

Project Information

For:

Design Information

	Htg	Clg	Infiltration	
Outside db (°F)	27	99	Method	Simplified
Inside db (°F)	70	75	Construction quality	Average
Design TD (°F)	43	24	Fireplaces	0
Daily range	-	M		
Inside humidity (%)	50	50		
Moisture difference (gr/lb)	38	26		

HEATING EQUIPMENT

Make	LENNOX
Trade	
Model	ML14XP1-024-230A
AHRI ref	
Efficiency	9 HSPF
Heating input	
Heating output	22000 Btuh @ 47°F
Temperature rise	26 °F
Actual air flow	800 cfm
Air flow factor	0.045 cfm/Btuh
Static pressure	0.50 in H2O
Space thermostat	
Capacity balance point = 0 °F	

Backup:

Input = 36 kW, Output = 123712 Btuh, 100 AFUE

COOLING EQUIPMENT

Make	LENNOX
Trade	
Cond	ML14XP1-024-230A
Coil	CBA38MV-024-230
AHRI ref	
Efficiency	16 SEER
Sensible cooling	16660 Btuh
Latent cooling	7140 Btuh
Total cooling	23800 Btuh
Actual air flow	800 cfm
Air flow factor	0.079 cfm/Btuh
Static pressure	0.50 in H2O
Load sensible heat ratio	0.92

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
Storage+Stair+Mud	284	2873	1461	128	116
Loundry+Gym Bath	296	3189	1642	142	130
Gym	1016	11879	7014	530	555
AHU 1	1595	17941	10116	800	800
Other equip loads		0	1706		
Equip. @ 1.04 RSM			12308		
Latent cooling			1000		
TOTALS	1595	17941	13308	800	800

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Project Information

For:

Design Information

	Htg	Clg	Infiltration	
Outside db (°F)	27	99	Method	Simplified
Inside db (°F)	70	75	Construction quality	Average
Design TD (°F)	43	24	Fireplaces	0
Daily range	-	M		
Inside humidity (%)	50	50		
Moisture difference (gr/lb)	38	26		

HEATING EQUIPMENT

Make	LENNOX
Trade	
Model	ML14XP1-060-230A
AHRI ref	202573613
Efficiency	9 HSPF
Heating input	
Heating output	54500 Btuh @ 47°F
Temperature rise	31 °F
Actual air flow	1630 cfm
Air flow factor	0.046 cfm/Btuh
Static pressure	0.50 in H2O
Space thermostat	
Capacity balance point = 0 °F	

Backup:

Input = 36 kW, Output = 123712 Btuh, 100 AFUE

COOLING EQUIPMENT

Make	LENNOX
Trade	
Cond	ML14XP1-060-230A
Coil	CBA38MV-060-230
AHRI ref	202573613
Efficiency	16 SEER
Sensible cooling	39900 Btuh
Latent cooling	17100 Btuh
Total cooling	57000 Btuh
Actual air flow	1630 cfm
Air flow factor	0.044 cfm/Btuh
Static pressure	0.50 in H2O
Load sensible heat ratio	0.96

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
Media	298	294	198	14	9
Living	302	2131	1565	98	68
Bedroom #3	189	3232	2798	149	122
Puja	112	3202	5093	147	222
Office 1	331	8921	9096	411	396
Entry	279	4890	4991	225	217
Hall+Stair	329	3811	4168	175	182
Game	388	4171	4637	192	202
Bath #2	78	489	242	23	11
Bath #3	112	848	509	39	22
Bedroom #2	195	3424	4121	158	180

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AHU 2	2614	35413	37419	1630	1630
Other equip loads		0	1706		
Equip. @ 1.04 RSM			40730		
Latent cooling			1601		
TOTALS	2614	35413	42330	1630	1630

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Design Information

	Htg	Clg	Infiltration	
Outside db (°F)	27	99	Method	Simplified
Inside db (°F)	70	75	Construction quality	Average
Design TD (°F)	43	24	Fireplaces	0
Daily range	-	M		
Inside humidity (%)	50	50		
Moisture difference (gr/lb)	38	26		

HEATING EQUIPMENT

Make	LENNOX
Trade	
Model	ML14XP1-060-230A
AHRI ref	202573613
Efficiency	9 HSPF
Heating input	
Heating output	54500 Btuh @ 47°F
Temperature rise	31 °F
Actual air flow	1630 cfm
Air flow factor	0.049 cfm/Btuh
Static pressure	0.50 in H2O
Space thermostat	
Capacity balance point = 0 °F	

Backup:

Input = 36 kW, Output = 123712 Btuh, 100 AFUE

COOLING EQUIPMENT

Make	LENNOX
Trade	
Cond	ML14XP1-060-230A
Coil	CBA38MV-060-230
AHRI ref	202573613
Efficiency	16 SEER
Sensible cooling	39900 Btuh
Latent cooling	17100 Btuh
Total cooling	57000 Btuh
Actual air flow	1630 cfm
Air flow factor	0.047 cfm/Btuh
Static pressure	0.50 in H2O
Load sensible heat ratio	0.96

