Type **SZCAV**

Number of zones **1**
Floor Area **1052.3** ft²
Location **San Salvador, El Salvador**

Sizing Calculation Information

Calculation Months **Jan to Dec**
Sizing Data **Calculated**

Zone CFM Sizing **Sum of space airflow rates**
Space CFM Sizing **Individual peak space loads**

Central Cooling Coil Sizing Data

Total coil load **5.5** Tons
Total coil load **66.4** MBH
Sensible coil load **51.0** MBH
Coil CFM at Jul 1300 **1683** CFM
Max block CFM **1683** CFM
Sum of peak zone CFM **1683** CFM
Sensible heat ratio **0.768**
ft²/Ton **190.1**
BTU/(hr-ft²) **63.1**
Water flow @ 10.0 °F rise **N/A**

Load occurs at **Jul 1300**
OA DB / WB **93.4 / 72.4** °F
Entering DB / WB **83.3 / 66.9** °F
Leaving DB / WB **55.1 / 53.7** °F
Coil ADP **52.0** °F
Bypass Factor **0.100**
Resulting RH **49** %
Design supply temp. **55.0** °F
Zone T-stat Check **1 of 1** OK
Max zone temperature deviation **0.0** °F

Central Heating Coil Sizing Data

Max coil load **13.2** MBH
Coil CFM at Dec 0600 **1683** CFM
Max coil CFM **1683** CFM
Water flow @ 20.0 °F drop **N/A**

Load occurs at **Dec 0600**
BTU/(hr-ft²) **12.6**
Ent. DB / Lvg DB **57.1 / 64.4** °F

Supply Fan Sizing Data

Actual max CFM **1683** CFM
Standard CFM **1678** CFM
Actual max CFM/ft² **1.60** CFM/ft²

Fan motor BHP **1.15** BHP
Fan motor kW **0.91** kW
Fan static **2.50** in wg

Outdoor Ventilation Air Data

Design airflow CFM **841** CFM
CFM/ft² **0.80** CFM/ft²

CFM/person **0.00** CFM/person

Zone Sizing Summary for 07.UMA-CQ-07

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

Air System Information

Air System Name **07.UMA-CQ-07**
Equipment Class **SPLT AHU**
Air System Type **SZCAV**

Number of zones **1**
Floor Area **1052.3** ft²
Location **San Salvador, El Salvador**

Sizing Calculation Information

Calculation Months **Jan to Dec**
Sizing Data **Calculated**

Zone CFM Sizing **Sum of space airflow rates**
Space CFM Sizing **Individual peak space loads**

Zone Sizing Data

Zone Name	Maximum Cooling Sensible (MBH)	Design Airflow (CFM)	Minimum Airflow (CFM)	Time of Peak Load	Maximum Heating Load (MBH)	Zone Floor Area (ft ²)	Zone CFM/ft ²
Zone 1	30.8	1683	1683	Jul 1300	0.7	1052.3	1.60

Zone Terminal Sizing Data

No Zone Terminal Sizing Data required for this system.

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft ²)	Space CFM/ft ²
Zone 1							
08.CQ-Admision y transfe	1	18.2	Jul 1300	994	0.5	654.8	1.52
07.CQ-P.Gris, camillas	1	12.6	Jul 1300	689	0.2	397.5	1.73

Air System Design Load Summary for 07.UMA-CQ-07

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1300			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 93.4 °F / 72.4 °F			HEATING OA DB / WB 66.4 °F / 55.5 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	208 ft²	1097	-	208 ft²	193	-
Roof Transmission	1052 ft²	11838	-	1052 ft²	493	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	1052 ft²	0	-	1052 ft²	0	-
Partitions	2169 ft²	11768	-	2169 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1263 W	4308	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	526 W	1795	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	30806	0	-	687	0
Zone Conditioning	-	29580	0	-	232	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	1683 CFM	0	-	1683 CFM	0	-
Ventilation Load	841 CFM	18327	15391	841 CFM	2842	0
Supply Fan Load	1683 CFM	3119	-	1683 CFM	-3119	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	51025	15391	-	-45	0
Central Cooling Coil	-	51025	15392	-	0	0
Central Heating Coil	-	0	-	-	0	-
>> Total Conditioning	-	51025	15392	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for 09.UMA-CQ-08

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

Air System Information

Air System Name **09.UMA-CQ-08**
Equipment Class **SPLT AHU**
Air System Type **SZCAV**

Number of zones **1**
Floor Area **246.5** ft²
Location **San Salvador, El Salvador**

Sizing Calculation Information

Calculation Months **Jan to Dec**
Sizing Data **Calculated**

Zone CFM Sizing **Sum of space airflow rates**
Space CFM Sizing **Individual peak space loads**

Central Cooling Coil Sizing Data

Total coil load **0.9** Tons
Total coil load **10.6** MBH
Sensible coil load **10.0** MBH
Coil CFM at Jul 1300 **491** CFM
Max block CFM **491** CFM
Sum of peak zone CFM **491** CFM
Sensible heat ratio **0.943**
ft²/Ton **279.6**
BTU/(hr-ft²) **42.9**
Water flow @ 10.0 °F rise **N/A**

Load occurs at **Jul 1300**
OA DB / WB **93.4 / 72.4** °F
Entering DB / WB **74.0 / 61.6** °F
Leaving DB / WB **55.1 / 53.9** °F
Coil ADP **53.0** °F
Bypass Factor **0.100**
Resulting RH **50** %
Design supply temp. **55.0** °F
Zone T-stat Check **1 of 1** OK
Max zone temperature deviation **0.0** °F

Central Heating Coil Sizing Data

Max coil load **4.2** MBH
Coil CFM at Jan 0500 **491** CFM
Max coil CFM **491** CFM
Water flow @ 20.0 °F drop **N/A**

Load occurs at **Jan 0500**
BTU/(hr-ft²) **17.1**
Ent. DB / Lvg DB **57.0 / 65.0** °F

Supply Fan Sizing Data

Actual max CFM **491** CFM
Standard CFM **490** CFM
Actual max CFM/ft² **1.99** CFM/ft²

Fan motor BHP **0.34** BHP
Fan motor kW **0.27** kW
Fan static **2.50** in wg

Outdoor Ventilation Air Data

Design airflow CFM **20** CFM
CFM/ft² **0.08** CFM/ft²

CFM/person **19.79** CFM/person

Zone Sizing Summary for 09.UMA-CQ-08

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

Air System Information

Air System Name **09.UMA-CQ-08**
Equipment Class **SPLT AHU**
Air System Type **SZCAV**

Number of zones **1**
Floor Area **246.5** ft²
Location **San Salvador, El Salvador**

Sizing Calculation Information

Calculation Months **Jan to Dec**
Sizing Data **Calculated**

Zone CFM Sizing **Sum of space airflow rates**
Space CFM Sizing **Individual peak space loads**

Zone Sizing Data

Zone Name	Maximum Cooling Sensible (MBH)	Design Airflow (CFM)	Minimum Airflow (CFM)	Time of Peak Load	Maximum Heating Load (MBH)	Zone Floor Area (ft ²)	Zone CFM/ft ²
Zone 1	9.0	491	491	Aug 1200	0.3	246.5	1.99

Zone Terminal Sizing Data

No Zone Terminal Sizing Data required for this system.

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft ²)	Space CFM/ft ²
Zone 1							
09.CQ-Bod. Mat. Esteril	1	9.0	Aug 1200	491	0.3	246.5	1.99

Air System Design Load Summary for 09.UMA-CQ-08

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1300			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 93.4 °F / 72.4 °F			HEATING OA DB / WB 66.4 °F / 55.5 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	187 ft²	1774	-	187 ft²	174	-
Roof Transmission	247 ft²	2773	-	247 ft²	116	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	247 ft²	0	-	247 ft²	0	-
Partitions	442 ft²	2401	-	442 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	296 W	1009	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	200 W	682	-	0	0	-
People	1	280	270	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	8919	270	-	289	0
Zone Conditioning	-	8632	270	-	201	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	491 CFM	0	-	491 CFM	0	-
Ventilation Load	20 CFM	430	337	20 CFM	69	0
Supply Fan Load	491 CFM	910	-	491 CFM	-910	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	9973	607	-	-640	0
Central Cooling Coil	-	9973	608	-	-640	0
Central Heating Coil	-	0	-	-	0	-
>> Total Conditioning	-	9973	608	-	-640	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for A.UE-AM-01

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

Air System Information

Air System Name **A.UE-AM-01**
Equipment Class **TERM**
Air System Type **SPLT-FC**

Number of zones **1**
Floor Area **148.5** ft²
Location **San Salvador, El Salvador**

Sizing Calculation Information

Calculation Months **Jan to Dec**
Sizing Data **Calculated**

Zone CFM Sizing **Sum of space airflow rates**
Space CFM Sizing **Individual peak space loads**

Zone Sizing Summary for A.UE-AM-01

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

Air System Information

Air System Name **A.UE-AM-01**
Equipment Class **TERM**
Air System Type **SPLT-FC**

Number of zones **1**
Floor Area **148.5** ft²
Location **San Salvador, El Salvador**

Sizing Calculation Information

Calculation Months **Jan to Dec**
Sizing Data **Calculated**

Zone CFM Sizing **Sum of space airflow rates**
Space CFM Sizing **Individual peak space loads**

Zone Sizing Data

Zone Name	Maximum Cooling Sensible (MBH)	Design Airflow (CFM)	Minimum Airflow (CFM)	Time of Peak Load	Maximum Heating Load (MBH)	Zone Floor Area (ft ²)	Zone CFM/ft ²
Zone 1	8.8	482	482	Jun 1400	0.2	148.5	3.24

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (MBH)	Sens Coil Load (MBH)	Coil Entering DB / WB (°F)	Coil Leaving DB / WB (°F)	Water Flow @ 10.0 °F (gpm)	Time of Peak Load
Zone 1	11.6	9.6	75.8 / 64.3	57.3 / 56.3	-	Jun 1400

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (MBH)	Heating Coil Ent/Lvg DB (°F)	Htg Coil Water Flow @20.0 °F (gpm)	Fan Design Airflow (CFM)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (CFM)
Zone 1	0.0	-1.0 / -1.0	0.00	482	0.071	0.057	44

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft ²)	Space CFM/ft ²
Zone 1							
11.OM-Of. Jefatura M.	1	8.8	Jun 1400	482	0.2	148.5	3.24

Air System Design Load Summary for A.UE-AM-01

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1400			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 93.8 °F / 72.8 °F			HEATING OA DB / WB 66.4 °F / 55.5 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	17 ft²	639	-	17 ft²	-	-
Wall Transmission	85 ft²	661	-	85 ft²	79	-
Roof Transmission	149 ft²	1549	-	149 ft²	70	-
Window Transmission	17 ft²	323	-	17 ft²	63	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	149 ft²	0	-	149 ft²	0	-
Partitions	383 ft²	2060	-	383 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	178 W	608	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	370 W	1262	-	0	0	-
People	7	1715	1435	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	8818	1435	-	212	0
Zone Conditioning	-	8449	1435	-	45	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Exhaust Fan Load	0 CFM	0	-	0 CFM	0	-
Ventilation Load	44 CFM	956	522	44 CFM	126	0
Ventilation Fan Load	0 CFM	0	-	0 CFM	0	-
Space Fan Coil Fans	-	193	-	-	-193	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	9598	1957	-	-22	0
Terminal Unit Cooling	-	9598	1961	-	0	0
Terminal Unit Heating	-	0	-	-	0	-
>> Total Conditioning	-	9598	1961	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for B.UE-AM-02

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

Air System Information

Air System Name **B.UE-AM-02**
Equipment Class **TERM**
Air System Type **SPLT-FC**

Number of zones **1**
Floor Area **198.1** ft²
Location **San Salvador, El Salvador**

Sizing Calculation Information

Calculation Months **Jan to Dec**
Sizing Data **Calculated**

Zone CFM Sizing **Sum of space airflow rates**
Space CFM Sizing **Individual peak space loads**

Zone Sizing Summary for B.UE-AM-02

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

Air System Information

Air System Name **B.UE-AM-02**
Equipment Class **TERM**
Air System Type **SPLT-FC**

Number of zones **1**
Floor Area **198.1** ft²
Location **San Salvador, El Salvador**

Sizing Calculation Information

Calculation Months **Jan to Dec**
Sizing Data **Calculated**

Zone CFM Sizing **Sum of space airflow rates**
Space CFM Sizing **Individual peak space loads**

Zone Sizing Data

Zone Name	Maximum Cooling Sensible (MBH)	Design Airflow (CFM)	Minimum Airflow (CFM)	Time of Peak Load	Maximum Heating Load (MBH)	Zone Floor Area (ft ²)	Zone CFM/ft ²
Zone 1	9.5	519	519	Jun 1400	0.3	198.1	2.62

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (MBH)	Sens Coil Load (MBH)	Coil Entering DB / WB (°F)	Coil Leaving DB / WB (°F)	Water Flow @ 10.0 °F (gpm)	Time of Peak Load
Zone 1	11.7	10.2	75.0 / 63.4	56.8 / 55.7	-	Jun 1300

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (MBH)	Heating Coil Ent/Lvg DB (°F)	Htg Coil Water Flow @20.0 °F (gpm)	Fan Design Airflow (CFM)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (CFM)
Zone 1	0.0	-1.0 / -1.0	0.00	519	0.077	0.061	37

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft ²)	Space CFM/ft ²
Zone 1							
12.OM-Of. Jefatura E	1	9.5	Jun 1400	519	0.3	198.1	2.62

Air System Design Load Summary for B.UE-AM-02

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1300 COOLING OA DB / WB 92.4 °F / 72.4 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 66.4 °F / 55.5 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	17 ft²	611	-	17 ft²	-	-
Wall Transmission	120 ft²	851	-	120 ft²	111	-
Roof Transmission	198 ft²	2195	-	198 ft²	93	-
Window Transmission	17 ft²	302	-	17 ft²	63	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	198 ft²	0	-	198 ft²	0	-
Partitions	418 ft²	2239	-	418 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	238 W	811	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	370 W	1262	-	0	0	-
People	5	1225	1025	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	9496	1025	-	267	0
Zone Conditioning	-	9204	1025	-	72	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Exhaust Fan Load	0 CFM	0	-	0 CFM	0	-
Ventilation Load	37 CFM	760	512	37 CFM	107	0
Ventilation Fan Load	0 CFM	0	-	0 CFM	0	-
Space Fan Coil Fans	-	208	-	-	-208	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	10172	1537	-	-28	0
Terminal Unit Cooling	-	10172	1530	-	0	0
Terminal Unit Heating	-	0	-	-	0	-
>> Total Conditioning	-	10172	1530	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for C.UE-AM-03

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

Air System Information

Air System Name **C.UE-AM-03**
Equipment Class **TERM**
Air System Type **SPLT-FC**

Number of zones **1**
Floor Area **234.3** ft²
Location **San Salvador, El Salvador**

Sizing Calculation Information

Calculation Months **Jan to Dec**
Sizing Data **Calculated**

Zone CFM Sizing **Sum of space airflow rates**
Space CFM Sizing **Individual peak space loads**

Zone Sizing Summary for C.UE-AM-03

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

Air System Information

Air System Name **C.UE-AM-03**
Equipment Class **TERM**
Air System Type **SPLT-FC**

Number of zones **1**
Floor Area **234.3** ft²
Location **San Salvador, El Salvador**

Sizing Calculation Information

Calculation Months **Jan to Dec**
Sizing Data **Calculated**

Zone CFM Sizing **Sum of space airflow rates**
Space CFM Sizing **Individual peak space loads**

Zone Sizing Data

Zone Name	Maximum Cooling Sensible (MBH)	Design Airflow (CFM)	Minimum Airflow (CFM)	Time of Peak Load	Maximum Heating Load (MBH)	Zone Floor Area (ft ²)	Zone CFM/ft ²
Zone 1	12.9	702	702	Jun 1400	0.4	234.3	3.00

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (MBH)	Sens Coil Load (MBH)	Coil Entering DB / WB (°F)	Coil Leaving DB / WB (°F)	Water Flow @ 10.0 °F (gpm)	Time of Peak Load
Zone 1	17.2	14.2	75.1 / 63.6	56.3 / 55.2	-	Jun 1300

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (MBH)	Heating Coil Ent/Lvg DB (°F)	Htg Coil Water Flow @20.0 °F (gpm)	Fan Design Airflow (CFM)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (CFM)
Zone 1	0.0	-1.0 / -1.0	0.00	702	0.104	0.082	64

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft ²)	Space CFM/ft ²
Zone 1							
10.OM-Estar Medicos	1	12.9	Jun 1400	702	0.4	234.3	3.00

