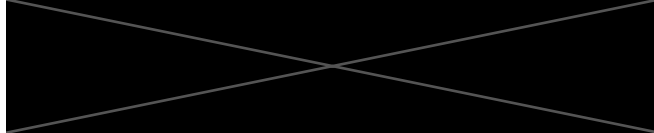


Project Information



Design Information

	Htg	Clg	Infiltration	
Outside db (°F)	0	87	Method	Simplified
Inside db (°F)	70	75	Construction quality	Tight
Design TD (°F)	70	12	Fireplaces	1 (Semi-tight)
Daily range	-	M		
Inside humidity (%)	30	50		
Moisture difference (gr/lb)	28	24		

HEATING EQUIPMENT

Make	Mitsubishi Electric
Trade	Mitsubishi Electric
Model	SUZ-KA24NAHZ
AHRI ref	211273651
Efficiency	8.4 HSPF2
Heating input	
Heating output	28800 Btuh @ 47°F
Temperature rise	36 °F
Actual air flow	735 cfm
Air flow factor	0.042 cfm/Btuh
Static pressure	0.60 in H2O
Space thermostat	
Capacity balance point = 4 °F	

COOLING EQUIPMENT

Make	Mitsubishi Electric
Trade	Mitsubishi Electric
Cond	SUZ-KA24NAHZ
Coil	SVZ-KP24NA*
AHRI ref	211273651
Efficiency	9.9 EER2, 16 SEER2
Sensible cooling	16800 Btuh
Latent cooling	7200 Btuh
Total cooling	24000 Btuh
Actual air flow	735 cfm
Air flow factor	0.076 cfm/Btuh
Static pressure	0.60 in H2O
Load sensible heat ratio	0.82

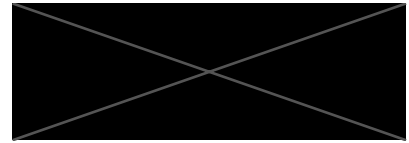
Backup: METUS Inc. American Standard/Mitsubishi Electric EH08-SVZ-S
 Input = 8 kW, Output = 27297 Btuh, 100 AFUE

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
Entry	84	1788	487	76	37
Mudroom	207	2795	494	119	38
1/2 Bath	34	999	192	42	15
Pantry	65	0	0	0	0
Stairs	84	0	0	0	0
Guest Vestibule	30	453	85	19	6
Guest BR	164	2087	493	89	37
Guest Bath	68	1539	644	65	49
Guest WC	44	1015	475	43	36
Great Rm	473	3409	3939	145	299
Kitchen	289	3235	2860	137	217

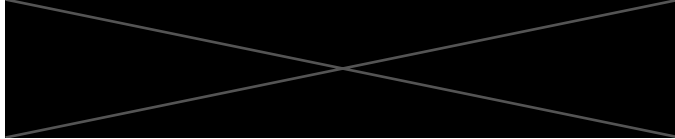
Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

1st Floor AH	1541	17321	9669	735	735
Other equip loads		3850	494		
Equip. @ 0.92 RSM			9329		
Latent cooling			2228		
TOTALS	1541	21171	11557	735	735

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



Project Information



Design Information

	Htg	Clg	Infiltration	
Outside db (°F)	0	87	Method	Simplified
Inside db (°F)	70	75	Construction quality	Tight
Design TD (°F)	70	12	Fireplaces	1 (Semi-tight)
Daily range	-	M		
Inside humidity (%)	30	50		
Moisture difference (gr/lb)	28	24		

HEATING EQUIPMENT

Make	Mitsubishi Electric
Trade	Mitsubishi Electric
Model	SUZ-KA18NAHZ
AHRI ref	211289256
Efficiency	9.2 HSPF2
Heating input	
Heating output	21600 Btuh @ 47°F
Temperature rise	29 °F
Actual air flow	675 cfm
Air flow factor	0.042 cfm/Btuh
Static pressure	0.60 in H2O
Space thermostat	
Capacity balance point = 6 °F	

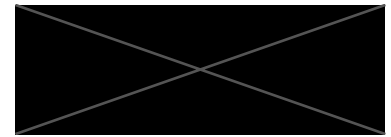
COOLING EQUIPMENT

Make	Mitsubishi Electric
Trade	Mitsubishi Electric
Cond	SUZ-KA18NAHZ
Coil	SVZ-KP18NA*
AHRI ref	211289256
Efficiency	12.4 EER2, 18.7 SEER2
Sensible cooling	12600 Btuh
Latent cooling	5400 Btuh
Total cooling	18000 Btuh
Actual air flow	675 cfm
Air flow factor	0.073 cfm/Btuh
Static pressure	0.60 in H2O
Load sensible heat ratio	0.92