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
Family	520	4908	12948	242	604
Bar	55	1060	1808	52	84
Main Bath	330	4643	4490	229	209
Main Bedroom	287	3642	2076	179	97
Main Closet	264	3799	1991	187	93
Kitchen	591	5695	4530	280	211
Dining	256	5299	4915	261	229
Butter Panty	360	2189	1134	108	53
Stair 1FL	144	1876	1063	92	50

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AHU 3	2807	33111	34955	1630	1630
Other equip loads		0	1706		
Equip. @ 1.04 RSM			38164		
Latent cooling			1595		
TOTALS	2807	33111	39759	1630	1630

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Project Information

For:

Design Information

	Htg	Clg	Infiltration	
Outside db (°F)	27	99	Method	Simplified
Inside db (°F)	70	75	Construction quality	Average
Design TD (°F)	43	24	Fireplaces	0
Daily range	-	M		
Inside humidity (%)	50	50		
Moisture difference (gr/lb)	38	26		

HEATING EQUIPMENT

Make	LENNOX
Trade	
Model	ML14XP1-042-230A
AHRI ref	20256774
Efficiency	9 HSPF
Heating input	
Heating output	39500 Btuh @ 47°F
Temperature rise	26 °F
Actual air flow	1400 cfm
Air flow factor	0.038 cfm/Btuh
Static pressure	0.50 in H2O
Space thermostat	
Capacity balance point = 0 °F	

Backup:

Input = 11 kW, Output = 37247 Btuh, 100 AFUE

COOLING EQUIPMENT

Make	LENNOX
Trade	
Cond	ML14XP1-042-230A
Coil	CBA38MV-042-230
AHRI ref	20256774
Efficiency	16 SEER
Sensible cooling	29400 Btuh
Latent cooling	12600 Btuh
Total cooling	42000 Btuh
Actual air flow	1400 cfm
Air flow factor	0.046 cfm/Btuh
Static pressure	0.50 in H2O
Load sensible heat ratio	0.94

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
Stairwell	402	4150	3067	156	141
Bedroom #6	394	4377	3084	165	142
Open Below	638	4559	5639	171	259
Stairweel 2FL	368	2387	1338	90	61
Office 2	348	7534	9243	283	425
Hall	434	5824	3583	219	165
Future Work	695	8416	4526	316	208

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AHU 4	3280	37247	30481	1400	1400
Other equip loads		0	0		
Equip. @ 1.04 RSM			31731		
Latent cooling			1942		
TOTALS	3280	37247	33673	1400	1400

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Project Information

For:

Design Conditions

Location:

Elevation: ft
Latitude: °N

Outdoor:

Dry bulb (°F)
Daily range (°F)
Wet bulb (°F)
Wind speed (mph)

Heating

27
-
-
15.0

Cooling

99
19 (M)
75
7.5

Indoor:

Indoor temperature (°F)
Design TD (°F)
Relative humidity (%)
Moisture difference (gr/lb)

Heating

70
43
50
38.4

Cooling

75
24
50
26.4

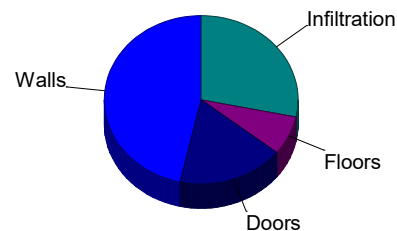
Infiltration:

Method
Construction quality
Fireplaces

Simplified
Average
0

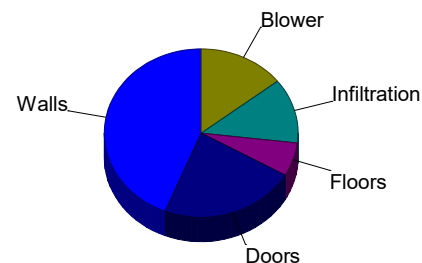
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.7	8345	46.5
Glazing	0	0	0
Doors	13.7	3180	17.7
Ceilings	0	0	0
Floors	0.8	1342	7.5
Infiltration	2.9	5075	28.3
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	0
Total		17941	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	2.3	5192	43.9
Glazing	0	0	0
Doors	11.6	2691	22.8
Ceilings	0	0	0
Floors	0.5	759	6.4
Infiltration	0.8	1474	12.5
Ducts		0	0
Ventilation		0	0
Internal gains		0	0
Blower		1706	14.4
Adjustments		0	0
Total		11823	100.0



Latent Cooling Load = 1000 Btuh

Overall U-value = 0.099 Btuh/ft²-°F, Window / Floor Area = 0.0 %

WARNING: window to floor area ratio = 0.0% - less than 5%.