Air System Design Load Summary for C.UE-AM-03

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1300			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 92.4 °F / 72.4 °F			HEATING OA DB / WB 66.4 °F / 55.5 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	34 ft²	1222	-	34 ft²	-	-
Wall Transmission	127 ft²	907	-	127 ft²	118	-
Roof Transmission	234 ft²	2596	-	234 ft²	110	-
Window Transmission	34 ft²	604	-	34 ft²	126	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	234 ft²	0	-	234 ft²	0	-
Partitions	443 ft²	2374	-	443 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	281 W	959	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	500 W	1706	-	0	0	-
People	10	2450	2050	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	12818	2050	-	354	0
Zone Conditioning	-	12613	2050	-	74	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Exhaust Fan Load	0 CFM	0	-	0 CFM	0	-
Ventilation Load	64 CFM	1336	872	64 CFM	171	0
Ventilation Fan Load	0 CFM	0	-	0 CFM	0	-
Space Fan Coil Fans	-	281	-	-	-281	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	14230	2922	-	-36	0
Terminal Unit Cooling	-	14230	2926	-	0	0
Terminal Unit Heating	-	0	-	-	0	-
>> Total Conditioning	-	14230	2926	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for D.UE-AM-04

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

Air System Information

Air System Name **D.UE-AM-04**
Equipment Class **TERM**
Air System Type **SPLT-FC**

Number of zones **1**
Floor Area **127.6** ft²
Location **San Salvador, El Salvador**

Sizing Calculation Information

Calculation Months **Jan to Dec**
Sizing Data **Calculated**

Zone CFM Sizing **Sum of space airflow rates**
Space CFM Sizing **Individual peak space loads**

Zone Sizing Summary for D.UE-AM-04

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

Air System Information

Air System Name **D.UE-AM-04**
Equipment Class **TERM**
Air System Type **SPLT-FC**

Number of zones **1**
Floor Area **127.6** ft²
Location **San Salvador, El Salvador**

Sizing Calculation Information

Calculation Months **Jan to Dec**
Sizing Data **Calculated**

Zone CFM Sizing **Sum of space airflow rates**
Space CFM Sizing **Individual peak space loads**

Zone Sizing Data

Zone Name	Maximum Cooling Sensible (MBH)	Design Airflow (CFM)	Minimum Airflow (CFM)	Time of Peak Load	Maximum Heating Load (MBH)	Zone Floor Area (ft ²)	Zone CFM/ft ²
Zone 1	7.3	399	399	Aug 1200	0.1	127.6	3.13

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (MBH)	Sens Coil Load (MBH)	Coil Entering DB / WB (°F)	Coil Leaving DB / WB (°F)	Water Flow @ 10.0 °F (gpm)	Time of Peak Load
Zone 1	9.2	7.8	75.3 / 63.9	57.2 / 56.1	-	Aug 1200

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (MBH)	Heating Coil Ent/Lvg DB (°F)	Htg Coil Water Flow @20.0 °F (gpm)	Fan Design Airflow (CFM)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (CFM)
Zone 1	0.0	-1.0 / -1.0	0.00	399	0.059	0.047	33

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft ²)	Space CFM/ft ²
Zone 1							
13.OM-Of. Anestesista	1	7.3	Aug 1200	399	0.1	127.6	3.13

Air System Design Load Summary for D.UE-AM-04

Project Name: HNNS - Quirofanos
Prepared by: JA Consultores

07/26/2021
05:08p. m.

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1200			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 91.1 °F / 71.8 °F			HEATING OA DB / WB 66.4 °F / 55.5 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	97 ft²	957	-	97 ft²	90	-
Roof Transmission	128 ft²	1436	-	128 ft²	60	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	128 ft²	0	-	128 ft²	0	-
Partitions	352 ft²	1907	-	352 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	153 W	522	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	370 W	1262	-	0	0	-
People	5	1225	1025	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	7310	1025	-	150	0
Zone Conditioning	-	7016	1025	-	40	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Exhaust Fan Load	0 CFM	0	-	0 CFM	0	-
Ventilation Load	33 CFM	620	372	33 CFM	101	0
Ventilation Fan Load	0 CFM	0	-	0 CFM	0	-
Space Fan Coil Fans	-	160	-	-	-160	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	7795	1397	-	-19	0
Terminal Unit Cooling	-	7795	1402	-	0	0
Terminal Unit Heating	-	0	-	-	0	-
>> Total Conditioning	-	7795	1402	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

MEMORIA DE CÁLCULO DE AIRE ACONDICIONADO

SELECCIÓN DE EQUIPOS

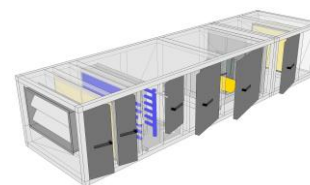
Proyecto

ADECUACION DE AREA PARA QUIROFANOS EN EL HOSPITAL SALDAÑA

Propietario

Hospital Nacional General de Neumología y Medicina Familiar
Saldaña "Dr. José Antonio Saldaña" (Neumológico)

Job Information		Technical Data Sheet
Job Name	HNNS	
Date	29 July 2021	
Submitted By	JA	
Software Version	12.52	
Unit Tag	UMA-CQ-01	



Unit Overview						
Model Number	Supply					
	Air Volume cfm	Static Pressure		External Dimensions		
		External inWc	Total inWc	Height in	Width in	Length in
CAH005GDAM	1205	0.70	4.10	32*	44*	164

*Not including base rails, coil connectors, drain connectors and control boxes.

Unit			
Model Number:	CAH005GDAM		
Approval:	ETL Listed / ETL Listed to Canadian Safety Standards (ETL Label / ETLc Label)		
Construction:	High pressure low leakage construction		
Max. Design Leakage:	Meets or exceeds ASHRAE 111 Class 6 at design static pressure up to +/-8" wc		
Outer Panel:	24 gauge G90 Galvanized Steel (unpainted)		
Liner:	24 gauge Galvanized Steel (unless noted per section)		
Insulation:	R-13 Injected Foam		
Unit Configuration:	Inline horizontal	Drive (Handling) Location:	Right
Base:	None	Wall Thickness:	2 in
Altitude:	2170 ft	Parts Warranty:	Standard One Year

Mixing Box		Component: 1			Length: 14 in		Shipping Section: 1	
Portion	Damper				Blade Action	Rated CFM	Air Pressure Drop	Quantity
	Size (length x width)		Location	Type				
	Overall	Opening						
Outside Air	20 in x 40 in	16 in x 30 in	End	UltraSeal Low Leak	Parallel	1205 cfm	0.01 insWg	1
Return Air	No opening	No opening		None	Opposed	1205 cfm		1
Door								
Location			Width			Opening		
Drive side			10 in			Outward		

Panel Filter		Component: 2		Length: 12 in		Shipping Section: 1	
Type	Efficiency	Face Velocity	Face Area	Air Volume	Filter Loading		
Pleated	MERV 8	190 ft/min	6.3 ft²	1205 cfm	Side		
Air Pressure Drop			Number of Filters	Height	Width	Depth	
Clean Air	Mean Air	Dirty Air					
0.06 inWc	0.53 inWc	1.00 inWc	2	24 in	20 in	2 in	
Door							
Location			Width		Opening		
Drive side			8 in		Outward		

Direct Expansion Coil		Component: 3			Length: 28 in		Shipping Section: 1				
Coil Model	Total Capacity	Sensible Capacity	Number of Coils		Number of Rows	Fins per Inch	Tube Diameter	Tube Spacing (Face x Row)			
5EJ1106B	79409 Btu/hr	49126 Btu/hr	1		6	11	0.625 in	1.50 in x 1.299 in			
Air Volume	Air Temperature				Coil Air Pressure Drop	Finned Height	Finned Length	Face Area	Face Velocity		
	Entering		Leaving								
	Dry Bulb	Wet Bulb	Dry Bulb	Wet Bulb							
1205 cfm	93.8 °F	72.8 °F	53.4 °F	51.9 °F	0.33 insWg	21 in	31 in	4.52 ft²	267 ft/min		
Fluid			Sub-Cooled Refrigerant Liquid Temp.		Suction Vapor Superheat Temp. at Coil Outlet		Design Saturated Condensing Temp.		Total Refrigerant Weight		
Suction Temp.	Refrigerant										
44.0 °F		R410a		110.0 °F		8.0 °F		110.0 °F		15.00 lb	
Connection [Data Per Coil]							Min. Fin Surface Temp.		Min. Tube Wall Surface Temp.		
Type	Liquid [Qty - Size]	Suction [Qty - Size]	Location		Material						
OD Sweat	1-0.63 in / 1-0.88		2-1.63 in		Drive side		Copper tube		32.0 °F		32.0 °F
Material						Drain Pan		Drain Side			
Fin	Tube		Header		Case						
Aluminum .0075 in		Copper .020 in		Copper		Galv. steel		Stainless steel		Drive side	
AHRI 410 Certification											
Coil is NOT certified by AHRI											
Door											
Location				Width				Opening			
Drive side				12 in				Outward			
Access Section		Component: 4			Length: 24 in			Shipping Section: 1			
Air Pressure Drop											
0.00 inWc											
Door											
Location				Width				Opening			
Drive side				20 in				Outward			

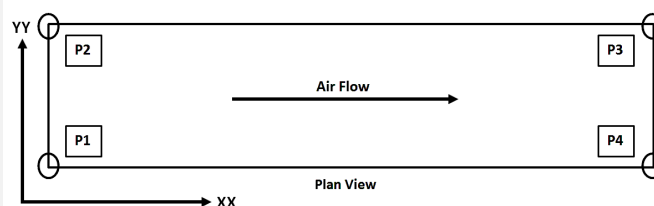
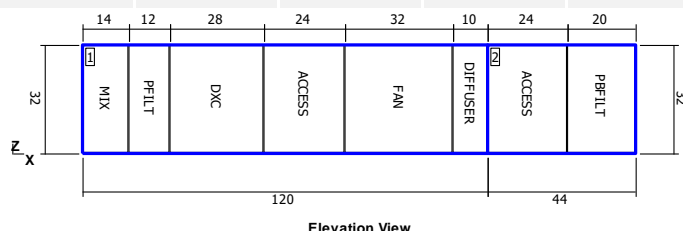
Supply Fan		Component: 5			Length: 32 in		Shipping Section: 1		
Fan Performance									
Air Volume	Static Pressure			Fan Energy Index(FEI)	Total Input Power	Fan Shaft Power	Speed		Outlet Velocity
	External	Total	Cabinet				Operating	Maximum	
1205 cfm	0.70 inWc	4.10 inWc	0.00 inWc	1.47	1.5 kW	1.56 BHP	2422 rpm	2854 rpm	1565 ft/min
Fan Data									
Fan Type	Blade Type / Class		Quantity of Fans	Wheel Diameter	Number of Blades		Discharge		Motor Location
Centrifugal DWDI	Forward Curved / 2		1	9.50 in	N/A		Top horizontal		To Side of Fan
Motor Data									
Power	Electrical Supply	Speed	Efficiency	Enclosure	Frame Size	Supplier	Number of Poles	Lock Rotor Current	Full Load Current
2.0 HP	230/60/3 V/Hz/Phase	1750 rpm	Premium	ODP	145 T frame	Generic	4	42.65 A	5.80 A
Fan Options									
Isolator Type:		Rubber in shear							
Drive Package Data*									
Fan Sheave	Motor Sheave		Belt		Number of Belts		Actual Drive S.F.		Bearing Type
AK32H	AK46H		A27		1		1.21		Standard - L50 (200K)
*Daikin Applied reserves the right to provide a different but equivalent drive package									
Door									
Location			Width			Opening			
Drive side			28 in			Outward			
Diffuser		Component: 6			Length: 10 in		Shipping Section: 1		
Type					Air Pressure Drop				
Perforated plate					0.15 inWc				
Panel									
Location			Width			Opening			
Removable panels			- in			Outward			
Access Section		Component: 7			Length: 24 in		Shipping Section: 2		
Air Pressure Drop									
0.00 inWc									
Door									
Location			Width			Opening			
Drive side			20 in			Outward			
Combination Filter		Component: 8			Length: 20 in		Shipping Section: 2		
Access		Face Velocity			Face Area		Air Volume		
Front		301 ft/min			4.0 ft²		1205 cfm		
Portion	Type	Efficiency	Air Pressure Drop			Number of Filters	Height	Width	Depth
			Clean Air	Mean Air	Dirty Air				
Pre-Filter	Pre Pleat	MERV 13	0.17 inWc	0.59 inWc	1.00 inWc	1	24 in	24 in	2 in
Filter	HEPA	MERV 17 (99.97%)	0.77 inWc	1.79 inWc	2.80 inWc	1	24 in	24 in	12 in
Special Options									
Filter Gauge									
Minihelic II 0-2"									

Unit Sound Power (dB)

Type	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
Radiated:	73	73	62	58	57	52	46	51
Unit Discharge:	79	80	75	73	72	71	64	60
Unit Return:	74	73	66	66	65	66	60	55

Shipping Section Details

Section	Length in	Weight lb	Corner Weights (lb)				Center of Gravity (in)		
			P1	P2	P3	P4	XX	YY	ZZ
1	120	920	250	215	210	245	59	20	15
2	44	233	53	53	63	63	24	22	16
Entire Unit	164	1153	325	290	251	286	76	21	15



NOTE: Special components aren't included in the corner weights and center of gravity data.

Supply Static Pressure Drop

Component	Option	Static Pressure Drop
Mixing Box	Mixing Box	0.01 insWg
Panel Filter	Panel Filter	0.53 insWg
DX Coil	DX Coil	0.33 insWg
Access Section	Access Section	-
Supply Fan	Cabinet	-
Diffuser	Diffuser	0.15 insWg
Access Section	Access Section	-
Panel and Bag Filter	Panel and Bag Filter	2.37 insWg
External Static	External Static	0.70 insWg
Total Supply Static		4.10 insWg

AHRI Certification



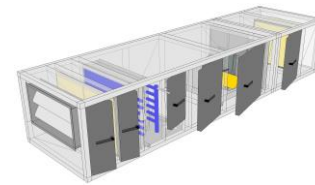
Certified in accordance with the AHRI Central Station Air-Handling Unit Certification Program, which is based on AHRI Standards 430/431. Certified units may be found in the AHRI Directory at www.ahridirectory.org.

Notes

Standard

- As a standalone component, unit meets or exceeds requirements of ASHRAE 90.1 - 2016. The approving authority is responsible for compliance of multi - component building systems.

Job Information		Technical Data Sheet
Job Name	HNNS	
Date	29 July 2021	
Submitted By	JA	
Software Version	12.52	
Unit Tag	UMA-CQ-02	



Unit Overview						
Model Number	Supply					
	Air Volume cfm	Static Pressure		External Dimensions		
		External inWc	Total inWc	Height in	Width in	Length in
CAH005GDAM	1205	0.70	4.27	32*	44*	164
*Not including base rails, coil connectors, drain connectors and control boxes.						