Backup: METUS Inc. American Standard/Mitsubishi Electric EH05-SVZ-S
 Input = 5 kW, Output = 17061 Btuh, 100 AFUE

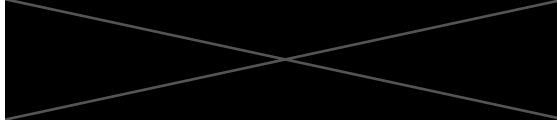
ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
Laundry	84	909	791	38	58
Loft	203	2725	1174	115	86
Work Area	147	2529	2008	107	146
Play Area	454	9851	5290	415	385
2nd Floor AH	889	16014	9263	675	675
Other equip loads		923	221		
Equip. @ 0.92 RSM			8707		
Latent cooling			805		
TOTALS	889	16937	9511	675	675

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



Project Information

For:



Design Information

	Htg	Clg	Infiltration	
Outside db (°F)	0	87	Method	Simplified
Inside db (°F)	70	75	Construction quality	Tight
Design TD (°F)	70	12	Fireplaces	1 (Semi-tight)
Daily range	-	M		
Inside humidity (%)	30	50		
Moisture difference (gr/lb)	28	24		

HEATING EQUIPMENT

Make	Mitsubishi Electric
Trade	Mitsubishi Electric
Model	SUZ-KA18NAHZ
AHRI ref	211289256
Efficiency	9.2 HSPF2
Heating input	
Heating output	21600 Btuh @ 47°F
Temperature rise	29 °F
Actual air flow	675 cfm
Air flow factor	0.052 cfm/Btuh
Static pressure	0.60 in H2O
Space thermostat	
Capacity balance point = 2 °F	

COOLING EQUIPMENT

Make	Mitsubishi Electric
Trade	Mitsubishi Electric
Cond	SUZ-KA18NAHZ
Coil	SVZ-KP18NA*
AHRI ref	211289256
Efficiency	12.4 EER2, 18.7 SEER2
Sensible cooling	12600 Btuh
Latent cooling	5400 Btuh
Total cooling	18000 Btuh
Actual air flow	675 cfm
Air flow factor	0.121 cfm/Btuh
Static pressure	0.60 in H2O
Load sensible heat ratio	0.86

Backup: METUS Inc. American Standard/Mitsubishi Electric EH05-SVZ-S
 Input = 5 kW, Output = 17061 Btuh, 100 AFUE

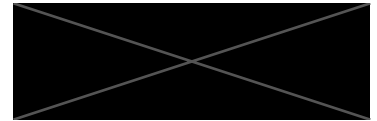
ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
P. Bedroom	210	3700	2043	192	247
P. Closet	81	204	50	11	6
P. Bath	60	889	348	46	42
P. WC	49	139	34	7	4
Linens	16	0	0	0	0
Bedroom 1	171	3034	1436	158	174
BR's Bath	36	404	52	21	6
BR's WC	36	90	22	5	3
Bedroom 2	195	2817	1348	146	163
BR 2 Closet	30	797	88	41	11
Stairs/Landing	0	915	160	48	19

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

BR's AH	882	12987	5583	675	675
Other equip loads		1525	366		
Equip. @ 0.92 RSM			5460		
Latent cooling			952		
TOTALS	882	14512	6412	675	675

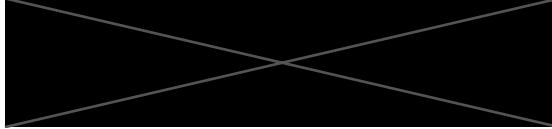
Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.





Project Information

For:



Design Information

	Htg	Clg	Infiltration	
Outside db (°F)	0	87	Method	Simplified
Inside db (°F)	70	75	Construction quality	Tight
Design TD (°F)	70	12	Fireplaces	1 (Semi-tight)
Daily range	-	M		
Inside humidity (%)	30	50		
Moisture difference (gr/lb)	28	24		

HEATING EQUIPMENT

Make	Mitsubishi Electric
Trade	Mitsubishi Electric
Model	SUZ-KA12NAHZ
AHRI ref	211289250
Efficiency	9.5 HSPF2
Heating input	
Heating output	15000 Btuh @ 47°F
Temperature rise	31 °F
Actual air flow	448 cfm
Air flow factor	0.056 cfm/Btuh
Static pressure	0.60 in H2O
Space thermostat	
Capacity balance point = 4 °F	