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Project Information

For:

Design Conditions

Location:

Elevation: ft
Latitude: °N

Outdoor:

Dry bulb (°F)
Daily range (°F)
Wet bulb (°F)
Wind speed (mph)

Heating

27
-
-
15.0

Cooling

99
19 (M)
75
7.5

Indoor:

Indoor temperature (°F)
Design TD (°F)
Relative humidity (%)
Moisture difference (gr/lb)

Heating

70
43
50
38.4

Cooling

75
24
50
26.4

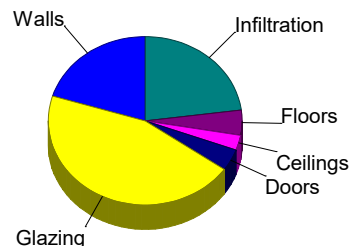
Infiltration:

Method
Construction quality
Fireplaces

Simplified
Average
0

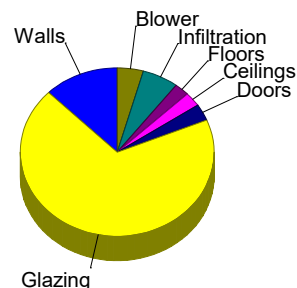
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.7	7175	20.3
Glazing	21.3	15913	44.9
Doors	10.6	1470	4.2
Ceilings	0.6	1025	2.9
Floors	0.8	1708	4.8
Infiltration	2.9	8122	22.9
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	0
Total		35413	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	2.5	4893	12.5
Glazing	36.0	26884	68.7
Doors	9.0	1244	3.2
Ceilings	0.7	1072	2.7
Floors	0.4	967	2.5
Infiltration	0.8	2360	6.0
Ducts		0	0
Ventilation		0	0
Internal gains		0	0
Blower		1706	4.4
Adjustments		0	0
Total		39125	100.0



Latent Cooling Load = 1601 Btuh

Overall U-value = 0.112 Btuh/ft²·°F, Window / Floor Area = 28.6 %

WARNING: window to floor area ratio = 28.6% - more than 25%.

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Project Information

For:

Design Conditions

Location:

Elevation: ft
Latitude: °N

Outdoor:

Dry bulb (°F)
Daily range (°F)
Wet bulb (°F)
Wind speed (mph)

Heating

27
-
-
15.0

Cooling

99
19 (M)
75
7.5

Indoor:

Indoor temperature (°F)
Design TD (°F)
Relative humidity (%)
Moisture difference (gr/lb)

Heating

70
43
50
38.4

Cooling

75
24
50
26.4

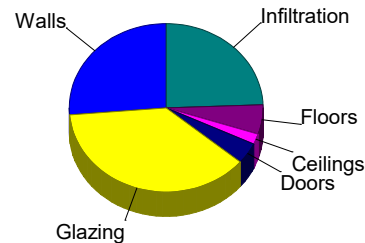
Infiltration:

Method
Construction quality
Fireplaces

Simplified
Average
0

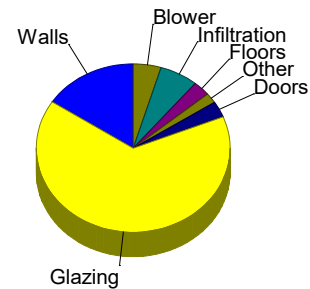
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.7	8716	26.3
Glazing	21.3	12431	37.5
Doors	10.6	1342	4.1
Ceilings	0.6	671	2.0
Floors	0.8	1861	5.6
Infiltration	2.9	8091	24.4
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	0
Total		33111	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	2.4	5769	15.7
Glazing	41.0	23945	65.3
Doors	9.0	1136	3.1
Ceilings	0.7	702	1.9
Floors	0.5	1053	2.9
Infiltration	0.8	2350	6.4
Ducts		0	0
Ventilation		0	0
Internal gains		0	0
Blower		1706	4.7
Adjustments		0	0
Total		36661	100.0



Latent Cooling Load = 1595 Btuh
Overall U-value = 0.114 Btuh/ft²-°F, Window / Floor Area = 20.8 %

Data entries checked.

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Project Information

For:

Design Conditions

Location:

Elevation: ft
Latitude: °N

Outdoor:

Dry bulb (°F)
Daily range (°F)
Wet bulb (°F)
Wind speed (mph)

Heating

27
-
-
15.0

Cooling

99
19 (M)
75
7.5

Indoor:

Indoor temperature (°F)
Design TD (°F)
Relative humidity (%)
Moisture difference (gr/lb)

Heating

70
43
50
38.4

Cooling

75
24
50
26.4

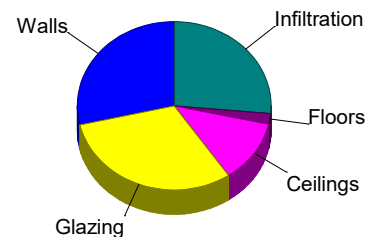
Infiltration:

Method
Construction quality
Fireplaces

Simplified
Average
0

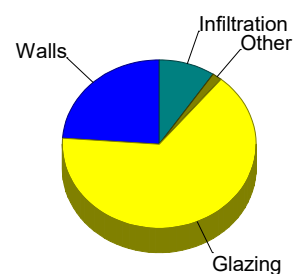
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.7	10661	28.6
Glazing	21.3	11502	30.9
Doors	0	0	0
Ceilings	1.4	4471	12.0
Floors	1.5	757	2.0
Infiltration	2.9	9855	26.5
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	0
Total		37247	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	2.5	7270	23.9
Glazing	36.8	19848	65.1
Doors	0	0	0
Ceilings	0.1	478	1.6
Floors	0.0	23	0.1
Infiltration	0.8	2863	9.4
Ducts		0	0
Ventilation		0	0
Internal gains		0	0
Blower		0	0
Adjustments		0	0
Total		30481	100.0



Latent Cooling Load = 1942 Btuh

Overall U-value = 0.089 Btuh/ft²-°F, Window / Floor Area = 16.5 %

Data entries checked.