Unit			
Model Number:	CAH005GDAM		
Approval:	ETL Listed / ETL Listed to Canadian Safety Standards (ETL Label / ETLc Label)		
Construction:	High pressure low leakage construction		
Max. Design Leakage:	Meets or exceeds ASHRAE 111 Class 6 at design static pressure up to +/-8" wc		
Outer Panel:	24 gauge G90 Galvanized Steel (unpainted)		
Liner:	24 gauge Galvanized Steel (unless noted per section)		
Insulation:	R-13 Injected Foam		
Unit Configuration:	Inline horizontal	Drive (Handling) Location:	Right
Base:	None	Wall Thickness:	2 in
Altitude:	2170 ft	Parts Warranty:	Standard One Year

Mixing Box		Component: 1		Length: 14 in		Shipping Section: 1		
Portion	Damper			Blade Action	Rated CFM	Air Pressure Drop	Quantity	
	Size (length x width)		Location					Type
	Overall	Opening						
Outside Air	20 in x 40 in	16 in x 30 in	End	UltraSeal Low Leak	Parallel	1205 cfm	0.01 insWg	1
Return Air	No opening	No opening		None	Opposed	1205 cfm		1
Door								
Location			Width			Opening		
Drive side			10 in			Outward		

Panel Filter		Component: 2		Length: 12 in		Shipping Section: 1	
Type	Efficiency	Face Velocity	Face Area	Air Volume	Filter Loading		
Pleated	MERV 8	190 ft/min	6.3 ft²	1205 cfm	Side		
Air Pressure Drop			Number of Filters	Height	Width	Depth	
Clean Air	Mean Air	Dirty Air					
0.06 inWc	0.53 inWc	1.00 inWc	2	24 in	20 in	2 in	
Door							
Location			Width		Opening		
Drive side			8 in		Outward		

Direct Expansion Coil		Component: 3			Length: 28 in		Shipping Section: 1				
Coil Model	Total Capacity	Sensible Capacity	Number of Coils		Number of Rows	Fins per Inch	Tube Diameter	Tube Spacing (Face x Row)			
5EJ1006C	80681 Btu/hr	50898 Btu/hr	1		6	10	0.625 in	1.50 in x 1.299 in			
Air Volume	Air Temperature				Coil Air Pressure Drop	Finned Height	Finned Length	Face Area	Face Velocity		
	Entering		Leaving								
	Dry Bulb	Wet Bulb	Dry Bulb	Wet Bulb							
1205 cfm	94.8 °F	72.8 °F	52.9 °F	51.4 °F	0.50 insWg	21 in	31 in	4.52 ft²	267 ft/min		
Fluid			Sub-Cooled Refrigerant Liquid Temp.		Suction Vapor Superheat Temp. at Coil Outlet		Design Saturated Condensing Temp.		Total Refrigerant Weight		
Suction Temp.		Refrigerant									
44.0 °F		R410a		110.0 °F		8.0 °F		110.0 °F		15.00 lb	
Connection [Data Per Coil]							Min. Fin Surface Temp.		Min. Tube Wall Surface Temp.		
Type	Liquid [Qty - Size]		Suction [Qty - Size]		Location						Material
OD Sweat	1-0.63 in / 1-0.88		2-1.63 in		Drive side		Copper tube		32.0 °F		32.0 °F
Material						Drain Pan		Drain Side			
Fin		Tube		Header							Case
Aluminum .0075 in		Copper .020 in		Copper		Galv. steel		Stainless steel		Drive side	
AHRI 410 Certification											
Coil is NOT certified by AHRI											
Door											
Location				Width				Opening			
Drive side				12 in				Outward			
Access Section		Component: 4			Length: 24 in			Shipping Section: 1			
Air Pressure Drop											
0.00 inWc											
Door											
Location				Width				Opening			
Drive side				20 in				Outward			

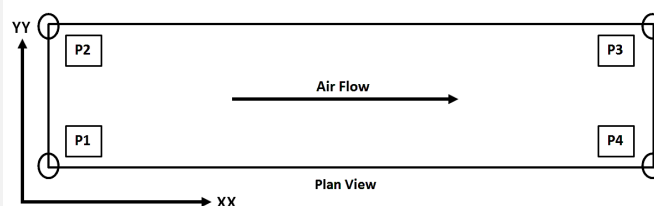
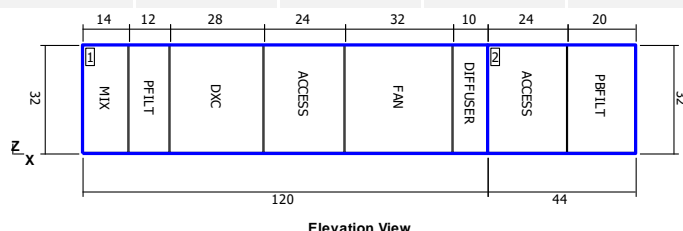
Supply Fan		Component: 5			Length: 32 in		Shipping Section: 1		
Fan Performance									
Air Volume	Static Pressure			Fan Energy Index(FEI)	Total Input Power	Fan Shaft Power	Speed		Outlet Velocity
	External	Total	Cabinet				Operating	Maximum	
1205 cfm	0.70 inWc	4.27 inWc	0.00 inWc	1.45	1.5 kW	1.64 BHP	2476 rpm	2854 rpm	1565 ft/min
Fan Data									
Fan Type	Blade Type / Class		Quantity of Fans	Wheel Diameter	Number of Blades		Discharge		Motor Location
Centrifugal DWDI	Forward Curved / 2		1	9.50 in	N/A		Top horizontal		To Side of Fan
Motor Data									
Power	Electrical Supply	Speed	Efficiency	Enclosure	Frame Size	Supplier	Number of Poles	Lock Rotor Current	Full Load Current
2.0 HP	230/60/3 V/Hz/Phase	1750 rpm	Premium	ODP	145 T frame	Generic	4	42.65 A	5.80 A
Fan Options									
Isolator Type:		Rubber in shear							
Drive Package Data*									
Fan Sheave	Motor Sheave		Belt		Number of Belts		Actual Drive S.F.		Bearing Type
AK32H	AK46H		A27		1		1.22		Standard - L50 (200K)
*Daikin Applied reserves the right to provide a different but equivalent drive package									
Door									
Location			Width			Opening			
Drive side			28 in			Outward			
Diffuser		Component: 6			Length: 10 in		Shipping Section: 1		
Type					Air Pressure Drop				
Perforated plate					0.15 inWc				
Panel									
Location			Width			Opening			
Removable panels			- in			Outward			
Access Section		Component: 7			Length: 24 in		Shipping Section: 2		
Air Pressure Drop									
0.00 inWc									
Door									
Location			Width			Opening			
Drive side			20 in			Outward			
Combination Filter		Component: 8			Length: 20 in		Shipping Section: 2		
Access		Face Velocity			Face Area		Air Volume		
Front		301 ft/min			4.0 ft²		1205 cfm		
Portion	Type	Efficiency	Air Pressure Drop			Number of Filters	Height	Width	Depth
			Clean Air	Mean Air	Dirty Air				
Pre-Filter	Pre Pleat	MERV 13	0.17 inWc	0.59 inWc	1.00 inWc	1	24 in	24 in	2 in
Filter	HEPA	MERV 17 (99.97%)	0.77 inWc	1.79 inWc	2.80 inWc	1	24 in	24 in	12 in
Special Options									
Filter Gauge									
Minihelic II 0-2"									

Unit Sound Power (dB)

Type	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
Radiated:	73	73	62	58	57	52	46	51
Unit Discharge:	79	80	75	73	72	71	64	60
Unit Return:	74	73	66	66	65	66	60	55

Shipping Section Details

Section	Length in	Weight lb	Corner Weights (lb)				Center of Gravity (in)		
			P1	P2	P3	P4	XX	YY	ZZ
1	120	916	249	214	209	244	59	20	15
2	44	233	53	53	63	63	24	22	16
Entire Unit	164	1149	324	289	250	285	77	21	15



NOTE: Special components aren't included in the corner weights and center of gravity data.

Supply Static Pressure Drop

Component	Option	Static Pressure Drop
Mixing Box	Mixing Box	0.01 insWg
Panel Filter	Panel Filter	0.53 insWg
DX Coil	DX Coil	0.50 insWg
Access Section	Access Section	-
Supply Fan	Cabinet	-
Diffuser	Diffuser	0.15 insWg
Access Section	Access Section	-
Panel and Bag Filter	Panel and Bag Filter	2.37 insWg
External Static	External Static	0.70 insWg
Total Supply Static		4.27 insWg

AHRI Certification



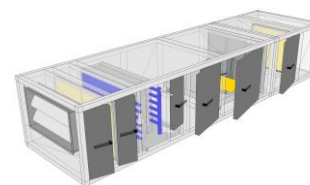
Certified in accordance with the AHRI Central Station Air-Handling Unit Certification Program, which is based on AHRI Standards 430/431. Certified units may be found in the AHRI Directory at www.ahridirectory.org.

Notes

Standard

- As a standalone component, unit meets or exceeds requirements of ASHRAE 90.1 - 2016. The approving authority is responsible for compliance of multi - component building systems.

Job Information		Technical Data Sheet
Job Name	HNNS	
Date	29 July 2021	
Submitted By	JA	
Software Version	12.52	
Unit Tag	UMA-CQ-03	



Unit Overview						
Model Number	Supply					
	Air Volume cfm	Static Pressure		External Dimensions		
		External inWc	Total inWc	Height in	Width in	Length in
CAH005GDAM	1205	0.70	4.29	32*	44*	164

*Not including base rails, coil connectors, drain connectors and control boxes.

Unit			
Model Number:	CAH005GDAM		
Approval:	ETL Listed / ETL Listed to Canadian Safety Standards (ETL Label / ETLc Label)		
Construction:	High pressure low leakage construction		
Max. Design Leakage:	Meets or exceeds ASHRAE 111 Class 6 at design static pressure up to +/-8" wc		
Outer Panel:	24 gauge G90 Galvanized Steel (unpainted)		
Liner:	24 gauge Galvanized Steel (unless noted per section)		
Insulation:	R-13 Injected Foam		
Unit Configuration:	Inline horizontal	Drive (Handling) Location:	Right
Base:	None	Wall Thickness:	2 in
Altitude:	2170 ft	Parts Warranty:	Standard One Year

Mixing Box		Component: 1			Length: 14 in		Shipping Section: 1	
Portion	Damper				Blade Action	Rated CFM	Air Pressure Drop	Quantity
	Size (length x width)		Location	Type				
	Overall	Opening						
Outside Air	20 in x 40 in	16 in x 30 in	End	UltraSeal Low Leak	Parallel	1205 cfm	0.01 insWg	1
Return Air	No opening	No opening		None	Opposed	1205 cfm		1
Door								
Location			Width			Opening		
Drive side			10 in			Outward		

Panel Filter		Component: 2		Length: 12 in		Shipping Section: 1	
Type	Efficiency	Face Velocity	Face Area	Air Volume	Filter Loading		
Pleated	MERV 8	190 ft/min	6.3 ft²	1205 cfm	Side		
Air Pressure Drop			Number of Filters	Height	Width	Depth	
Clean Air	Mean Air	Dirty Air					
0.06 inWc	0.53 inWc	1.00 inWc	2	24 in	20 in	2 in	
Door							
Location		Width			Opening		
Drive side		8 in			Outward		

Direct Expansion Coil		Component: 3			Length: 28 in		Shipping Section: 1		
Coil Model	Total Capacity	Sensible Capacity	Number of Coils	Number of Rows	Fins per Inch	Tube Diameter	Tube Spacing (Face x Row)		
5EJ0608C	80467 Btu/hr	49504 Btu/hr	1	8	6	0.625 in	1.50 in x 1.299 in		
Air Volume	Air Temperature				Coil Air Pressure Drop	Finned Height	Finned Length	Face Area	Face Velocity
	Entering		Leaving						
	Dry Bulb	Wet Bulb	Dry Bulb	Wet Bulb					
1205 cfm	93.8 °F	72.8 °F	53.1 °F	51.5 °F	0.52 insWg	21 in	31 in	4.52 ft²	267 ft/min
Fluid			Sub-Cooled Refrigerant Liquid Temp.		Suction Vapor Superheat Temp. at Coil Outlet		Design Saturated Condensing Temp.		Total Refrigerant Weight
Suction Temp.	Refrigerant								
44.0 °F	R410a	110.0 °F		8.0 °F		110.0 °F		20.00 lb	
Connection [Data Per Coil]							Min. Fin Surface Temp.		Min. Tube Wall Surface Temp.
Type	Liquid [Qty - Size]	Suction [Qty - Size]	Location	Material					
OD Sweat	1-0.63 in / 1-0.88	2-1.63 in	Drive side	Copper tube		32.0 °F		32.0 °F	
Material						Drain Pan		Drain Side	
Fin	Tube	Header	Case						
Aluminum .0075 in	Copper .020 in	Copper	Galv. steel		Stainless steel		Drive side		
AHRI 410 Certification									
Coil is NOT certified by AHRI									
Door									
Location			Width			Opening			
Drive side			8 in			Outward			
Access Section		Component: 4			Length: 24 in		Shipping Section: 1		
Air Pressure Drop									
0.00 inWc									
Door									
Location			Width			Opening			
Drive side			20 in			Outward			

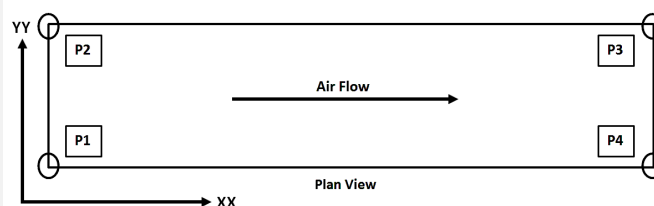
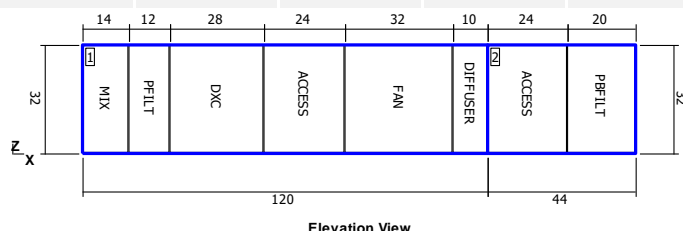
Supply Fan		Component: 5			Length: 32 in		Shipping Section: 1		
Fan Performance									
Air Volume	Static Pressure			Fan Energy Index(FEI)	Total Input Power	Fan Shaft Power	Speed		Outlet Velocity
	External	Total	Cabinet				Operating	Maximum	
1205 cfm	0.70 inWc	4.29 inWc	0.00 inWc	1.45	1.5 kW	1.65 BHP	2482 rpm	2854 rpm	1565 ft/min
Fan Data									
Fan Type	Blade Type / Class		Quantity of Fans	Wheel Diameter	Number of Blades		Discharge		Motor Location
Centrifugal DWDI	Forward Curved / 2		1	9.50 in	N/A		Top horizontal		To Side of Fan
Motor Data									
Power	Electrical Supply	Speed	Efficiency	Enclosure	Frame Size	Supplier	Number of Poles	Lock Rotor Current	Full Load Current
2.0 HP	230/60/3 V/Hz/Phase	1750 rpm	Premium	ODP	145 T frame	Generic	4	42.65 A	5.80 A
Fan Options									
Isolator Type:		Rubber in shear							
Drive Package Data*									
Fan Sheave	Motor Sheave		Belt		Number of Belts		Actual Drive S.F.		Bearing Type
AK34H	AK49H		A27		1		1.42		Standard - L50 (200K)
*Daikin Applied reserves the right to provide a different but equivalent drive package									
Door									
Location			Width			Opening			
Drive side			28 in			Outward			
Diffuser		Component: 6			Length: 10 in		Shipping Section: 1		
Type					Air Pressure Drop				
Perforated plate					0.15 inWc				
Panel									
Location			Width			Opening			
Removable panels			- in			Outward			
Access Section		Component: 7			Length: 24 in		Shipping Section: 2		
Air Pressure Drop									
0.00 inWc									
Door									
Location			Width			Opening			
Drive side			20 in			Outward			
Combination Filter		Component: 8			Length: 20 in		Shipping Section: 2		
Access		Face Velocity			Face Area		Air Volume		
Front		301 ft/min			4.0 ft²		1205 cfm		
Portion	Type	Efficiency	Air Pressure Drop			Number of Filters	Height	Width	Depth
			Clean Air	Mean Air	Dirty Air				
Pre-Filter	Pre Pleat	MERV 13	0.17 inWc	0.59 inWc	1.00 inWc	1	24 in	24 in	2 in
Filter	HEPA	MERV 17 (99.97%)	0.77 inWc	1.79 inWc	2.80 inWc	1	24 in	24 in	12 in
Special Options									
Filter Gauge									
Minihelic II 0-2"									

Unit Sound Power (dB)

Type	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
Radiated:	73	73	62	58	57	52	46	51
Unit Discharge:	79	80	75	73	72	71	64	60
Unit Return:	73	73	63	63	63	64	58	52

Shipping Section Details

Section	Length in	Weight lb	Corner Weights (lb)				Center of Gravity (in)		
			P1	P2	P3	P4	XX	YY	ZZ
1	120	930	253	218	212	248	59	20	15
2	44	233	53	53	63	63	24	22	16
Entire Unit	164	1163	329	293	252	288	76	21	15



NOTE: Special components aren't included in the corner weights and center of gravity data.

Supply Static Pressure Drop

Component	Option	Static Pressure Drop
Mixing Box	Mixing Box	0.01 insWg
Panel Filter	Panel Filter	0.53 insWg
DX Coil	DX Coil	0.52 insWg
Access Section	Access Section	-
Supply Fan	Cabinet	-
Diffuser	Diffuser	0.15 insWg
Access Section	Access Section	-
Panel and Bag Filter	Panel and Bag Filter	2.37 insWg
External Static	External Static	0.70 insWg
Total Supply Static		4.29 insWg

AHRI Certification



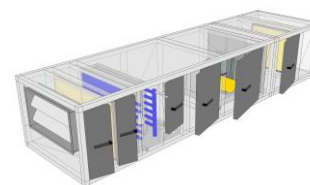
Certified in accordance with the AHRI Central Station Air-Handling Unit Certification Program, which is based on AHRI Standards 430/431. Certified units may be found in the AHRI Directory at www.ahridirectory.org.

Notes

Standard

1. As a standalone component, unit meets or exceeds requirements of ASHRAE 90.1 - 2016. The approving authority is responsible for compliance of multi - component building systems.

Job Information		Technical Data Sheet
Job Name	HNNS	
Date	29 July 2021	
Submitted By	JA	
Software Version	12.52	
Unit Tag	UMA-CQ-04	



Unit Overview						
Model Number	Supply					
	Air Volume cfm	Static Pressure		External Dimensions		
		External inWc	Total inWc	Height in	Width in	Length in
CAH005GDAM	1205	0.70	4.27	32*	44*	164

*Not including base rails, coil connectors, drain connectors and control boxes.