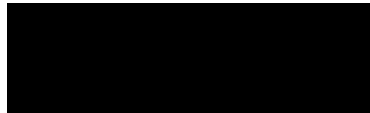
COOLING EQUIPMENT

Make	Mitsubishi Electric
Trade	Mitsubishi Electric
Cond	SUZ-KA12NAHZ
Coil	SVZ-KP12NA*
AHRI ref	211289250
Efficiency	13.9 EER2, 20 SEER2
Sensible cooling	8400 Btuh
Latent cooling	3600 Btuh
Total cooling	12000 Btuh
Actual air flow	448 cfm
Air flow factor	0.063 cfm/Btuh
Static pressure	0.60 in H2O
Load sensible heat ratio	0.90

Backup: METUS Inc. American Standard/Mitsubishi Electric EH03-SVZ-S
 Input = 3 kW, Output = 10236 Btuh, 100 AFUE

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
Dining	196	8028	7062	448	448
Dining Rm AH	196	8028	7062	448	448
Other equip loads		564	135		
Equip. @ 0.92 RSM			6607		
Latent cooling			800		
TOTALS	196	8591	7407	448	448

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



Project Information

For:



Notes:

Heat loss and gain calculations to provide Mitsubishi heat pumps for heating and cooling the residence. Electric baseboard is needed in bathrooms and areas without heads.

Design Information

Weather: Portland Intl Jetport, ME, US

Winter Design Conditions

Outside db	0 °F
Inside db	70 °F
Design TD	70 °F

Ventilation Method ASHRAE 62.2-2019

Summer Design Conditions

Outside db	87 °F
Inside db	75 °F
Design TD	12 °F
Daily range	M
Relative humidity	50 %
Moisture difference	24 gr/lb

Heating Summary

Structure	15940 Btuh
Ducts (R-6.0)	1381 Btuh
Central vent (SER=65% 76 cfm)	2059 Btuh
Energy recovery	
Humidification	1791 Btuh
Piping	0 Btuh
Equipment load	21171 Btuh

Infiltration

Method	Simplified
Construction quality	Tight
Fireplaces	1 (Semi-tight)

	Heating	Cooling
Area (ft ²)	1541	1541
Volume (ft ³)	15795	15795
Air changes/hour	0.12	0.05
Equiv. AVF (cfm)	31	14

Heating Equipment Summary

Make	Mitsubishi Electric
Trade	Mitsubishi Electric
Model	SUZ-KA24NAHZ
AHRI ref	211273651
Efficiency	8.4 HSPF2
Heating input	
Heating output	28800 Btuh @ 47°F
Temperature rise	36 °F
Actual air flow	735 cfm
Air flow factor	0.042 cfm/Btuh
Static pressure	0.60 in H2O
Space thermostat	
Capacity balance point = 4 °F	

Backup: METUS Inc. American Standard/Mitsubishi Electric EH08-SVZ-S
Input = 8 kW, Output = 27297 Btuh, 100 AFUE

Sensible Cooling Equipment Load Sizing

Structure	9333 Btuh
Ducts (R-6.0)	336 Btuh
Central vent (SER=50% 76 cfm)	494 Btuh
Energy recovery	
Blower	0 Btuh
Use manufacturer's data	n
Rate/swing multiplier	0.92
Equipment sensible load	9329 Btuh

Latent Cooling Equipment Load Sizing

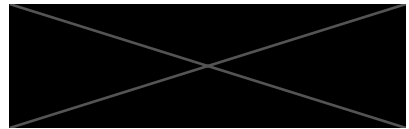
Structure	1037 Btuh
Ducts	566 Btuh
Central vent (LER=50% 76 cfm)	625 Btuh
Energy recovery	
Equipment latent load	2228 Btuh

Equipment Total Load (Sen+Lat)	11557 Btuh
Req. total capacity at 0.70 SHR	1.1 ton

Cooling Equipment Summary

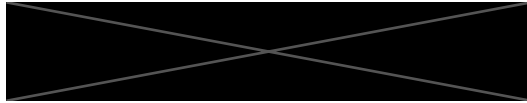
Make	Mitsubishi Electric
Trade	Mitsubishi Electric
Cond	SUZ-KA24NAHZ
Coil	SVZ-KP24NA*
AHRI ref	211273651
Efficiency	9.9 EER2, 16 SEER2
Sensible cooling	16800 Btuh
Latent cooling	7200 Btuh
Total cooling	24000 Btuh
Actual air flow	735 cfm
Air flow factor	0.076 cfm/Btuh
Static pressure	0.60 in H2O
Load sensible heat ratio	0.82

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



Project Information

For:



Notes:

Heat loss and gain calculations to provide Mitsubishi heat pumps for heating and cooling the residence. Electric baseboard is needed in bathrooms and areas without heads.