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Project Information

For:

Notes:

Design Information

Weather: Dallas Fort Worth, TX, US

Winter Design Conditions

Outside db 27 °F
Inside db 70 °F
Design TD 43 °F

Ventilation Method ASHRAE 62.2-2019

Heating Summary

Structure 17941 Btuh
Ducts 0 Btuh
Central vent (0 cfm) 0 Btuh

Humidification 0 Btuh
Piping 0 Btuh
Equipment load 17941 Btuh

Infiltration

Method Simplified
Construction quality Average
Fireplaces 0

	Heating	Cooling
Area (ft²)	1595	1595
Volume (ft³)	17548	17548
Air changes/hour	0.38	0.19
Equiv. AVF (cfm)	111	57

Heating Equipment Summary

Make LENNOX
Trade
Model ML14XP1-024-230A
AHRI ref

Efficiency 9 HSPF
Heating input
Heating output 22000 Btuh @ 47°F
Temperature rise 26 °F
Actual air flow 800 cfm
Air flow factor 0.045 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 0 °F

Backup:
Input = 36 kW, Output = 123712 Btuh, 100 AFUE

Summer Design Conditions

Outside db 99 °F
Inside db 75 °F
Design TD 24 °F
Daily range M
Relative humidity 50 %
Moisture difference 26 gr/lb

Sensible Cooling Equipment Load Sizing

Structure 10116 Btuh
Ducts 0 Btuh
Central vent (0 cfm) 0 Btuh

Blower 1706 Btuh

Use manufacturer's data n
Rate/swing multiplier 1.04
Equipment sensible load 12308 Btuh

Latent Cooling Equipment Load Sizing

Structure 1000 Btuh
Ducts 0 Btuh
Central vent (0 cfm) 0 Btuh

Equipment latent load 1000 Btuh

Equipment Total Load (Sen+Lat) 13308 Btuh
Req. total capacity at 0.70 SHR 1.5 ton

Cooling Equipment Summary

Make LENNOX
Trade
Cond ML14XP1-024-230A
Coil CBA38MV-024-230
AHRI ref
Efficiency 16 SEER
Sensible cooling 16660 Btuh
Latent cooling 7140 Btuh
Total cooling 23800 Btuh
Actual air flow 800 cfm
Air flow factor 0.079 cfm/Btuh
Static pressure 0.50 in H2O
Load sensible heat ratio 0.92

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Project Information

For:

Notes:

Design Information

Weather:

Winter Design Conditions

Outside db 27 °F
Inside db 70 °F
Design TD 43 °F

Ventilation Method ASHRAE 62.2-2019

Heating Summary

Structure 35413 Btuh
Ducts 0 Btuh
Central vent (0 cfm) 0 Btuh

Humidification 0 Btuh
Piping 0 Btuh
Equipment load 35413 Btuh

Infiltration

Method Simplified
Construction quality Average
Fireplaces 0

	Heating	Cooling
Area (ft²)	2614	2614
Volume (ft³)	28751	28751
Air changes/hour	0.37	0.19
Equiv. AVF (cfm)	177	91

Heating Equipment Summary

Make LENNOX
Trade
Model ML14XP1-060-230A
AHRI ref 202573613

Efficiency 9 HSPF
Heating input
Heating output 54500 Btuh @ 47°F
Temperature rise 31 °F
Actual air flow 1630 cfm
Air flow factor 0.046 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 0 °F

Backup:
Input = 36 kW, Output = 123712 Btuh, 100 AFUE

Summer Design Conditions

Outside db 99 °F
Inside db 75 °F
Design TD 24 °F
Daily range M
Relative humidity 50 %
Moisture difference 26 gr/lb

Sensible Cooling Equipment Load Sizing

Structure 37419 Btuh
Ducts 0 Btuh
Central vent (0 cfm) 0 Btuh

Blower 1706 Btuh

Use manufacturer's data n
Rate/swing multiplier 1.04
Equipment sensible load 40730 Btuh

Latent Cooling Equipment Load Sizing

Structure 1601 Btuh
Ducts 0 Btuh
Central vent (0 cfm) 0 Btuh

Equipment latent load 1601 Btuh

Equipment Total Load (Sen+Lat) 42330 Btuh
Req. total capacity at 0.70 SHR 4.8 ton

Cooling Equipment Summary

Make LENNOX
Trade
Cond ML14XP1-060-230A
Coil CBA38MV-060-230
AHRI ref 202573613

Efficiency 16 SEER
Sensible cooling 39900 Btuh
Latent cooling 17100 Btuh
Total cooling 57000 Btuh
Actual air flow 1630 cfm
Air flow factor 0.044 cfm/Btuh
Static pressure 0.50 in H2O
Load sensible heat ratio 0.96

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Calculations approved by ACCA to meet all requirements of Manual S-9.2E.