Unit			
Model Number:	CAH005GDAM		
Approval:	ETL Listed / ETL Listed to Canadian Safety Standards (ETL Label / ETLc Label)		
Construction:	High pressure low leakage construction		
Max. Design Leakage:	Meets or exceeds ASHRAE 111 Class 6 at design static pressure up to +/-8" wc		
Outer Panel:	24 gauge G90 Galvanized Steel (unpainted)		
Liner:	24 gauge Galvanized Steel (unless noted per section)		
Insulation:	R-13 Injected Foam		
Unit Configuration:	Inline horizontal	Drive (Handling) Location:	Right
Base:	None	Wall Thickness:	2 in
Altitude:	2170 ft	Parts Warranty:	Standard One Year

Mixing Box		Component: 1			Length: 14 in		Shipping Section: 1	
Portion	Damper				Blade Action	Rated CFM	Air Pressure Drop	Quantity
	Size (length x width)		Location	Type				
	Overall	Opening						
Outside Air	20 in x 40 in	16 in x 30 in	End	UltraSeal Low Leak	Parallel	1205 cfm	0.01 insWg	1
Return Air	No opening	No opening		None	Opposed	1205 cfm		1
Door								
Location			Width			Opening		
Drive side			10 in			Outward		

Panel Filter		Component: 2		Length: 12 in		Shipping Section: 1	
Type	Efficiency	Face Velocity	Face Area	Air Volume	Filter Loading		
Pleated	MERV 8	190 ft/min	6.3 ft²	1205 cfm	Side		
Air Pressure Drop			Number of Filters	Height	Width	Depth	
Clean Air	Mean Air	Dirty Air					
0.06 inWc	0.53 inWc	1.00 inWc	2	24 in	20 in	2 in	
Door							
Location		Width		Opening			
Drive side		8 in		Outward			

Direct Expansion Coil		Component: 3			Length: 28 in		Shipping Section: 1					
Coil Model	Total Capacity	Sensible Capacity	Number of Coils		Number of Rows	Fins per Inch	Tube Diameter	Tube Spacing (Face x Row)				
5EJ1006C	80681 Btu/hr	50898 Btu/hr	1		6	10	0.625 in	1.50 in x 1.299 in				
Air Volume	Air Temperature				Coil Air Pressure Drop	Finned Height	Finned Length	Face Area	Face Velocity			
	Entering		Leaving									
	Dry Bulb	Wet Bulb	Dry Bulb	Wet Bulb								
1205 cfm	94.8 °F	72.8 °F	52.9 °F	51.4 °F	0.50 insWg	21 in	31 in	4.52 ft²	267 ft/min			
Fluid			Sub-Cooled Refrigerant Liquid Temp.		Suction Vapor Superheat Temp. at Coil Outlet		Design Saturated Condensing Temp.		Total Refrigerant Weight			
Suction Temp.	Refrigerant											
44.0 °F		R410a		110.0 °F		8.0 °F		110.0 °F		15.00 lb		
Connection [Data Per Coil]							Min. Fin Surface Temp.		Min. Tube Wall Surface Temp.			
Type	Liquid [Qty - Size]	Suction [Qty - Size]	Location		Material							
OD Sweat	1-0.63 in / 1-0.88		2-1.63 in		Drive side		Copper tube		32.0 °F		32.0 °F	
Material						Drain Pan		Drain Side				
Fin	Tube		Header		Case							
Aluminum .0075 in		Copper .020 in		Copper		Galv. steel		Stainless steel		Drive side		
AHRI 410 Certification												
Coil is NOT certified by AHRI												
Door												
Location				Width				Opening				
Drive side				12 in				Outward				
Access Section		Component: 4			Length: 24 in			Shipping Section: 1				
Air Pressure Drop												
0.00 inWc												
Door												
Location				Width				Opening				
Drive side				20 in				Outward				

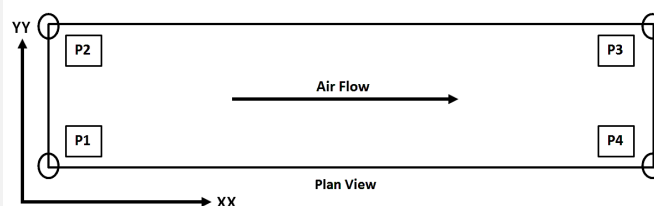
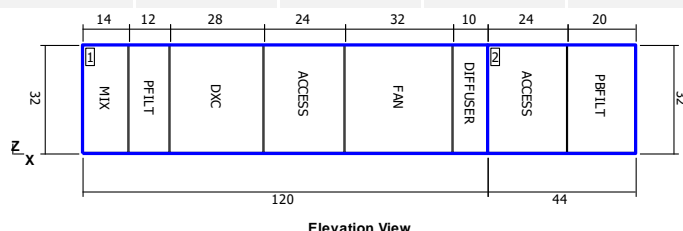
Supply Fan		Component: 5			Length: 32 in		Shipping Section: 1		
Fan Performance									
Air Volume	Static Pressure			Fan Energy Index(FEI)	Total Input Power	Fan Shaft Power	Speed		Outlet Velocity
	External	Total	Cabinet				Operating	Maximum	
1205 cfm	0.70 inWc	4.27 inWc	0.00 inWc	1.45	1.5 kW	1.64 BHP	2476 rpm	2854 rpm	1565 ft/min
Fan Data									
Fan Type	Blade Type / Class		Quantity of Fans	Wheel Diameter	Number of Blades		Discharge		Motor Location
Centrifugal DWDI	Forward Curved / 2		1	9.50 in	N/A		Top horizontal		To Side of Fan
Motor Data									
Power	Electrical Supply	Speed	Efficiency	Enclosure	Frame Size	Supplier	Number of Poles	Lock Rotor Current	Full Load Current
2.0 HP	230/60/3 V/Hz/Phase	1750 rpm	Premium	ODP	145 T frame	Generic	4	42.65 A	5.80 A
Fan Options									
Isolator Type:		Rubber in shear							
Drive Package Data*									
Fan Sheave	Motor Sheave		Belt		Number of Belts		Actual Drive S.F.		Bearing Type
AK32H	AK46H		A27		1		1.22		Standard - L50 (200K)
*Daikin Applied reserves the right to provide a different but equivalent drive package									
Door									
Location			Width			Opening			
Drive side			28 in			Outward			
Diffuser		Component: 6			Length: 10 in		Shipping Section: 1		
Type					Air Pressure Drop				
Perforated plate					0.15 inWc				
Panel									
Location			Width			Opening			
Removable panels			- in			Outward			
Access Section		Component: 7			Length: 24 in		Shipping Section: 2		
Air Pressure Drop									
0.00 inWc									
Door									
Location			Width			Opening			
Drive side			20 in			Outward			
Combination Filter		Component: 8			Length: 20 in		Shipping Section: 2		
Access		Face Velocity			Face Area		Air Volume		
Front		301 ft/min			4.0 ft²		1205 cfm		
Portion	Type	Efficiency	Air Pressure Drop			Number of Filters	Height	Width	Depth
			Clean Air	Mean Air	Dirty Air				
Pre-Filter	Pre Pleat	MERV 13	0.17 inWc	0.59 inWc	1.00 inWc	1	24 in	24 in	2 in
Filter	HEPA	MERV 17 (99.97%)	0.77 inWc	1.79 inWc	2.80 inWc	1	24 in	24 in	12 in
Special Options									
Filter Gauge									
Minihelic II 0-2"									

Unit Sound Power (dB)

Type	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
Radiated:	73	73	62	58	57	52	46	51
Unit Discharge:	79	80	75	73	72	71	64	60
Unit Return:	74	73	66	66	65	66	60	55

Shipping Section Details

Section	Length in	Weight lb	Corner Weights (lb)				Center of Gravity (in)		
			P1	P2	P3	P4	XX	YY	ZZ
1	120	916	249	214	209	244	59	20	15
2	44	233	53	53	63	63	24	22	16
Entire Unit	164	1149	324	289	250	285	77	21	15



NOTE: Special components aren't included in the corner weights and center of gravity data.

Supply Static Pressure Drop

Component	Option	Static Pressure Drop
Mixing Box	Mixing Box	0.01 insWg
Panel Filter	Panel Filter	0.53 insWg
DX Coil	DX Coil	0.50 insWg
Access Section	Access Section	-
Supply Fan	Cabinet	-
Diffuser	Diffuser	0.15 insWg
Access Section	Access Section	-
Panel and Bag Filter	Panel and Bag Filter	2.37 insWg
External Static	External Static	0.70 insWg
Total Supply Static		4.27 insWg

AHRI Certification



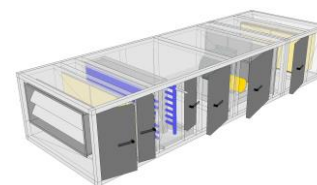
Certified in accordance with the AHRI Central Station Air-Handling Unit Certification Program, which is based on AHRI Standards 430/431. Certified units may be found in the AHRI Directory at www.ahridirectory.org.

Notes

Standard

- As a standalone component, unit meets or exceeds requirements of ASHRAE 90.1 - 2016. The approving authority is responsible for compliance of multi - component building systems.

Job Information		Technical Data Sheet
Job Name	HNNS	
Date	29 July 2021	
Submitted By	JA	
Software Version	12.52	
Unit Tag	UMA-CQ-05	



Unit Overview						
Model Number	Supply					
	Air Volume cfm	Static Pressure		External Dimensions		
		External inWc	Total inWc	Height in	Width in	Length in
CAH008GDAM	2490	0.70	4.56	34*	58*	176

**Not including base rails, coil connectors, drain connectors and control boxes.*

Unit			
Model Number:	CAH008GDAM		
Approval:	ETL Listed / ETL Listed to Canadian Safety Standards (ETL Label / ETLc Label)		
Construction:	High pressure low leakage construction		
Max. Design Leakage:	Meets or exceeds ASHRAE 111 Class 6 at design static pressure up to +/-8" wc		
Outer Panel:	24 gauge G90 Galvanized Steel (unpainted)		
Liner:	24 gauge Galvanized Steel (unless noted per section)		
Insulation:	R-13 Injected Foam		
Unit Configuration:	Inline horizontal	Drive (Handling) Location:	Right
Base:	None	Wall Thickness:	2 in
Altitude:	2170 ft	Parts Warranty:	Standard One Year

Mixing Box		Component: 1			Length: 20 in		Shipping Section: 1	
Portion	Damper				Blade Action	Rated CFM	Air Pressure Drop	Quantity
	Size (length x width)		Location	Type				
	Overall	Opening						
Outside Air	22 in x 54 in	18 in x 44 in	End	UltraSeal Low Leak	Parallel	2490 cfm	0.02 insWg	1
Return Air	No opening	No opening		None	Opposed	2490 cfm		1
Door								
Location			Width			Opening		
Drive side			16 in			Outward		

Panel Filter		Component: 2		Length: 12 in		Shipping Section: 1	
Type	Efficiency		Face Velocity	Face Area	Air Volume	Filter Loading	
Pleated	MERV 8		283 ft/min	8.8 ft²	2490 cfm	Side	
Air Pressure Drop			Number of Filters	Height	Width	Depth	
Clean Air	Mean Air	Dirty Air					
0.11 inWc	0.55 inWc	1.00 inWc	1	24 in	24 in	2 in	
			1	24 in	20 in	2 in	
			1	24 in	12 in	2 in	
Door							
Location			Width		Opening		
Drive side			8 in		Outward		

Direct Expansion Coil		Component: 3			Length: 28 in		Shipping Section: 1						
Coil Model	Total Capacity	Sensible Capacity	Number of Coils		Number of Rows	Fins per Inch	Tube Diameter	Tube Spacing (Face x Row)					
5EJ0608C	120418 Btu/hr	80313 Btu/hr	1		8	6	0.625 in	1.50 in x 1.299 in					
Air Volume	Air Temperature				Coil Air Pressure Drop	Finned Height	Finned Length	Face Area	Face Velocity				
	Entering		Leaving										
	Dry Bulb	Wet Bulb	Dry Bulb	Wet Bulb									
2490 cfm	84.0 °F	67.2 °F	52.0 °F	50.5 °F	0.75 insWg	24 in	45 in	7.50 ft²	332 ft/min				
Fluid			Sub-Cooled Refrigerant Liquid Temp.		Suction Vapor Superheat Temp. at Coil Outlet		Design Saturated Condensing Temp.		Total Refrigerant Weight				
Suction Temp.		Refrigerant											
44.0 °F		R410a		110.0 °F		8.0 °F		110.0 °F		32.00 lb			
Connection [Data Per Coil]							Min. Fin Surface Temp.		Min. Tube Wall Surface Temp.				
Type	Liquid [Qty - Size]		Suction [Qty - Size]	Location		Material							
OD Sweat		2-0.88 in		2-1.63 in		Drive side		Copper tube		32.0 °F		32.0 °F	
Material						Drain Pan			Drain Side				
Fin		Tube		Header	Case								
Aluminum .0075 in		Copper .020 in		Copper		Galv. steel		Stainless steel			Drive side		

AHRI 410 Certification

Coil is NOT certified by AHRI

Door							
Location			Width		Opening		
Drive side			8 in		Outward		

Access Section		Component: 4		Length: 24 in		Shipping Section: 1	
Air Pressure Drop							
0.00 inWc							
Door							
Location		Width			Opening		
Drive side		20 in			Outward		

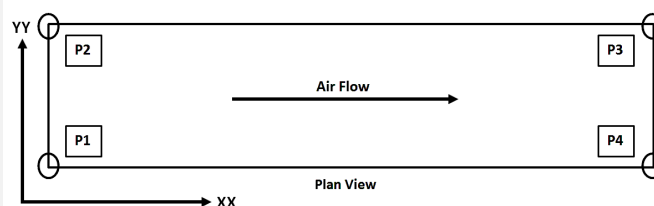
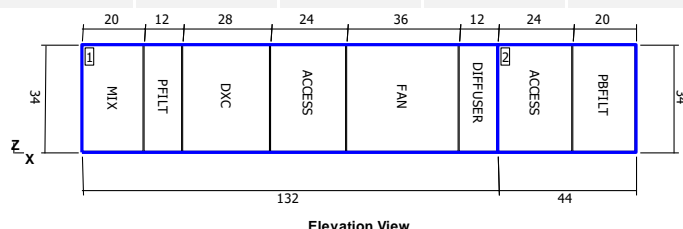
Supply Fan			Component: 5		Length: 36 in		Shipping Section: 1		
Fan Performance									
Air Volume	Static Pressure			Fan Energy Index(FEI)	Total Input Power	Fan Shaft Power	Speed		Outlet Velocity
	External	Total	Cabinet				Operating	Maximum	
2490 cfm	0.70 inWc	4.56 inWc	0.00 inWc	1.41	3.0 kW	3.40 BHP	2307 rpm	2518 rpm	2371 ft/min
Fan Data									
Fan Type	Blade Type / Class		Quantity of Fans	Wheel Diameter	Number of Blades		Discharge		Motor Location
Centrifugal DWDI	Forward Curved / 2		1	10.62 in	N/A		Top horizontal		To Side of Fan
Motor Data									
Power	Electrical Supply	Speed	Efficiency	Enclosure	Frame Size	Supplier	Number of Poles	Lock Rotor Current	Full Load Current
5.0 HP	230/60/3 V/Hz/Phase	1750 rpm	Premium	ODP	184 T frame	Generic	4	94.08 A	13.20 A
Fan Options									
Isolator Type:		Rubber in shear							
Drive Package Data*									
Fan Sheave	Motor Sheave		Belt		Number of Belts		Actual Drive S.F.		Bearing Type
AK54H	AK69H		A31		1		1.17		Standard - L50 (200K)
*Daikin Applied reserves the right to provide a different but equivalent drive package									
Door									
Location			Width			Opening			
Drive side			28 in			Outward			
Diffuser			Component: 6		Length: 12 in		Shipping Section: 1		
Type					Air Pressure Drop				
Perforated plate					0.15 inWc				
Panel									
Location			Width			Opening			
Removable panels			- in			Outward			
Access Section			Component: 7		Length: 24 in		Shipping Section: 2		
Air Pressure Drop									
0.00 inWc									
Door									
Location			Width			Opening			
Drive side			20 in			Outward			
Combination Filter			Component: 8		Length: 20 in		Shipping Section: 2		
Access		Face Velocity			Face Area		Air Volume		
Front		311 ft/min			8.0 ft²		2490 cfm		
Portion	Type	Efficiency	Air Pressure Drop			Number of Filters	Height	Width	Depth
			Clean Air	Mean Air	Dirty Air				
Pre-Filter	Pre Pleat	MERV 13	0.18 inWc	0.59 inWc	1.00 inWc	2	24 in	24 in	2 in
Filter	HEPA	MERV 17 (99.97%)	0.80 inWc	1.80 inWc	2.80 inWc	2	24 in	24 in	12 in
Special Options									
Filter Gauge									
Minihelic II 0-2"									

Unit Sound Power (dB)

Type	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
Radiated:	75	78	65	61	60	54	46	51
Unit Discharge:	81	85	78	76	75	73	66	62
Unit Return:	75	78	66	66	66	66	60	54

Shipping Section Details

Section	Length in	Weight lb	Corner Weights (lb)				Center of Gravity (in)		
			P1	P2	P3	P4	XX	YY	ZZ
1	132	1313	350	291	307	365	68	26	16
2	44	283	64	64	78	78	24	29	17
Entire Unit	176	1596	450	391	349	407	83	27	16



NOTE: Special components aren't included in the corner weights and center of gravity data.