Design Information

Weather: Portland Intl Jetport, ME, US

Winter Design Conditions

Outside db 0 °F
 Inside db 70 °F
 Design TD 70 °F

Ventilation Method ASHRAE 62.2-2019

Heating Summary

Structure 12657 Btuh
 Ducts (R-6.0) 3358 Btuh
 Central vent (SER=65% 34 cfm) 923 Btuh
 Energy recovery
 Humidification 0 Btuh
 Piping 0 Btuh
 Equipment load 16937 Btuh

Infiltration

Method Simplified
 Construction quality Tight
 Fireplaces 1 (Semi-tight)

	Heating	Cooling
Area (ft ²)	889	889
Volume (ft ³)	8131	8131
Air changes/hour	0.20	0.09
Equiv. AVF (cfm)	27	13

Heating Equipment Summary

Make Mitsubishi Electric
 Trade Mitsubishi Electric
 Model SUZ-KA18NAHZ
 AHRI ref 211289256

Efficiency 9.2 HSPF2
 Heating input
 Heating output 21600 Btuh @ 47°F
 Temperature rise 29 °F
 Actual air flow 675 cfm
 Air flow factor 0.042 cfm/Btuh
 Static pressure 0.60 in H2O
 Space thermostat
 Capacity balance point = 6 °F

Backup: METUS Inc. American Standard/Mitsubishi Electric EH05-SVZ-S
 Input = 5 kW, Output = 17061 Btuh, 100 AFUE

Summer Design Conditions

Outside db 87 °F
 Inside db 75 °F
 Design TD 12 °F
 Daily range M
 Relative humidity 50 %
 Moisture difference 24 gr/lb

Sensible Cooling Equipment Load Sizing

Structure 8102 Btuh
 Ducts (R-6.0) 1162 Btuh
 Central vent (SER=50% 34 cfm) 221 Btuh
 Energy recovery
 Blower 0 Btuh

Use manufacturer's data n
 Rate/swing multiplier 0.92
 Equipment sensible load 8707 Btuh

Latent Cooling Equipment Load Sizing

Structure 206 Btuh
 Ducts 319 Btuh
 Central vent (LER=50% 34 cfm) 280 Btuh
 Energy recovery
 Equipment latent load 805 Btuh

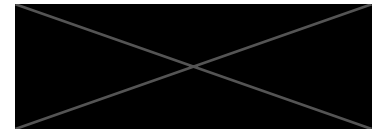
Equipment Total Load (Sen+Lat) 9511 Btuh
 Req. total capacity at 0.70 SHR 1.0 ton

Cooling Equipment Summary

Make Mitsubishi Electric
 Trade Mitsubishi Electric
 Cond SUZ-KA18NAHZ
 Coil SVZ-KP18NA*
 AHRI ref 211289256

Efficiency 12.4 EER2, 18.7 SEER2
 Sensible cooling 12600 Btuh
 Latent cooling 5400 Btuh
 Total cooling 18000 Btuh
 Actual air flow 675 cfm
 Air flow factor 0.073 cfm/Btuh
 Static pressure 0.60 in H2O
 Load sensible heat ratio 0.92

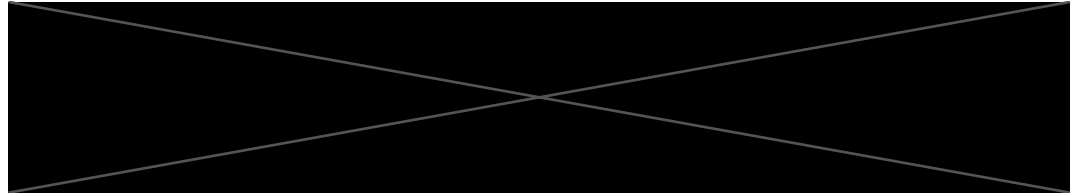
Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



Project Information

For:

Notes:



Design Information

Weather: Portland Intl Jetport, ME, US

Winter Design Conditions

Outside db 0 °F
 Inside db 70 °F
 Design TD 70 °F

Ventilation Method ASHRAE 62.2-2019

Summer Design Conditions

Outside db 87 °F
 Inside db 75 °F
 Design TD 12 °F
 Daily range M
 Relative humidity 50 %
 Moisture difference 24 gr/lb