Project Information

For:

Notes:

Design Information

Weather:

Winter Design Conditions

Outside db 27 °F
Inside db 70 °F
Design TD 43 °F

Ventilation Method MJ8

Heating Summary

Structure 33111 Btuh
Ducts 0 Btuh
Central vent (0 cfm) 0 Btuh

Humidification 0 Btuh
Piping 0 Btuh
Equipment load 33111 Btuh

Infiltration

Method Simplified
Construction quality Average
Fireplaces 0

	Heating	Cooling
Area (ft²)	2807	2807
Volume (ft³)	30880	30880
Air changes/hour	0.34	0.18
Equiv. AVF (cfm)	176	90

Heating Equipment Summary

Make LENNOX
Trade
Model ML14XP1-060-230A
AHRI ref 202573613

Efficiency 9 HSPF
Heating input
Heating output 54500 Btuh @ 47°F
Temperature rise 31 °F
Actual air flow 1630 cfm
Air flow factor 0.049 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 0 °F

Backup:
Input = 36 kW, Output = 123712 Btuh, 100 AFUE

Summer Design Conditions

Outside db 99 °F
Inside db 75 °F
Design TD 24 °F
Daily range M
Relative humidity 50 %
Moisture difference 26 gr/lb

Sensible Cooling Equipment Load Sizing

Structure 34955 Btuh
Ducts 0 Btuh
Central vent (0 cfm) 0 Btuh

Blower 1706 Btuh

Use manufacturer's data n
Rate/swing multiplier 1.04
Equipment sensible load 38164 Btuh

Latent Cooling Equipment Load Sizing

Structure 1595 Btuh
Ducts 0 Btuh
Central vent (0 cfm) 0 Btuh

Equipment latent load 1595 Btuh

Equipment Total Load (Sen+Lat) 39759 Btuh
Req. total capacity at 0.70 SHR 4.5 ton

Cooling Equipment Summary

Make LENNOX
Trade
Cond ML14XP1-060-230A
Coil CBA38MV-060-230
AHRI ref 202573613

Efficiency 16 SEER
Sensible cooling 39900 Btuh
Latent cooling 17100 Btuh
Total cooling 57000 Btuh
Actual air flow 1630 cfm
Air flow factor 0.047 cfm/Btuh
Static pressure 0.50 in H2O
Load sensible heat ratio 0.96

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Calculations approved by ACCA to meet all requirements of Manual S-9.2E.

Project Information

For:

Notes:

Design Information

Weather:

Winter Design Conditions

Outside db 27 °F
Inside db 70 °F
Design TD 43 °F

Ventilation Method MJ8

Heating Summary

Structure 37247 Btuh
Ducts 0 Btuh
Central vent (0 cfm) 0 Btuh

Humidification 0 Btuh
Piping 0 Btuh
Equipment load 37247 Btuh

Infiltration

Method Simplified
Construction quality Average
Fireplaces 0

	Heating	Cooling
Area (ft²)	3280	3280
Volume (ft³)	32800	32800
Air changes/hour	0.39	0.20
Equiv. AVF (cfm)	215	110

Heating Equipment Summary

Make LENNOX
Trade
Model ML14XP1-042-230A
AHRI ref 20256774

Efficiency 9 HSPF
Heating input
Heating output 39500 Btuh @ 47°F
Temperature rise 26 °F
Actual air flow 1400 cfm
Air flow factor 0.038 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 0 °F

Backup:
Input = 11 kW, Output = 37247 Btuh, 100 AFUE

Summer Design Conditions

Outside db 99 °F
Inside db 75 °F
Design TD 24 °F
Daily range M
Relative humidity 50 %
Moisture difference 26 gr/lb

Sensible Cooling Equipment Load Sizing

Structure 30481 Btuh
Ducts 0 Btuh
Central vent (0 cfm) 0 Btuh

Blower 0 Btuh

Use manufacturer's data n
Rate/swing multiplier 1.04
Equipment sensible load 31731 Btuh

Latent Cooling Equipment Load Sizing

Structure 1942 Btuh
Ducts 0 Btuh
Central vent (0 cfm) 0 Btuh

Equipment latent load 1942 Btuh

Equipment Total Load (Sen+Lat) 33673 Btuh
Req. total capacity at 0.70 SHR 3.8 ton

Cooling Equipment Summary

Make LENNOX
Trade
Cond ML14XP1-042-230A
Coil CBA38MV-042-230
AHRI ref 20256774

Efficiency 16 SEER
Sensible cooling 29400 Btuh
Latent cooling 12600 Btuh
Total cooling 42000 Btuh
Actual air flow 1400 cfm
Air flow factor 0.046 cfm/Btuh
Static pressure 0.50 in H2O
Load sensible heat ratio 0.94

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Project Information

For:

Design Conditions

Location:				Indoor:	Heating	Cooling
Elevation:	ft			Indoor temperature (°F)	70	75
Latitude:	°N			Design TD (°F)	43	24
Outdoor:		Heating	Cooling	Relative humidity (%)	50	50
				Moisture difference (gr/lb)	38.4	26.4
	Dry bulb (°F)	27	99	Infiltration:		
	Daily range (°F)	-	19 (M)	Method	Simplified	
	Wet bulb (°F)	-	75	Construction quality	Average	
	Wind speed (mph)	15.0	7.5	Fireplaces	0	

Construction descriptions

	Or	Area ft²	U-value Btuh/ft²·°F	Insul R ft²·°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls 12D-0sw: Frm wall, vnl ext, r-15 cav ins, 2"x4" wood frm, 16" o.c. stud	n	77	0.086	15.0	3.66	282	2.50	192
	e	654	0.086	15.0	3.66	2398	2.50	1635
	s	441	0.086	15.0	3.66	1616	2.50	1102
	w	372	0.086	15.0	3.66	1363	2.50	929
	all	1544	0.086	15.0	3.66	5658	2.50	3859

Partitions

12C-0sw: Frm wall, stucco ext, r-13 cav ins, 2"x4" wood frm, 16" o.c. stud		693	0.091	13.0	3.88	2686	1.92	1334
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Windows

(none)

Doors

DftDoor: Door, mtl fbrgl type, mtl strn	s	24	0.250	4.0	10.6	256	9.01	216
	s	96	0.330	3.0	14.1	1350	11.9	1142
	w	112	0.330	3.0	14.1	1574	11.9	1332
	all	232	0.330	4.0	13.7	3180	11.6	2691

Ceilings

(none)

Floors

19C-9cscp: Flr floor, wd flr, 1" thkns, carpet flr fnsh, r-10 ext ins, tight crwl ovr, r-11 wall insul		1595	0.082	20.0	0.84	1342	0.48	759
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Project Information

For:

Design Conditions

Location:

Elevation: ft
Latitude: °N

Outdoor:

Dry bulb (°F)	27	99
Daily range (°F)	-	19 (M)
Wet bulb (°F)	-	75
Wind speed (mph)	15.0	7.5

Indoor:

Indoor temperature (°F)
Design TD (°F)
Relative humidity (%)
Moisture difference (gr/lb)

Heating

70	75
43	24
50	50
38.4	26.4

Cooling

75
24
50
26.4

Infiltration:

Method	Simplified
Construction quality	Average
Fireplaces	0

Construction descriptions

Walls

12D-0sw: Frm wall, vnl ext, r-15 cav ins, 2"x4" wood frm, 16" o.c. stud

Or	Area ft²	U-value Btuh/ft²·°F	Insul R ft²·°F/Btuh	Htg HTM Btuh/ft²	Loss Ctg HTM Btuh	Gain Btuh	
n	632	0.086	15.0	3.66	2317	2.50	1580
e	598	0.086	15.0	3.66	2192	2.50	1495
s	174	0.086	15.0	3.66	636	2.50	433
w	554	0.086	15.0	3.66	2030	2.50	1384
all	1958	0.086	15.0	3.66	7175	2.50	4893

Partitions

(none)

Windows

Window4: 1 glazing, clr glz, mtl no brk frm mat, 1/8" thk; 6.67 ft head ht

n	245	0.500	0	21.3	5218	20.3	4963
n	30	0.500	0	21.3	639	20.3	608
e	222	0.500	0	21.3	4730	50.3	11181
s	96	0.500	0	21.3	2045	24.8	2380
w	128	0.500	0	21.3	2726	50.3	6444
all	721	0.500	0	21.3	15359	35.5	25575
e	26	0.500	0	21.3	554	50.3	1309

Window4: 1 glazing, clr glz, mtl no brk frm mat, 1/8" thk; 8 ft head ht

Doors

DftDoor: Door, mtl fbrgl type, mtl strm

e	138	0.250	4.0	10.6	1470	9.01	1244
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Ceilings

R60 CEILING METAL ROOFING: Rf/dlg ceiling, mtl roof mat, frm cons, r-20 deck ins, 5/8" gypsum board int fnsh, 12" thkns, r-56 ceil ins

1604	0.015	60.0	0.64	1025	0.67	1072
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Floors

19C-19cscp: Flr floor, frm flr, 6" thkns, carpet flr fnsh, r-2 ext ins, r-19 cav ins, tight crwl ovr, r-11 wall insul

1155	0.049	30.0	0.72	836	0.41	473
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19C-9cscp: Flr floor, wd flr, 1" thkns, carpet flr fnsh, r-10 ext ins, tight crwl
ovr. r-11 wall insul

1038	0.082	20.0	0.84	873	0.48	494
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Project Information

For:

Design Conditions

Location:

Elevation: ft
Latitude: °N

Outdoor:

Dry bulb (°F)	27	99
Daily range (°F)	-	19 (M)
Wet bulb (°F)	-	75
Wind speed (mph)	15.0	7.5

Indoor:

Indoor temperature (°F)
Design TD (°F)
Relative humidity (%)
Moisture difference (gr/lb)

Heating

70	75
43	24
50	50
38.4	26.4

Cooling

75
24
50
26.4

Infiltration:

Method	Simplified
Construction quality	Average
Fireplaces	0

Construction descriptions

Walls

12D-0sw: Frm wall, vnl ext, r-15 cav ins, 2"x4" wood frm, 16" o.c. stud

Or	Area ft²	U-value Btuh/ft²·°F	Insul R ft²·°F/Btuh	Htg HTM Btuh/ft²	Loss Ctg HTM Btuh	Gain Btuh
n	673	0.086	15.0	3.66	2467	1682
e	792	0.086	15.0	3.66	2903	1980
s	761	0.086	15.0	3.66	2789	1902
w	683	0.086	15.0	3.66	2502	1706
all	2910	0.086	15.0	3.66	10661	7270

Partitions

(none)

Windows

Window4: 1 glazing, clr glz, mtl no brk frm mat, 1/8" thk; 6.67 ft head ht

n	177	0.500	0	21.3	3763	20.3	3579
e	82	0.500	0	21.3	1757	50.3	4153
s	89	0.500	0	21.3	1892	24.8	2203
w	192	0.500	0	21.3	4090	50.3	9666
all	540	0.500	0	21.3	11502	36.3	19601

Doors

(none)

Ceilings

R32Roof

3280	0.032	31.5	1.36	4471	0.15	478
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Floors

19C-19cscp: Flr floor, frm flr, 6" thkns, carpet flr fnsh, r-2 ext ins, r-19 cav ins, tight cowl ovr, r-11 wall insul

55	0.049	30.0	0.72	40	0.41	23
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22D-15cph: Bg floor, heavy damp soil, prm ext ins cov, on grade depth, r-20 edge ins, r-20 ins, carpet flr fnsh

42	0.401	20.0	17.1	717	0	0
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Project Information

For:

Design Conditions

Location:				Indoor:	Heating	Cooling
Elevation:	ft			Indoor temperature (°F)	70	75
Latitude:	°N			Design TD (°F)	43	24
Outdoor:		Heating	Cooling	Relative humidity (%)	50	50
	Dry bulb (°F)	27	99	Moisture difference (gr/lb)	38.4	26.4
	Daily range (°F)	-	19 (M)	Infiltration:	Simplified Average	
	Wet bulb (°F)	-	75			
	Wind speed (mph)	15.0	7.5	Method		
				Construction quality		
				Fireplaces	0	

Construction descriptions

	Or	Area ft²	U-value Btuh/ft²·°F	Insul R ft²·°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12D-0sw: Frm wall, vnl ext, r-15 cav ins, 2"x4" wood frm, 16" o.c. stud	n	476	0.086	15.0	3.66	1742	2.50	1188
	e	325	0.086	15.0	3.66	1190	2.50	812
	s	1028	0.086	15.0	3.66	3764	2.50	2567
	w	295	0.086	15.0	3.66	1081	2.50	737
	all	2123	0.086	15.0	3.66	7777	2.50	5304
Partitions								
12C-0sw: Frm wall, stucco ext, r-13 cav ins, 2"x4" wood frm, 16" o.c. stud		242	0.091	13.0	3.88	938	1.92	466
Windows								
Window4: 1 glazing, clr glz, mtl no brk frm mat, 1/8" thk; 6.67 ft head ht	n	96	0.500	0	21.3	2055	20.3	1955
	e	16	0.500	0	21.3	341	50.3	806
	e	83	0.500	0	21.3	1761	35.2	2913
	s	128	0.500	0	21.3	2726	24.8	3174
	w	260	0.500	0	21.3	5548	50.3	13113
	all	584	0.500	0	21.3	12431	37.6	21960
Doors								
DftDoor: Door, mtl fbgrl type, mtl strn	s	126	0.250	4.0	10.6	1342	9.01	1136
Ceilings								
R60 CEILING METAL ROOFING: Rf/dg ceiling, mtl roof mat, frm cons, r-20 deck ins, 5/8" gypsum board int fnsh, 12" thkns, r-56 cell ins		1050	0.015	60.0	0.64	671	0.67	702
Floors								
19C-9cscp: Flr floor, wd flr, 1" thkns, carpet flr fnsh, r-10 ext ins, tight cowl ovr, r-11 wall insul		2212	0.082	20.0	0.84	1861	0.48	1053

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Project Information

For:

Cooling Equipment

Design Conditions

Outdoor design DB:	99.1°F	Sensible gain:	11823	Btuh	Entering coil DB:	77.0°F
Outdoor design WB:	74.6°F	Latent gain:	1000	Btuh	Entering coil WB:	63.1°F
Indoor design DB:	75.0°F	Total gain:	12823	Btuh		
Indoor RH:	50%	Estimated airflow:	800	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP			
Manufacturer:	LENNOX	Model:	ML14XP1-024-230A+CBA38MV-024-230	
Actual airflow:	800	cfm		
Sensible capacity:	16660	Btuh	141% of load	
Latent capacity:	7140	Btuh	714% of load	
Total capacity:	23800	Btuh	186% of load	SHR: 70%