Supply Static Pressure Drop

Component	Option	Static Pressure Drop
Mixing Box	Mixing Box	0.02 insWg
Panel Filter	Panel Filter	0.55 insWg
DX Coil	DX Coil	0.75 insWg
Access Section	Access Section	-
Supply Fan	Cabinet	-
Diffuser	Diffuser	0.15 insWg
Access Section	Access Section	-
Panel and Bag Filter	Panel and Bag Filter	2.39 insWg
External Static	External Static	0.70 insWg
Total Supply Static		4.56 insWg

AHRI Certification



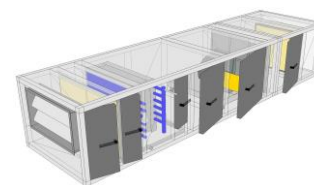
Certified in accordance with the AHRI Central Station Air-Handling Unit Certification Program, which is based on AHRI Standards 430/431. Certified units may be found in the AHRI Directory at www.ahridirectory.org.

Notes

Standard

1. As a standalone component, unit meets or exceeds requirements of ASHRAE 90.1 - 2016. The approving authority is responsible for compliance of multi - component building systems.

Job Information		Technical Data Sheet
Job Name	HNNS	
Date	29 July 2021	
Submitted By	JA	
Software Version	12.52	
Unit Tag	UMA-CQ-06	



Unit Overview						
Model Number	Supply					
	Air Volume cfm	Static Pressure		External Dimensions		
		External inWc	Total inWc	Height in	Width in	Length in
CAH005GDAM	1520	0.70	4.71	32*	44*	166

**Not including base rails, coil connectors, drain connectors and control boxes.*

Unit			
Model Number:	CAH005GDAM		
Approval:	ETL Listed / ETL Listed to Canadian Safety Standards (ETL Label / ETLc Label)		
Construction:	High pressure low leakage construction		
Max. Design Leakage:	Meets or exceeds ASHRAE 111 Class 6 at design static pressure up to +/-8" wc		
Outer Panel:	24 gauge G90 Galvanized Steel (unpainted)		
Liner:	24 gauge Galvanized Steel (unless noted per section)		
Insulation:	R-13 Injected Foam		
Unit Configuration:	Inline horizontal	Drive (Handling) Location:	Right
Base:	None	Wall Thickness:	2 in
Altitude:	2170 ft	Parts Warranty:	Standard One Year

Mixing Box		Component: 1			Length: 16 in		Shipping Section: 1	
Portion	Damper				Blade Action	Rated CFM	Air Pressure Drop	Quantity
	Size (length x width)		Location	Type				
	Overall	Opening						
Outside Air	20 in x 40 in	16 in x 30 in	End	UltraSeal Low Leak	Parallel	1520 cfm	0.02 insWg	1
Return Air	No opening	No opening		None	Opposed	1520 cfm		1
Door								
Location			Width			Opening		
Drive side			12 in			Outward		

Panel Filter		Component: 2		Length: 12 in		Shipping Section: 1	
Type	Efficiency		Face Velocity	Face Area	Air Volume	Filter Loading	
Pleated	MERV 8		240 ft/min	6.3 ft²	1520 cfm	Side	
Air Pressure Drop			Number of Filters	Height	Width	Depth	
Clean Air	Mean Air	Dirty Air					
0.09 inWc	0.54 inWc	1.00 inWc	2	24 in	20 in	2 in	
Door							
Location			Width		Opening		
Drive side			8 in		Outward		

Direct Expansion Coil		Component: 3			Length: 28 in		Shipping Section: 1					
Coil Model	Total Capacity	Sensible Capacity	Number of Coils		Number of Rows	Fins per Inch	Tube Diameter	Tube Spacing (Face x Row)				
5EJ0608C	72379 Btu/hr	48466 Btu/hr	1		8	6	0.625 in	1.50 in x 1.299 in				
Air Volume	Air Temperature				Coil Air Pressure Drop	Finned Height	Finned Length	Face Area	Face Velocity			
	Entering		Leaving									
	Dry Bulb	Wet Bulb	Dry Bulb	Wet Bulb								
1520 cfm	84.1 °F	67.3 °F	52.5 °F	51.0 °F	0.77 insWg	21 in	31 in	4.52 ft²	336 ft/min			
Fluid			Sub-Cooled Refrigerant Liquid Temp.		Suction Vapor Superheat Temp. at Coil Outlet		Design Saturated Condensing Temp.		Total Refrigerant Weight			
Suction Temp.		Refrigerant										
44.0 °F		R410a		110.0 °F		8.0 °F		110.0 °F		20.00 lb		
Connection [Data Per Coil]								Min. Fin Surface Temp.		Min. Tube Wall Surface Temp.		
Type	Liquid [Qty - Size]		Suction [Qty - Size]		Location		Material					
OD Sweat	1-0.63 in / 1-0.88		2-1.63 in		Drive side		Copper tube		32.0 °F		32.0 °F	
Material							Drain Pan		Drain Side			
Fin		Tube		Header		Case						
Aluminum .0075 in		Copper .020 in		Copper		Galv. steel		Stainless steel		Drive side		
AHRI 410 Certification												
Coil is NOT certified by AHRI												
Door												
Location				Width				Opening				
Drive side				8 in				Outward				
Access Section		Component: 4			Length: 24 in			Shipping Section: 1				
Air Pressure Drop												
0.00 inWc												
Door												
Location				Width				Opening				
Drive side				20 in				Outward				

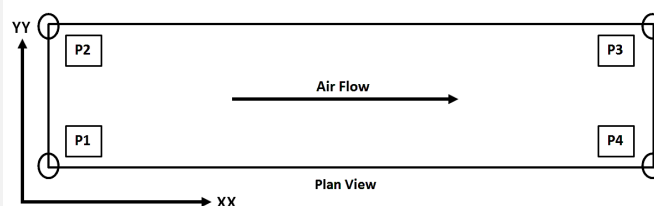
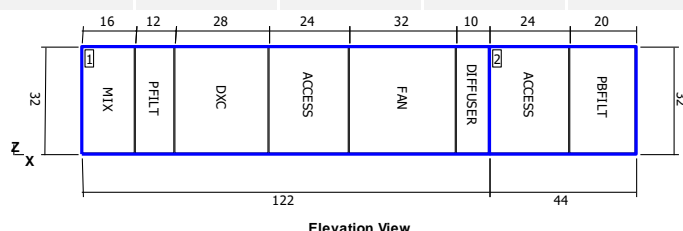
Supply Fan		Component: 5			Length: 32 in		Shipping Section: 1		
Fan Performance									
Air Volume	Static Pressure			Fan Energy Index(FEI)	Total Input Power	Fan Shaft Power	Speed		Outlet Velocity
	External	Total	Cabinet				Operating	Maximum	
1520 cfm	0.70 inWc	4.71 inWc	0.00 inWc	1.25	2.3 kW	2.55 BHP	2687 rpm	2896 rpm	1567 ft/min
Fan Data									
Fan Type	Blade Type / Class		Quantity of Fans	Wheel Diameter	Number of Blades		Discharge		Motor Location
Centrifugal DWDI	Forward Curved / 2		1	9.50 in	N/A		Top horizontal		To Side of Fan
Motor Data									
Power	Electrical Supply	Speed	Efficiency	Enclosure	Frame Size	Supplier	Number of Poles	Lock Rotor Current	Full Load Current
3.0 HP	230/60/3 V/Hz/Phase	1750 rpm	Premium	ODP	182 T frame	Generic	4	63.97 A	8.40 A
Fan Options									
Isolator Type:		Rubber in shear							
Drive Package Data*									
Fan Sheave	Motor Sheave		Belt		Number of Belts		Actual Drive S.F.		Bearing Type
AK39H	AK59H		A27		1		1.19		Standard - L50 (200K)
*Daikin Applied reserves the right to provide a different but equivalent drive package									
Door									
Location			Width			Opening			
Drive side			28 in			Outward			
Diffuser		Component: 6			Length: 10 in		Shipping Section: 1		
Type					Air Pressure Drop				
Perforated plate					0.15 inWc				
Panel									
Location			Width			Opening			
Removable panels			- in			Outward			
Access Section		Component: 7			Length: 24 in		Shipping Section: 2		
Air Pressure Drop									
0.00 inWc									
Door									
Location			Width			Opening			
Drive side			20 in			Outward			
Combination Filter		Component: 8			Length: 20 in		Shipping Section: 2		
Access		Face Velocity			Face Area		Air Volume		
Front		380 ft/min			4.0 ft²		1520 cfm		
Portion	Type	Efficiency	Air Pressure Drop			Number of Filters	Height	Width	Depth
			Clean Air	Mean Air	Dirty Air				
Pre-Filter	Pre Pleat	MERV 13	0.24 inWc	0.62 inWc	1.00 inWc	1	24 in	24 in	2 in
Filter	HEPA	MERV 17 (99.97%)	1.02 inWc	1.91 inWc	2.80 inWc	1	24 in	24 in	12 in
Special Options									
Filter Gauge									
Minihelic II 0-2"									

Unit Sound Power (dB)

Type	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
Radiated:	74	74	63	59	58	53	46	51
Unit Discharge:	80	81	76	74	73	72	65	61
Unit Return:	74	74	64	64	64	65	59	53

Shipping Section Details

Section	Length in	Weight lb	Corner Weights (lb)				Center of Gravity (in)		
			P1	P2	P3	P4	XX	YY	ZZ
1	122	974	261	218	226	269	62	20	15
2	44	233	53	53	63	63	24	22	16
Entire Unit	166	1207	341	298	263	306	78	20	15



NOTE: Special components aren't included in the corner weights and center of gravity data.

Supply Static Pressure Drop

Component	Option	Static Pressure Drop
Mixing Box	Mixing Box	0.02 insWg
Panel Filter	Panel Filter	0.54 insWg
DX Coil	DX Coil	0.77 insWg
Access Section	Access Section	-
Supply Fan	Cabinet	-
Diffuser	Diffuser	0.15 insWg
Access Section	Access Section	-
Panel and Bag Filter	Panel and Bag Filter	2.53 insWg
External Static	External Static	0.70 insWg
Total Supply Static		4.71 insWg

AHRI Certification



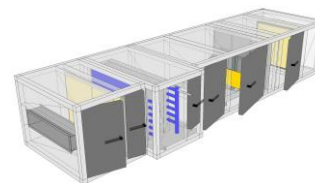
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Notes

Standard

- As a standalone component, unit meets or exceeds requirements of ASHRAE 90.1 - 2016. The approving authority is responsible for compliance of multi - component building systems.

Job Information		Technical Data Sheet
Job Name	HNNS	
Date	29 July 2021	
Submitted By	JA	
Software Version	12.52	
Unit Tag	UMA-CQ-07	



Unit Overview						
Model Number	Supply					
	Air Volume cfm	Static Pressure		External Dimensions		
		External inWc	Total inWc	Height in	Width in	Length in
CAH005GDAM	1685	0.70	4.40	32*	44*	170

*Not including base rails, coil connectors, drain connectors and control boxes.

Unit			
Model Number:	CAH005GDAM		
Approval:	ETL Listed / ETL Listed to Canadian Safety Standards (ETL Label / ETLc Label)		
Construction:	High pressure low leakage construction		
Max. Design Leakage:	Meets or exceeds ASHRAE 111 Class 6 at design static pressure up to +/-8" wc		
Outer Panel:	24 gauge G90 Galvanized Steel (unpainted)		
Liner:	24 gauge Galvanized Steel (unless noted per section)		
Insulation:	R-13 Injected Foam		
Unit Configuration:	Inline horizontal	Drive (Handling) Location:	Right
Base:	None	Wall Thickness:	2 in
Altitude:	2170 ft	Parts Warranty:	Standard One Year

Mixing Box		Component: 1		Length: 20 in		Shipping Section: 1		
Portion	Damper			Blade Action	Rated CFM	Air Pressure Drop	Quantity	
	Size (length x width)		Location					Type
	Overall	Opening						
Outside Air	No opening	No opening		None	Opposed	1685 cfm	1	
Return Air	10 in x 40 in	6 in x 30 in	End	UltraSeal Low Leak	Parallel	842 cfm	0.03 insWg 1	
Door								
Location			Width		Opening			
Drive side			16 in		Outward			

Panel Filter		Component: 2		Length: 12 in		Shipping Section: 1	
Type	Efficiency	Face Velocity	Face Area	Air Volume	Filter Loading		
Pleated	MERV 8	266 ft/min	6.3 ft²	1685 cfm	Side		
Air Pressure Drop			Number of Filters	Height	Width	Depth	
Clean Air	Mean Air	Dirty Air					
0.10 inWc	0.55 inWc	1.00 inWc	2	24 in	20 in	2 in	
Door							
Location			Width			Opening	
Drive side			8 in			Outward	

Direct Expansion Coil		Component: 3			Length: 28 in		Shipping Section: 2					
Coil Model	Total Capacity	Sensible Capacity	Number of Coils		Number of Rows	Fins per Inch	Tube Diameter	Tube Spacing (Face x Row)				
5EJ0608B	77336 Btu/hr	51751 Btu/hr	1		8	6	0.625 in	1.50 in x 1.299 in				
Air Volume	Air Temperature				Coil Air Pressure Drop	Finned Height	Finned Length	Face Area	Face Velocity			
	Entering		Leaving									
	Dry Bulb	Wet Bulb	Dry Bulb	Wet Bulb								
1685 cfm	83.3 °F	66.9 °F	52.9 °F	51.1 °F	0.36 insWg	21 in	37 in	5.40 ft²	312 ft/min			
Fluid			Sub-Cooled Refrigerant Liquid Temp.		Suction Vapor Superheat Temp. at Coil Outlet		Design Saturated Condensing Temp.		Total Refrigerant Weight			
Suction Temp.	Refrigerant											
44.0 °F		R410a		110.0 °F		8.0 °F		110.0 °F		23.00 lb		
Connection [Data Per Coil]							Min. Fin Surface Temp.		Min. Tube Wall Surface Temp.			
Type	Liquid [Qty - Size]	Suction [Qty - Size]	Location		Material							
OD Sweat	1-0.63 in / 1-0.88		2-1.63 in		Drive side		Copper tube		32.0 °F		32.0 °F	
Material						Drain Pan		Drain Side				
Fin	Tube		Header		Case							
Aluminum .0075 in		Copper .020 in		Copper		Galv. steel		Stainless steel		Drive side		
AHRI 410 Certification												
Coil is NOT certified by AHRI												
Door												
Location				Width				Opening				
Drive side				8 in				Outward				
Access Section		Component: 4			Length: 24 in			Shipping Section: 3				
Air Pressure Drop												
0.00 inWc												
Door												
Location				Width				Opening				
Drive side				20 in				Outward				

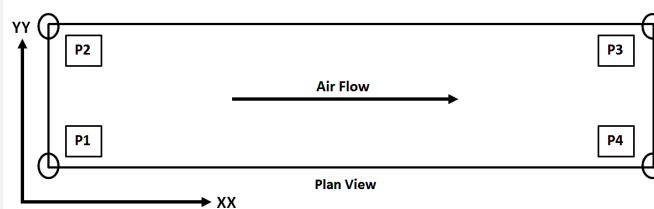
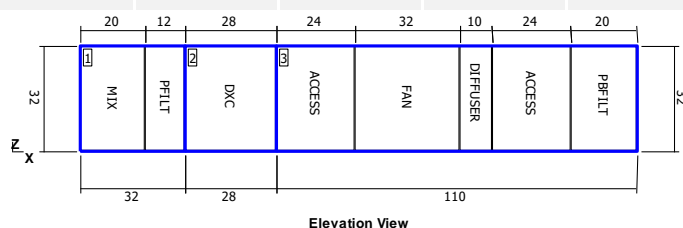
Supply Fan		Component: 5			Length: 32 in		Shipping Section: 3			
Fan Performance										
Air Volume	Static Pressure			Fan Energy Index(FEI)	Total Input Power	Fan Shaft Power	Speed		Outlet Velocity	
	External	Total	Cabinet				Operating	Maximum		
1685 cfm	0.70 inWc	4.40 inWc	0.00 inWc	1.51	2.0 kW	2.16 BHP	2457 rpm	2854 rpm	2188 ft/min	
Fan Data										
Fan Type		Blade Type / Class	Quantity of Fans	Wheel Diameter	Number of Blades	Discharge		Motor Location		
Centrifugal DWDI		Forward Curved / 2	1	9.50 in	N/A	Top horizontal		To Side of Fan		
Motor Data										
Power	Electrical Supply	Speed	Efficiency	Enclosure	Frame Size	Supplier	Number of Poles	Lock Rotor Current	Full Load Current	
3.0 HP	230/60/3 V/Hz/Phase	1750 rpm	Premium	ODP	182 T frame	Generic	4	63.97 A	8.40 A	
Fan Options										
Isolator Type:		Rubber in shear								
Drive Package Data*										
Fan Sheave		Motor Sheave		Belt		Number of Belts		Actual Drive S.F.		Bearing Type
AK39H		AK54H		A26		1		1.11		Standard - L50 (200K)
*Daikin Applied reserves the right to provide a different but equivalent drive package										
Door										
Location			Width			Opening				
Drive side			28 in			Outward				
Diffuser		Component: 6			Length: 10 in		Shipping Section: 3			
Type					Air Pressure Drop					
Perforated plate					0.15 inWc					
Panel										
Location			Width			Opening				
Removable panels			- in			Outward				
Access Section		Component: 7			Length: 24 in		Shipping Section: 3			
Air Pressure Drop										
0.00 inWc										
Door										
Location			Width			Opening				
Drive side			20 in			Outward				
Combination Filter		Component: 8			Length: 20 in		Shipping Section: 3			
Access		Face Velocity			Face Area		Air Volume			
Front		421 ft/min			4.0 ft²		1685 cfm			
Portion	Type	Efficiency	Air Pressure Drop			Number of Filters	Height	Width	Depth	
			Clean Air	Mean Air	Dirty Air					
Pre-Filter	Pre Pleat	MERV 13	0.28 inWc	0.64 inWc	1.00 inWc	1	24 in	24 in	2 in	
Filter	HEPA	MERV 17 (99.97%)	1.15 inWc	1.97 inWc	2.80 inWc	1	24 in	24 in	12 in	
Special Options										
Filter Gauge										
Minihelic II 0-2"										

Unit Sound Power (dB)

Type	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
Radiated:	73	73	62	58	57	52	46	51
Unit Discharge:	79	80	75	73	72	71	64	60
Unit Return:	73	73	63	63	63	64	58	52

Shipping Section Details

Section	Length in	Weight lb	Corner Weights (lb)				Center of Gravity (in)		
			P1	P2	P3	P4	XX	YY	ZZ
1	32	245	56	56	66	66	17	22	16
2	28	394	114	104	84	93	13	24	15
3	110	676	192	156	146	182	53	20	15
Entire Unit	170	1315	404	331	253	326	75	20	15



NOTE: Special components aren't included in the corner weights and center of gravity data.

Supply Static Pressure Drop

Component	Option	Static Pressure Drop
Mixing Box	Mixing Box	0.03 insWg
Panel Filter	Panel Filter	0.55 insWg
DX Coil	DX Coil	0.36 insWg
Access Section	Access Section	-
Supply Fan	Cabinet	-
Diffuser	Diffuser	0.15 insWg
Access Section	Access Section	-
Panel and Bag Filter	Panel and Bag Filter	2.61 insWg
External Static	External Static	0.70 insWg
Total Supply Static		4.40 insWg

AHRI Certification



Certified in accordance with the AHRI Central Station Air-Handling Unit Certification Program, which is based on AHRI Standards 430/431. Certified units may be found in the AHRI Directory at www.ahridirectory.org.

Notes

Standard

- As a standalone component, unit meets or exceeds requirements of ASHRAE 90.1 - 2016. The approving authority is responsible for compliance of multi - component building systems.

Job Information		Technical Data Sheet
Job Name	HNNS	
Date	7/29/2021	
Submitted By	Jose Alvayero	
Software Version	08.10	
Unit Tag	UMA-CQ-08	



Unit Overview					
Model Number	Voltage V/Hz/Phase	Airflow CFM	Static Pressure		Unit Configuration
			External inH ₂ O	Total inH ₂ O	
LAH002A	230/60/3	490	0.70	1.61	Horizontal

Unit	
Model Number:	LAH002A
Type:	Indoor Air Handler
Altitude:	2170 ft
Configuration	Horizontal
Construction:	Double-wall construction with foam injected insulation
Approval:	AHRI, ETL, CETL & MEA
Refrigerant Type:	R-410a

Physical				
Unit				
Length	Height	Width	Weight	
47.8 in	20.5 in	28.5 in	247.0 lb	
Unit Construction				
Outer Panel	Inner Liner	Insulation	Frame	Access
Galvanized Steel	Galvanized steel	1 inch Expanded Foam	1 inch Aluminum	Removable panels access; Side filter and fan

Filter					
Type	Face Area	Filter Face Velocity	Air Pressure Drop	Air Pressure Drop Type	(Quantity) Height x Width x Depth
Pleated (MERV 11)	2.6 ft ²	185.6 ft/min	0.80 inH ₂ O	Mean Pressure Drop	(1) 16 in x 25 in x 4 in

DX Cooling Coil

Physical							
Fins per Inch	Rows	Face Area	Face Velocity	Fin Height	Fin Length	Air Pressure Drop	
12	4	2.0 ft²	240.2 ft/min	14.0 in	21.0 in	0.11 inH₂O	
Material							
Fin		Tube		Header		Casing	
.0060 in Aluminum		.013 in Copper		Copper		Galvanized steel casing	
Connection							
Type	Location	Liquid		Suction			
		Quantity	Size	Quantity	Size		
Sweat	Drive Side	1	0.625 in	1	0.875 in		
Drain Pan							
Material		Connection			Secondary Connection		
Microbial resistant coated galvanized		1 in ID MPT			1/2 in ID MPT		
Performance							
Capacity		Refrigerant Type	Air Temperature				Saturated Suction Temperature °F
Total Btu/hr	Sensible Btu/hr		Entering		Leaving		
			Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F	
16480	12042	R-410a	74.0	61.6	49.6	49.1	45.0

Supply Fan

Fan						
Type	Class	Wheel Diameter	Orientation		Vibration Isolation	
Forward Curved	Class 1	7 in x 7 in	Top Horizontal - CCW Rotation		Rubber in Shear	
Motor						
Horsepower	Type	Efficiency	Voltage	Full Load Current	Drive Side	VFD
.50 HP	Open Drip Proof	78.2 %	230/60/3 V/Hz/Phase	1.9 A	Left Hand	60 Hz
Drive Package Data						
Sheaves			Belts			
Fan		Motor		Quantity		Part Number
AK21		1VP34		1		A27
Note:	Daikin Applied reserves the right to provide a different but equivalent drive package					
Performance						
Air Flow CFM	Total Static Pressure inH ₂ O	Fan Speed RPM	Brake Horsepower HP	Outlet Velocity ft/min		Altitude UOM_ItxtAltitude
490	1.61	2090	0.31	891		ItxtAltitude

Sound

Sound Power (db)							
Frequency	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Inlet	69	75	64	63	66	64	66
Discharge	75	73	71	67	71	67	66
Radiated	70	61	56	51	55	48	44

Internal Pressure Drop Calculation	
Cooling Coil:	0.11 inH ₂ O
Filter:	0.80 inH ₂ O
Total Internal Pressure Drop:	0.91 inH ₂ O

Options	
Unit	
Filter Gauge:	Filter Gauge in Coil Section

AHRI Certification	
	All equipment is rated and certified in accordance with AHRI 430.

Notes	

Accessories	
Mandatory	
Part Number	Description
TempRowAccessories	

Produced on 26/7/2021 with Xpress Selection V9.2.0 - database DIL 16.4.7

Project name HNNS
 Project address El Salvador
 Reference 001
 Client name MINSAL
 Revision 01

Selection parameters of the indoor units can be found under the chapter Indoor unit details
 Selection parameters of the outdoor units can be found under the chapter Outdoor unit details
 Only the data published in the data book are correct. This program uses close approximations of these data.

1. Material List

Model Type	Model Name	Qty	Description
Outdoor unit	RXYQ96TATJU	1	Heat pump VRV IV 220V(TATJU)
Indoor unit	FXAQ40AVM	1	VRV A(AVM) - Wall Mounted
	FXAQ50AVM	1	VRV A(AVM) - Wall Mounted
	FXAQ63AVM	1	VRV A(AVM) - Wall Mounted
	FXFSQ50AVE	1	VRV FS(AVE) - Ceiling Mounted Cassette(Round Flow with Sensing)
	FXFSQ63AVM	1	VRV FS(AVM) - Ceiling Mounted Cassette(Round Flow with Sensing)
Branch unit	KHRP26A22T	2	Refnet branch piping kit
	KHRP26A33T	2	Refnet branch piping kit
Gas tight joint	BDGTA06	3	Daikin gas tight joint
	BDGTA09	10	Daikin gas tight joint
	BDGTA12	3	Daikin gas tight joint
	BDGTA15	4	Daikin gas tight joint
	BDGTA19	3	Daikin gas tight joint
	BDGTA22	6	Daikin gas tight joint
	BDGTA2219	1	Daikin gas tight joint
Option or add-on	BYCSP125BW1	1	Decoration panel
	BRC1E63	4	Wired Remote Controller (Navigation Remote Controller)
	BYCQ125EEF	1	Standard panel with sensing sensor(Fresh white)
Refrigerant	R410A	7.9lbs	Extra refrigerant charge
Copper pipe	Piping 1/4"	12.3m	Soft copper pipe
	Piping 3/8"	31.1m	Soft copper pipe
	Piping 1/2"	12.3m	Soft copper pipe
	Piping 5/8"	11.0m	Soft copper pipe
	Piping 3/4"	4.6m	Hard copper pipe
	Piping 7/8"	15.5m	Hard copper pipe

2. Indoor Unit Details

2.1. *Table of Abbreviations*

Name	Logical name of the device
FCU	Device model name
Tmp C	Indoor conditions in cooling (dry bulb temp. / RH)
Rq TC	Required total cooling capacity
Rv TC	Revised total cooling capacity (asked from outdoor)
Max TC	Available total cooling capacity
Rq SC	Required sensible cooling capacity
Max SC	Available sensible cooling capacity
Tevap	Evaporating temperature of indoor unit coil
Tmp H	Indoor temperature in heating
Rq HC	Required heating capacity
Max HC	Available heating capacity
Airflow	Supplied airflow
Sound	Sound pressure low and high
PS	Power supply (voltage and phases)
MCA	Minimum Circuit Amps
WxHxD	WidthxHeightxD
Wght	Weight of the device

2.2. UC-VRV-01 - RXYQ96TATJU

Capacity data at conditions and connection ratio (106%) as entered

Name	FCU	Tmp C	Rq TC	Rv TC	Max TC	Rq SC	Max SC	Tevap	Tmp H	Rq HC	Max HC	Airflow
		°F	BTU/h	BTU/h	BTU/h	BTU/h	BTU/h	°F	°F	BTU/h	BTU/h	cfm
UI-AM-01	FXAQ50AVM	72.0 / 60%	11600	12550	16567	9600	11185	42.8	68.0	n/a	21496	530
UI-AM-02	FXAQ63AVM	72.0 / 60%	11700	n/a	21008	10200	13956	42.8	68.0	n/a	27297	671
UI-AM-03	FXFSQ50AVE	72.0 / 60%	13100	n/a	16567	10700	13471	42.8	68.0	n/a	21496	1059
UI-AM-04	FXFSQ63AVM	72.0 / 60%	17200	17291	21008	14200	15710	42.8	68.0	n/a	27297	830
UI-AM-05	FXAQ40AVM	72.0 / 60%	9200	9584	13323	7800	9250	42.8	68.0	n/a	17061	431

Required cooling capacity towards the outdoor unit: 64224BTU/h.

Name	Sound	PS	MCA	WxHxD	Wght
	dBA		A	inch	lbs
UI-AM-01	35.5-41	220V 1ph	0.7	41.3×11.4×10.6	33
UI-AM-02	38.5-46.5	220V 1ph	0.7	41.3×11.4×10.6	33
UI-AM-03	34-44	220V 1ph	1.5	33.1×11.3×33.1	57
UI-AM-04	28-38	230V 1ph	0.6	33.1×10.1×33.1	49
UI-AM-05	33.5-37	220V 1ph	0.7	41.3×11.4×10.6	33



Outdoor unit placed 30.0m above the indoor units.

The minimum connection ratio for this height difference is 50%.

3. Outdoor Unit Details

3.1. Table of Abbreviations

Name	Logical name of the device
Model	Device model name
Tmp C	Outdoor temperature in cooling
CC	Available cooling capacity
Rq CC	Required cooling capacity
EER	EER at nominal conditions for standard efficiency series (nominal temperatures, 100% connection ratio and without considering pipe length corrections)
Tmp H	Outdoor conditions in heating (dry bulb temp. / RH)
HC	Available heating capacity (integrated heating capacity)
Rq HC	Required heating capacity
COP	COP at nominal conditions for standard efficiency series (nominal temperatures, 100% connection ratio and without considering pipe length corrections)
Piping	Largest distance from indoor unit to outdoor unit
Bse Refr	Standard factory refrigerant charge (5m actual piping length) excluding extra refrigerant charge For calculation of extra refrigerant charge refer to the databook
Ex Refr	Extra refrigerant charge
PS	Power supply (voltage and phases)
MCA	Minimum Circuit Amps
WxHxD	WidthxHeightxD
Wght	Weight of the device

3.2. Outdoor Details

Name	Model	Comb	Tmp C	CC	Rq CC	EER (*)	Tmp H	HC	Rq HC	COP (*)
		%	°F	BTU/h	BTU/h	BTU/h/W	°F	BTU/h	BTU/h	W/W
UC-VRV-01	RXYQ96TATJU	106	89.6	79927	64224	16.4	86.0 / 65%	n/a		5

(*) The EER and COP values are calculated at nominal conditions: nominal temperatures, 100% connection ratio and without considering pipe length corrections.

Name	Model	Piping	Refrigerant		
		m	Type	Bse Refr	Ex Refr
				lbs	lbs
UC-VRV-01	RXYQ96TATJU	36.2	R410A	22.7	7.9

Name	Model	PS	MCA	WxHxD	Wght
			A	inch	lbs
UC-VRV-01	RXYQ96TATJU	230V 3ph	36.3	48.9x66.7x30.2	525

3.2.1. UC-VRV-01 - RXYQ96TATJU

Model Type	Model Name	Qty	Description
Outdoor unit	RXYQ96TATJU	1	Heat pump VRV IV 220V(TATJU)
Indoor unit	FXAQ40AVM	1	VRV A(AVM) - Wall Mounted
	FXAQ50AVM	1	VRV A(AVM) - Wall Mounted
	FXAQ63AVM	1	VRV A(AVM) - Wall Mounted
	FXFSQ50AVE	1	VRV FS(AVE) - Ceiling Mounted Cassette(Round Flow with Sensing)
	FXFSQ63AVM	1	VRV FS(AVM) - Ceiling Mounted Cassette(Round Flow with Sensing)
Branch unit	KHRP26A22T	2	Refnet branch piping kit
	KHRP26A33T	2	Refnet branch piping kit
Gas tight joint	BDGTA06	3	Daikin gas tight joint
	BDGTA09	10	Daikin gas tight joint
	BDGTA12	3	Daikin gas tight joint
	BDGTA15	4	Daikin gas tight joint
	BDGTA19	3	Daikin gas tight joint
	BDGTA22	6	Daikin gas tight joint
	BDGTA2219	1	Daikin gas tight joint
Option or add-on	BYCSP125BW1	1	Decoration panel
	BRC1E63	4	Wired Remote Controller (Navigation Remote Controller)
	BYCQ125EEF	1	Standard panel with sensing sensor(Fresh white)
Refrigerant	R410A	7.9lbs	Extra refrigerant charge
Copper pipe	Piping 1/4"	12.3m	Soft copper pipe
	Piping 3/8"	31.1m	Soft copper pipe
	Piping 1/2"	12.3m	Soft copper pipe
	Piping 5/8"	11.0m	Soft copper pipe
	Piping 3/4"	4.6m	Hard copper pipe
	Piping 7/8"	15.5m	Hard copper pipe

Standard factory refrigerant charge (5m actual piping length) = 22.7lbs

Extra refrigerant charge = $31.1\text{m}(\varnothing 3/8") \times 0.059\text{kg/m} + 12.3\text{m}(\varnothing 1/4") \times 0.022\text{kg/m} + A + B = 7.9\text{lbs}$

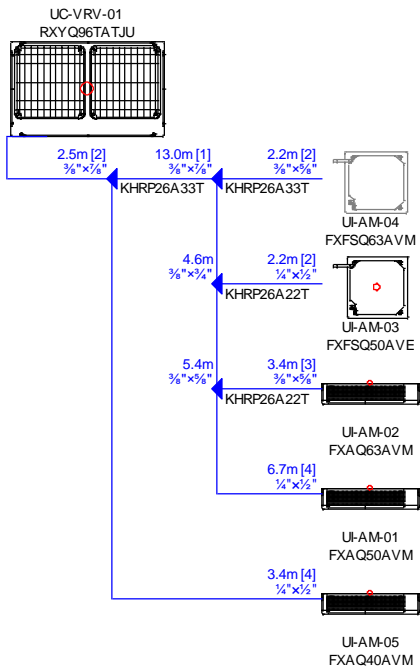
A [CR 106%, actual length 32.2m] = 3.3lbs

B [10HP] = 0.0lbs

4. Piping Diagrams

Pipes marked with a short red stripe in the diagrams must be connected to the device with a reducing joint.