Heating Equipment

Design Conditions

Outdoor design DB:	27.4°F	Heat loss:	17941	Btuh	Entering coil DB:	70.0°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP			
Manufacturer:	LENNOX	Model:	ML14XP1-024-230A+CBA38MV-024-230	
Actual airflow:	800	cfm		
Output capacity:	22000	Btuh	123% of load	Capacity balance: 0 °F
Supplemental heat required:	0	Btuh		Economic balance: 0 °F

Backup equipment type:	Elec strip			
Manufacturer:		Model:		
Actual airflow:	800	cfm		
Output capacity:	36.3	kW	690% of load	Temp. rise: 0 °F

Meets all requirements of ACCA Manual S.

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Project Information

For:

Cooling Equipment

Design Conditions

Outdoor design DB:	99.1°F	Sensible gain:	39125	Btuh	Entering coil DB:	76.0°F
Outdoor design WB:	74.6°F	Latent gain:	1601	Btuh	Entering coil WB:	62.8°F
Indoor design DB:	75.0°F	Total gain:	40726	Btuh		
Indoor RH:	50%	Estimated airflow:	1630	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	LENNOX	Model:	ML14XP1-060-230A+CBA38MV-060-230		
Actual airflow:	1630	cfm			
Sensible capacity:	39900	Btuh	102% of load		
Latent capacity:	17100	Btuh	1068% of load		
Total capacity:	57000	Btuh	140% of load	SHR:	70%

Heating Equipment

Design Conditions

Outdoor design DB:	27.4°F	Heat loss:	35413	Btuh	Entering coil DB:	70.0°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	LENNOX	Model:	ML14XP1-060-230A+CBA38MV-060-230		
Actual airflow:	1630	cfm			
Output capacity:	54500	Btuh	154% of load	Capacity balance:	0 °F
Supplemental heat required:	0	Btuh		Economic balance:	0 °F

Backup equipment type:	Elec strip				
Manufacturer:		Model:			
Actual airflow:	1630	cfm			
Output capacity:	36.3	kW	349% of load	Temp. rise:	0 °F

Meets all requirements of ACCA Manual S.

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Project Information

For:

Cooling Equipment

Design Conditions

Outdoor design DB:	99.1°F	Sensible gain:	36661	Btuh	Entering coil DB:	76.0°F
Outdoor design WB:	74.6°F	Latent gain:	1595	Btuh	Entering coil WB:	62.8°F
Indoor design DB:	75.0°F	Total gain:	38256	Btuh		
Indoor RH:	50%	Estimated airflow:	1630	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	LENNOX	Model:	ML14XP1-060-230A+CBA38MV-060-230		
Actual airflow:	1630	cfm			
Sensible capacity:	39900	Btuh	109% of load		
Latent capacity:	17100	Btuh	1072% of load		
Total capacity:	57000	Btuh	149% of load	SHR:	70%

Heating Equipment

Design Conditions

Outdoor design DB:	27.4°F	Heat loss:	33111	Btuh	Entering coil DB:	70.0°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	LENNOX	Model:	ML14XP1-060-230A+CBA38MV-060-230		
Actual airflow:	1630	cfm			
Output capacity:	54500	Btuh	165% of load	Capacity balance:	0 °F
Supplemental heat required:	0	Btuh		Economic balance:	0 °F

Backup equipment type:	Elec strip				
Manufacturer:		Model:			
Actual airflow:	1630	cfm			
Output capacity:	36.3	kW	374% of load	Temp. rise:	0 °F

Meets all requirements of ACCA Manual S.

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Project Information

For:

Cooling Equipment

Design Conditions

Outdoor design DB:	99.1°F	Sensible gain:	30481	Btuh	Entering coil DB:	75.0°F
Outdoor design WB:	74.6°F	Latent gain:	1942	Btuh	Entering coil WB:	62.4°F
Indoor design DB:	75.0°F	Total gain:	32424	Btuh		
Indoor RH:	50%	Estimated airflow:	1400	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	LENNOX	Model:	ML14XP1-042-230A+CBA38MV-042-230		
Actual airflow:	1400	cfm			
Sensible capacity:	29400	Btuh	96% of load		
Latent capacity:	12600	Btuh	649% of load		
Total capacity:	42000	Btuh	130% of load	SHR:	70%

Heating Equipment

Design Conditions

Outdoor design DB:	27.4°F	Heat loss:	37247	Btuh	Entering coil DB:	70.0°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	LENNOX	Model:	ML14XP1-042-230A+CBA38MV-042-230		
Actual airflow:	1400	cfm			
Output capacity:	39500	Btuh	106% of load	Capacity balance:	0 °F
Supplemental heat required:	0	Btuh		Economic balance:	0 °F

Backup equipment type:	Elec strip				
Manufacturer:		Model:			
Actual airflow:	1400	cfm			
Output capacity:	10.9	kW	100% of load	Temp. rise:	0 °F

Meets all requirements of ACCA Manual S.

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