4.1. Piping UC-VRV-01

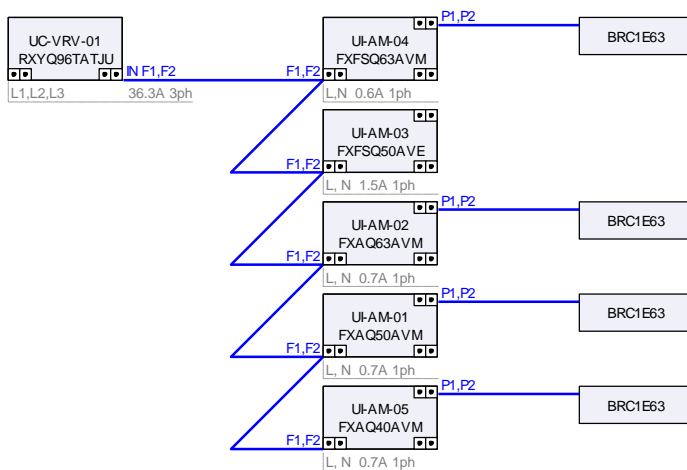


5. Wiring Diagrams

P1P2 = Please select the cable type and size in accordance with the databook.

F1F2 = Please select the cable type and size in accordance with the databook.

5.1. Wiring UC-VRV-01



6. Device Options

6.1. Indoor Unit Options

Model	Description	Used by
BYCSP125BW1	Decoration panel	UI-AM-03 [FXFSQ50AVE]
BYCQ125EEF	Standard panel with sensing sensor(Fresh white)	UI-AM-04 [FXFSQ63AVM]

MEMORIA DE CÁLCULO DE VENTILACIÓN MECÁNICA

CALCULO DE FLUJO DE AIRE

Proyecto

ADECUACION DE AREA PARA QUIROFANOS EN EL HOSPITAL SALDAÑA

Propietario

Hospital Nacional General de Neumología y Medicina Familiar
Saldaña "Dr. José Antonio Saldaña" (Neumológico)

MEMORIA DE CÁLCULO DE VENTILACIÓN MECÁNICA

Proyecto: Adecuación de área para quirófanos en el Hospital Saldaña
Cliente: Hospital Nacional General de Neumología y Medicina Familiar Saldaña "Dr. José Antonio Saldaña" (Neumológico)

Cálculo de Ventilación Mecánica												
Sección	Ambientes	Área [m2]	Área [ft2]	Altura [m]	Altura [ft]	Volumen [ft³]	ACH	unit	cfm/unit o cfm/ft2	CFM - Cálculo 1	CFM - Cálculo 2	CFM Diseño
Centro Quirurgico	Septico	10.86	116.90	3.00	9.84	1,150.59	10	1		191.77	-	195
	Aseo y Bodega de Limpieza	13.44	144.70	3.00	9.84	1,424.21	10	1	1	237.37	144.70	145
	S.S. Transfer	3.05	32.90	3.00	9.84	323.82	10	1	50	53.97	50.00	50
Acceso Médico	S.S. Lockers #1 - Femenino	2.80	30.20	3.00	9.84	297.24	10	1	50	49.54	50.00	50
	S.S. Lockers #2 - Masculino	2.86	30.80	3.00	9.84	303.15	10	1	50	50.52	50.00	50

MEMORIA DE CÁLCULO DE VENTILACIÓN MECÁNICA

SELECCIÓN DE EQUIPOS

Proyecto

ADECUACION DE AREA PARA QUIROFANOS EN EL HOSPITAL SALDAÑA

Propietario

Hospital Nacional General de Neumología y Medicina Familiar
Saldaña "Dr. José Antonio Saldaña" (Neumológico)

SUBMITTAL

Job Name: **HNNS**

Elevation: (ft) 2,162

Date: 7/30/2021

INTERNATIONAL ENGINEER OFFICE

100 GREENHECK DR

SCHOFIELD, WI 54476

US

Phone: (715)355-2345

Fax:

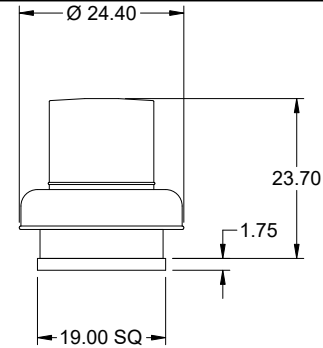
Email Address: alvayero18@hotmail.com



P.O. Box 410 Schofield, WI 54476 (715) 359-6171 FAX (715) 355-2399 www.greenheck.com

Model: G-099-A

Direct Drive Centrifugal Roof Exhaust Fan



OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.

Dimensional

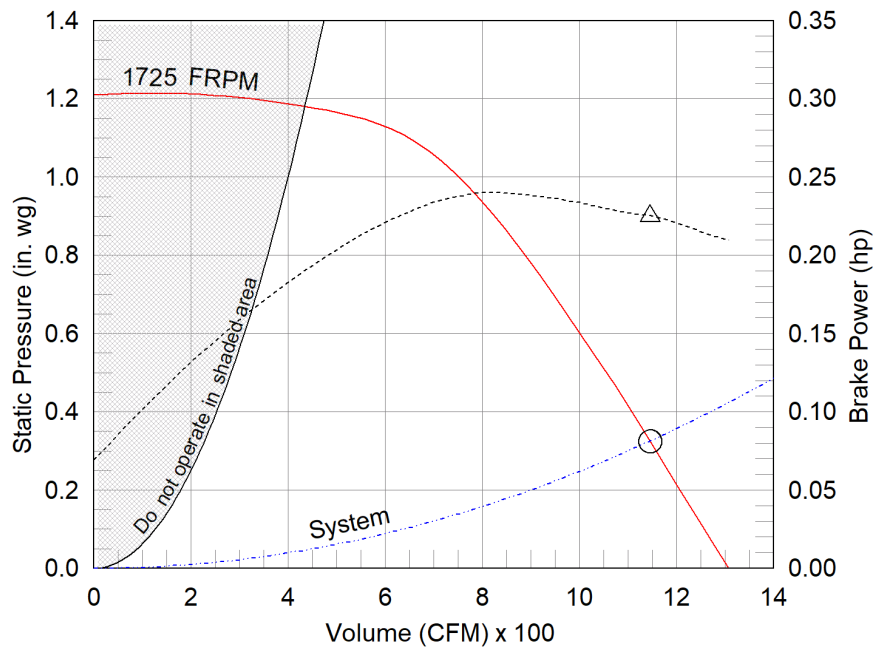
Quantity	4
Weight w/o Acc's (lb)	43
Weight w/ Acc's (lb)	48
Max T Motor Frame Size	56
Standard Curb Cap Size (in.)	19 x 19
Roof Opening (in.)	14.5 x 14.5

Performance

Requested Volume (CFM)	1,100
Actual Volume (CFM)	1,145
Total External SP (in. wg)	0.325
Fan RPM	1725
Operating Power (hp)	0.22
Elevation (ft)	2,162
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.069
Tip Speed (ft/min)	5,053
Static Eff. (%)	26

Motor

Motor Mounted	Yes
Size (hp)	1/4
Voltage/Cycle/Phase	230/60/1
Enclosure	ODP
Motor RPM	1725
Efficiency Rating	Standard
Windings	1
NEC FLA* (Amps)	2.9



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Static Pressure Calculations

External SP	0.3 in. wg
Direct Drive RPM Adjustment	0.025 in. wg
Total External SP	0.325 in. wg

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	75	79	79	72	68	67	63	56	76	64	13.3

Notes:

All dimensions shown are in units of in.
*NEC FLA - based on tables 430.248 or 430.250 of National Electrical Code 2017. Actual motor FLA may vary, for sizing thermal overload, consult factory.
LwA - A weighted sound power level, based on ANSI S1.4 dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
Sones - calculated using ANSI/AMCA 301 at 5 ft



Model: G-099-A

Direct Drive Centrifugal Roof Exhaust Fan

Tags: EXT-CQ-01 EXT-CQ-02 EXT-CQ-03 EXT-CQ-04

Standard Construction Features:

- Aluminum housing - Backward inclined composite (sizes 60-95) or aluminum (sizes 97-300) wheel - Aluminum curb cap with prepunched mounting holes - Birdscreen - Ball bearing motors (sizes 85-300 and all Vari Green), sleeve bearing motors (sizes 60-80) - Motor isolated on shock mounts - Corrosion resistant fasteners

Selected Options & Accessories:

Standard Curb Cap Size - 19 in. Square
UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-1, Toggle, Shipped with Unit
Junction Box Mounted & Wired
Birdscreen: Galvanized, nom. 84% Free Area
Unit Warranty: 1 Yr (Standard)

AMCA



AMCA Licensed for Sound and Air Performance. Power rating (BHP/kW) does not include transmission losses.

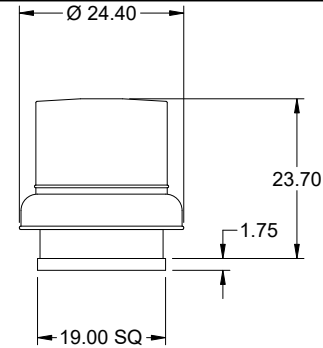
Greenheck Fan Corporation certifies that the model shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP/kW) does not include transmission losses. Performance ratings include the effects of birdscreen. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per ANSI/AMCA Standard 301. Values shown are for installation type A: free inlet hemispherical sone levels. dBA levels are not licensed by AMCA International. The AMCA Certified Ratings Seal applies to sone ratings only.

Model: GB-100-4

Belt Drive Centrifugal Roof Exhaust Fan

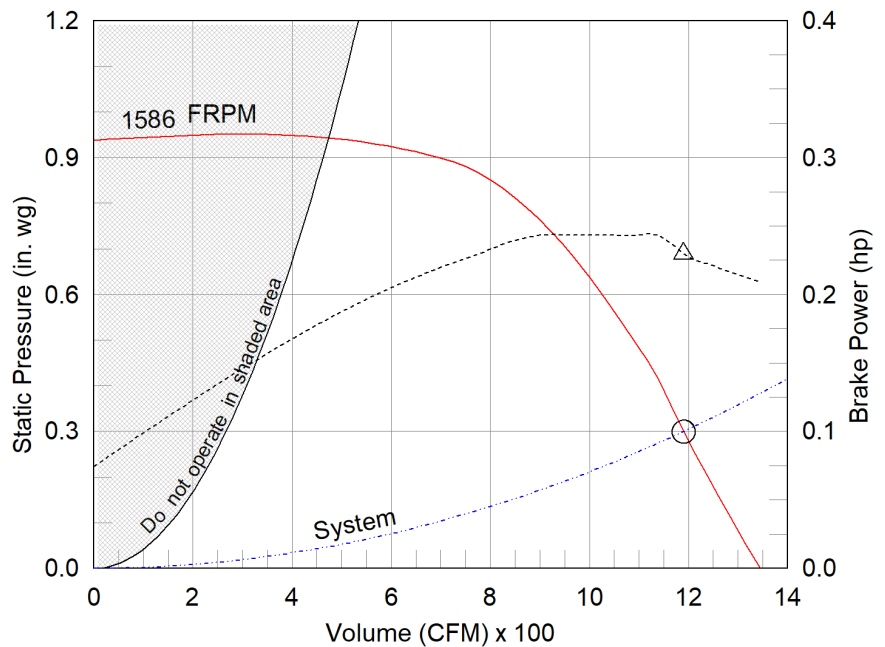
Previously: GB-101-4

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	48
Weight w/ Acc's (lb)	53
Max T Motor Frame Size	56
Standard Curb Cap Size (in.)	19 x 19
Roof Opening (in.)	14.5 x 14.5



OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.

Performance	
Requested Volume (CFM)	1,190
Actual Volume (CFM)	1,190
Total External SP (in. wg)	0.3
Fan RPM	1586
Operating Power (hp)	0.23
Elevation (ft)	2,162
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.069
Drive Loss (%)	13.0
Tip Speed (ft/min)	4,620
Static Eff. (%)	28



Motor	
Motor Mounted	Yes
Size (hp)	1/4
Voltage/Cycle/Phase	230/60/1
Enclosure	ODP
Motor RPM	1725
Efficiency Rating	Standard
Windings	1
NEC FLA* (Amps)	2.9

- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	71	74	75	69	63	62	56	49	72	60	10.0

Notes:

All dimensions shown are in units of in.
*NEC FLA - based on tables 430.248 or 430.250 of National Electrical Code 2017. Actual motor FLA may vary, for sizing thermal overload, consult factory.
LwA - A weighted sound power level, based on ANSI S1.4
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
Sones - calculated using ANSI/AMCA 301 at 5 ft



Model: GB-100-4

Belt Drive Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined aluminum wheel - Curb cap with prepunched mounting holes - Motor and drives isolated on shock mounts - Birdscreen - Ball bearing motors - Adjustable motor pulley - Adjustable motor plate - Fan shaft mounted in ball bearing pillow blocks - Bearings meet or exceed temperature rating of fan - Static resistant belts - Corrosion resistant fasteners - Sizes 141 and larger have internal Lifting lugs

Selected Options & Accessories:

Standard Curb Cap Size - 19 in. Square
UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-1, Toggle, Shipped with Unit
Junction Box Mounted & Wired
Birdscreen: Galvanized, nom. 84% Free Area
Unit Warranty: 1 Yr (Standard)

AMCA



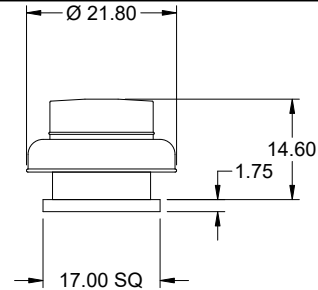
AMCA Licensed for Sound and Air Performance. Power rating (BHP/kW) includes transmission losses.

Greenheck Fan Corporation certifies that the model shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP/kW) includes transmission losses. Performance ratings include the effects of birdscreen. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per ANSI/AMCA Standard 301. Values shown are for installation type A: free inlet hemispherical sone levels. dBA levels are not licensed by AMCA International. The AMCA Certified Ratings Seal applies to sone ratings only.

Model: G-095-D

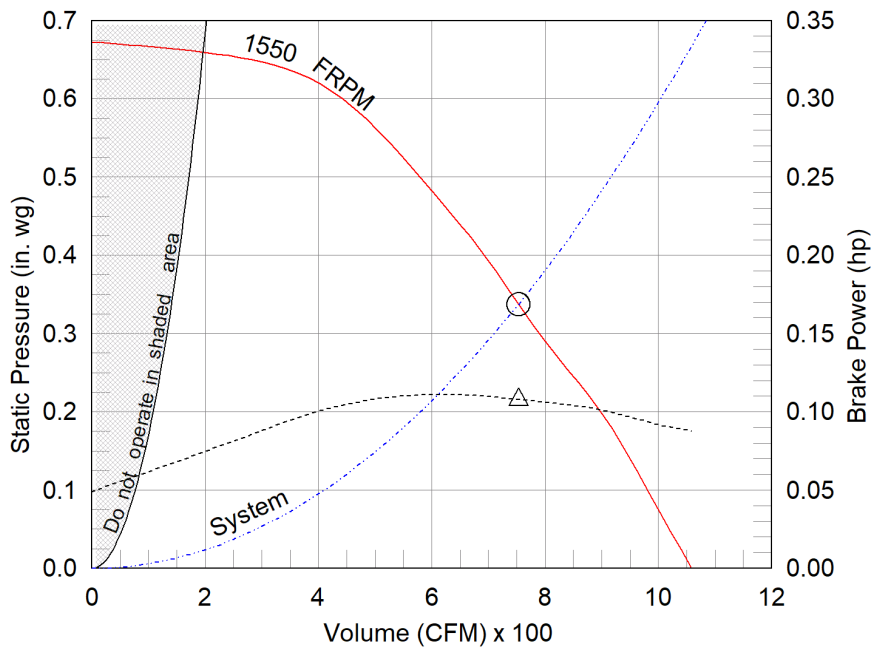
Direct Drive Centrifugal Roof Exhaust Fan

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	28
Weight w/ Acc's (lb)	33
Standard Curb Cap Size (in.)	17 x 17
Roof Opening (in.)	12.5 x 12.5



OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.

Performance	
Requested Volume (CFM)	710
Actual Volume (CFM)	753
Total External SP (in. wg)	0.338
Fan RPM	1550
Operating Power (hp)	0.11
Elevation (ft)	2,162
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.069
Tip Speed (ft/min)	4,413
Static Eff. (%)	37



Motor	
Motor Mounted	Yes
Size (hp)	1/8 (or greater)
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP
Motor RPM	1550
Efficiency Rating	Standard
Windings	1

- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- System curve
- Brake horsepower curve

Static Pressure Calculations

External SP	0.3 in. wg
Direct Drive RPM Adjustment	0.038 in. wg
Total External SP	0.338 in. wg

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	79	77	72	65	59	58	50	37	69	57	8.7

Notes:

All dimensions shown are in units of in.
*Please consult factory for actual motor amp draw
LwA - A weighted sound power level, based on ANSI S1.4
dBA - A weighted sound pressure level, based on 11.5 dB
attenuation per Octave band at 5 ft - dBA levels are not
licensed by AMCA International
Sones - calculated using ANSI/AMCA 301 at 5 ft



Model: G-095-D

Direct Drive Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined composite (sizes 60-95) or aluminum (sizes 97-300) wheel - Aluminum curb cap with prepunched mounting holes - Birdscreen - Ball bearing motors (sizes 85-300 and all Vari Green), sleeve bearing motors (sizes 60-80) - Motor isolated on shock mounts - Corrosion resistant fasteners

Selected Options & Accessories:

Standard Curb Cap Size - 17 in. Square
UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-1, Toggle, Shipped with Unit
Junction Box Mounted & Wired
Birdscreen: Galvanized, nom. 84% Free Area
Composite Wheel Material
Unit Warranty: 1 Yr (Standard)

AMCA

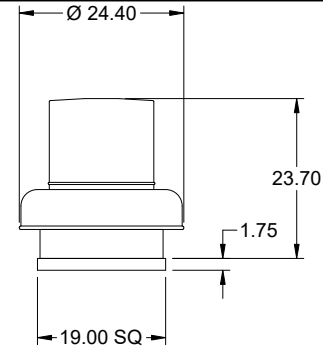


AMCA Licensed for Sound and Air Performance. Power rating (BHP/kW) does not include transmission losses.

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Model: G-099-A

Direct Drive Centrifugal Roof Exhaust Fan



OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.

Dimensional

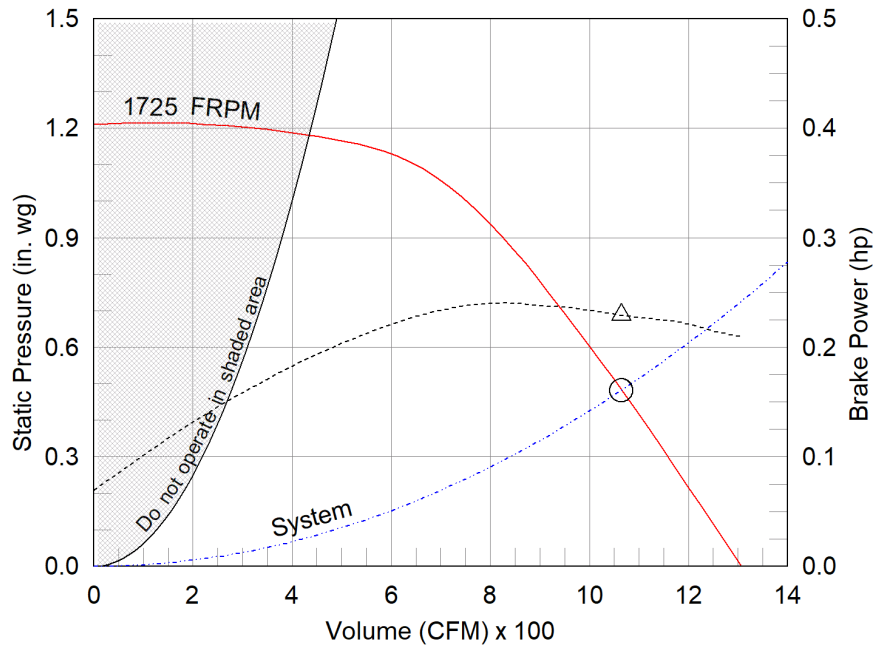
Quantity	1
Weight w/o Acc's (lb)	43
Weight w/ Acc's (lb)	48
Max T Motor Frame Size	56
Standard Curb Cap Size (in.)	19 x 19
Roof Opening (in.)	14.5 x 14.5

Performance

Requested Volume (CFM)	840
Actual Volume (CFM)	1,065
Total External SP (in. wg)	0.482
Fan RPM	1725
Operating Power (hp)	0.23
Elevation (ft)	2,162
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.069
Tip Speed (ft/min)	5,053
Static Eff. (%)	35

Motor

Motor Mounted	Yes
Size (hp)	1/4
Voltage/Cycle/Phase	230/60/1
Enclosure	ODP
Motor RPM	1725
Efficiency Rating	Standard
Windings	1
NEC FLA* (Amps)	2.9



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Static Pressure Calculations

External SP	0.3 in. wg
Direct Drive RPM Adjustment	0.182 in. wg
Total External SP	0.482 in. wg

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	75	79	79	71	67	67	62	55	75	64	12.8

Notes:

All dimensions shown are in units of in.
*NEC FLA - based on tables 430.248 or 430.250 of National Electrical Code 2017. Actual motor FLA may vary, for sizing thermal overload, consult factory.
LwA - A weighted sound power level, based on ANSI S1.4
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
Sones - calculated using ANSI/AMCA 301 at 5 ft



Model: G-099-A

Direct Drive Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined composite (sizes 60-95) or aluminum (sizes 97-300) wheel - Aluminum curb cap with prepunched mounting holes - Birdscreen - Ball bearing motors (sizes 85-300 and all Vari Green), sleeve bearing motors (sizes 60-80) - Motor isolated on shock mounts - Corrosion resistant fasteners

Selected Options & Accessories:

Standard Curb Cap Size - 19 in. Square
UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-1, Toggle, Shipped with Unit
Junction Box Mounted & Wired
Birdscreen: Galvanized, nom. 84% Free Area
Unit Warranty: 1 Yr (Standard)

AMCA



AMCA Licensed for Sound and Air Performance. Power rating (BHP/kW) does not include transmission losses.

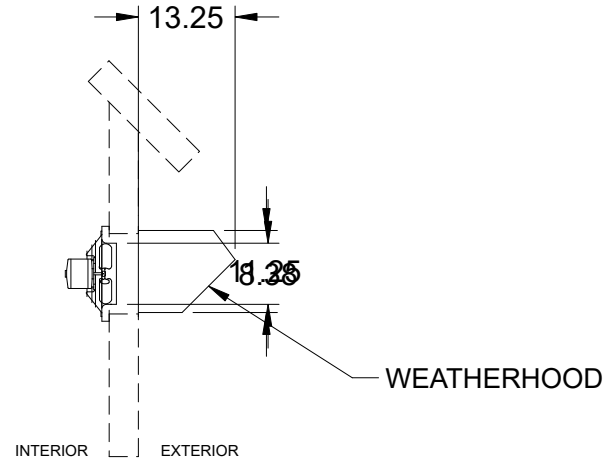
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Model: SE1-8-424-G

Sidewall Direct Drive Fan

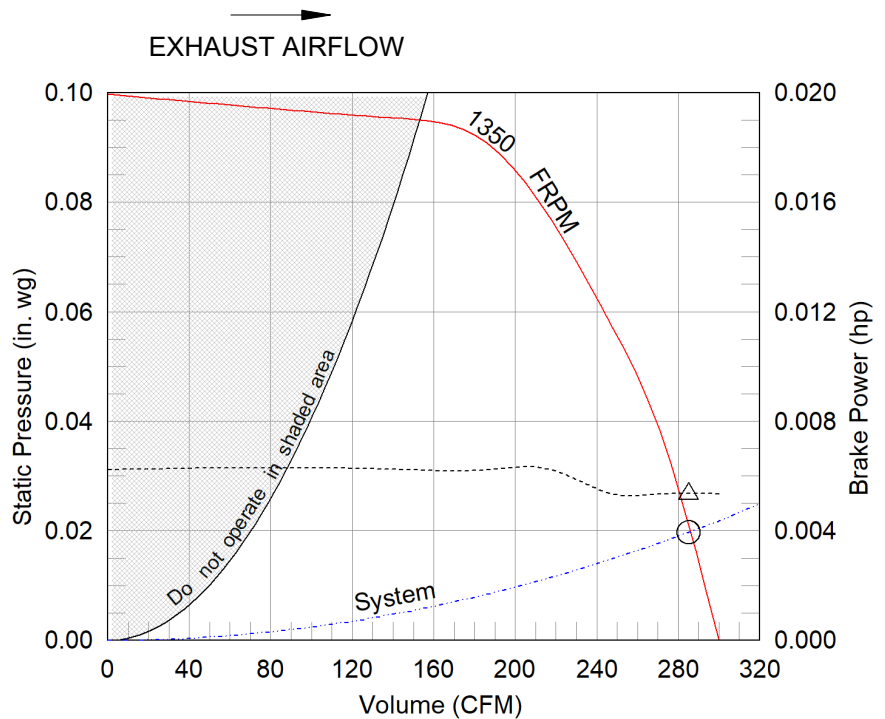
Motor Access From Int. of Bldg.

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	17
Weight w/ Acc's (lb)	26
Wall Opening (in.)	10.5 x 10.5



Performance	
Requested Volume (CFM)	195
Actual Volume (CFM)	285
Total External SP (in. wg)	0.02
Fan RPM	1350
Operating Power (hp)	0.01
Elevation (ft)	2,162
Airstream Temp.(F)	90
Air Density (lb/ft3)	0.067
Tip Speed (ft/min)	2,827
Static Eff. (%)	17

Motor	
Motor Mounted	Yes
Size (hp)	1/80 (or greater)
Voltage/Cycle/Phase	115/60/1
Enclosure	TEAO
Motor RPM	1350
Efficiency Rating	Standard
Windings	1



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- System curve
- Brake horsepower curve

Static Pressure Calculations

External SP	0 in. wg
Direct Drive RPM Adjustment	0.011 in. wg
Weatherhood	0.009 in. wg
Total External SP	0.02 in. wg

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	62	64	50	47	48	46	39	36	54	42	3.2

Notes:

All dimensions shown are in units of in.
*Please consult factory for actual motor amp draw
LwA - A weighted sound power level, based on ANSI S1.4
dBA - A weighted sound pressure level, based on 11.5 dB
attenuation per Octave band at 5 ft - dBA levels are not
licensed by AMCA International
Sones - calculated using AMCA 301 at 5 ft



Model: SE1-8-424-G

Sidewall Direct Drive Fan

Standard Construction Features:

- Fan panels of galvanized steel - Aluminum blade propeller - Heavy gauge welded wire motor supports and fan guard that is Zinc plated - Motor mounted to support guard with neoprene isolators - Corrosion resistant fasteners

Selected Options & Accessories:

Airflow Direction: Exhaust

Motor Access: From Int. of Bldg.

Weatherhood, Galvanized 45 deg. with Bird Screen

Unit Warranty: 1 Yr (Standard)

AMCA



AMCA Licensed for Sound and Air Performance Without Appurtenances (Accessories). Power rating (BHP/kW) does not include transmission losses.

Greenheck Fan Corporation certifies that the model shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP/kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A: free inlet hemispherical sone levels. dBA levels are not licensed by AMCA International. The AMCA Certified Ratings Seal applies to sone ratings only.

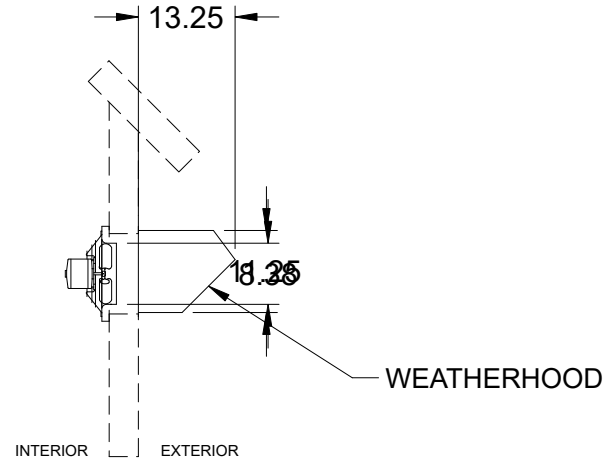
The AMCA licensed air and/or sound performance data has been modified for installation, appurtenances or accessories, etc. not included in the certified data. The modified performance is not AMCA licensed but is provided to aid in selection and applications of the product.

Model: SE1-8-440-VG

Sidewall Direct Drive Fan

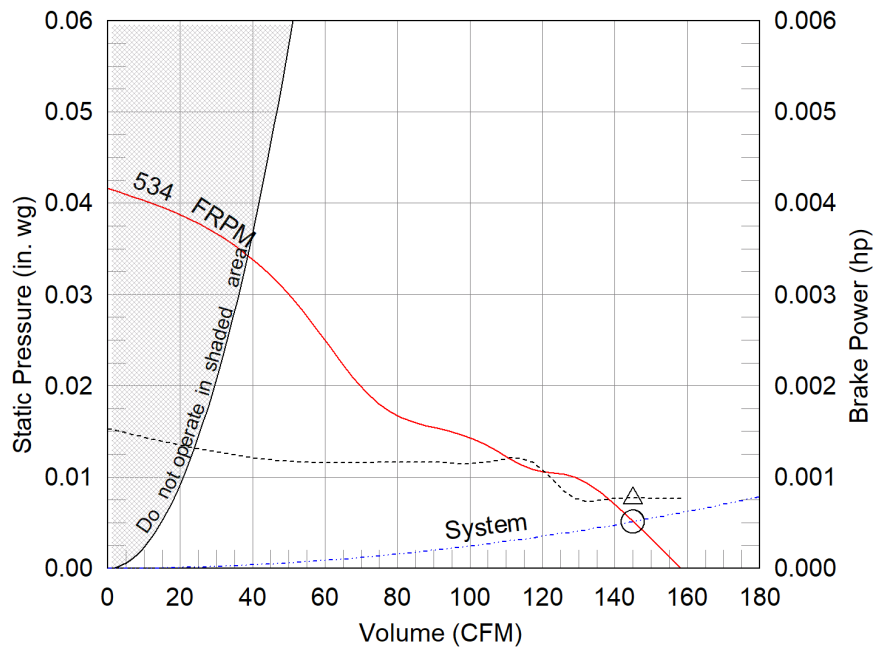
Motor Access From Int. of Bldg.

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	16
Weight w/ Acc's (lb)	25
Wall Opening (in.)	10.5 x 10.5



EXHAUST AIRFLOW

Performance	
Requested Volume (CFM)	145
Actual Volume (CFM)	145
Total External SP (in. wg)	0.005
Fan RPM	534
Operating Power (hp)	0
Elevation (ft)	2,162
Airstream Temp.(F)	90
Air Density (lb/ft3)	0.067
Tip Speed (ft/min)	1,118
Static Eff. (%)	15



Motor	
Motor Mounted	Yes
Size (hp)	1/15
Voltage/Cycle/Phase	115/60/1
Enclosure	TENV
Motor RPM	1725
Efficiency Rating	High
Windings	1
FLA (Amps)	1.3

- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- System curve
- Brake horsepower curve

Static Pressure Calculations

External SP	0 in. wg
Weatherhood	0.005 in. wg
Total External SP	0.005 in. wg

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	30	23	23	26	22	16	11	5	27	15	0.0

Notes:

All dimensions shown are in units of in.
*NEC FLA - based on tables 430.248 or 430.250 of National Electrical Code 2017. Actual motor FLA may vary, for sizing thermal overload, consult factory.
LwA - A weighted sound power level, based on ANSI S1.4
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
Sones - calculated using AMCA 301 at 5 ft



Model: SE1-8-440-VG

Sidewall Direct Drive Fan

Standard Construction Features:

- Fan panels of galvanized steel - Aluminum blade propeller - Heavy gauge welded wire motor supports and fan guard that is Zinc plated - Motor mounted to support guard with neoprene isolators - Corrosion resistant fasteners

Selected Options & Accessories:

Motor - Vari-Green EC motor with Dial ONLY (Not capable for field conversion to 0-10)

Control - Dial for balancing

Airflow Direction: Exhaust

Motor Access: From Int. of Bldg.

Weatherhood, Galvanized 45 deg. with Bird Screen

Unit Warranty: 1 Yr (Standard)

AMCA



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