Heating Summary

Structure 9636 Btuh
 Ducts (R-6.0) 3351 Btuh
 Central vent (SER=65% 56 cfm) 1525 Btuh
 Energy recovery
 Humidification 0 Btuh
 Piping 0 Btuh
 Equipment load 14512 Btuh

Infiltration

Method Simplified
 Construction quality Tight
 Fireplaces 1 (Semi-tight)

	Heating	Cooling
Area (ft ²)	882	882
Volume (ft ³)	9844	9844
Air changes/hour	0.14	0.06
Equiv. AVF (cfm)	22	10

Heating Equipment Summary

Make Mitsubishi Electric
 Trade Mitsubishi Electric
 Model SUZ-KA18NAHZ
 AHRI ref 211289256

Efficiency 9.2 HSPF2
 Heating input
 Heating output 21600 Btuh @ 47°F
 Temperature rise 29 °F
 Actual air flow 675 cfm
 Air flow factor 0.052 cfm/Btuh
 Static pressure 0.60 in H2O
 Space thermostat
 Capacity balance point = 2 °F

Backup: METUS Inc. American Standard/Mitsubishi Electric EH05-SVZ-S
 Input = 5 kW, Output = 17061 Btuh, 100 AFUE

Sensible Cooling Equipment Load Sizing

Structure 4421 Btuh
 Ducts (R-6.0) 1161 Btuh
 Central vent (SER=50% 56 cfm) 366 Btuh
 Energy recovery
 Blower 0 Btuh
 Use manufacturer's data n
 Rate/swing multiplier 0.92
 Equipment sensible load 5460 Btuh

Latent Cooling Equipment Load Sizing

Structure 170 Btuh
 Ducts 318 Btuh
 Central vent (LER=50% 56 cfm) 463 Btuh
 Energy recovery
 Equipment latent load 952 Btuh

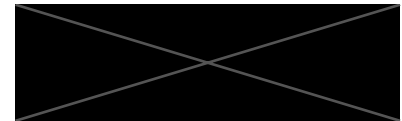
Equipment Total Load (Sen+Lat) 6412 Btuh
 Req. total capacity at 0.70 SHR 0.7 ton

Cooling Equipment Summary

Make Mitsubishi Electric
 Trade Mitsubishi Electric
 Cond SUZ-KA18NAHZ
 Coil SVZ-KP18NA*
 AHRI ref 211289256

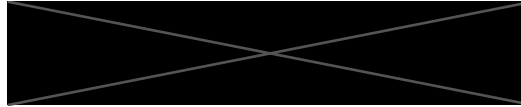
Efficiency 12.4 EER2, 18.7 SEER2
 Sensible cooling 12600 Btuh
 Latent cooling 5400 Btuh
 Total cooling 18000 Btuh
 Actual air flow 675 cfm
 Air flow factor 0.121 cfm/Btuh
 Static pressure 0.60 in H2O
 Load sensible heat ratio 0.86

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



Project Information

For:



Notes:

Heat loss and gain calculations to provide Mitsubishi heat pumps for heating and cooling the residence. Electric baseboard is needed in bathrooms and areas without heads.

Design Information

Weather: Portland Intl Jetport, ME, US

Winter Design Conditions

Outside db	0 °F
Inside db	70 °F
Design TD	70 °F

Ventilation Method ASHRAE 62.2-2019

Heating Summary

Structure	7668 Btuh
Ducts (R-6.0)	360 Btuh
Central vent (SER=65% 21 cfm)	564 Btuh
Energy recovery	
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	8591 Btuh

Infiltration

Method	Simplified
Construction quality	Tight
Fireplaces	1 (Semi-tight)

	Heating	Cooling
Area (ft ²)	196	196
Volume (ft ³)	2580	2580
Air changes/hour	0.26	0.12
Equip. AVF (cfm)	11	5

Heating Equipment Summary

Make	Mitsubishi Electric
Trade	Mitsubishi Electric
Model	SUZ-KA12NAHZ
AHRI ref	211289250

Efficiency	9.5 HSPF2
Heating input	
Heating output	15000 Btuh @ 47°F
Temperature rise	31 °F
Actual air flow	448 cfm
Air flow factor	0.056 cfm/Btuh
Static pressure	0.60 in H2O
Space thermostat	
Capacity balance point = 4 °F	

Backup: METUS Inc. American Standard/Mitsubishi Electric EH03-SVZ-S
Input = 3 kW, Output = 10236 Btuh, 100 AFUE

Summer Design Conditions

Outside db	87 °F
Inside db	75 °F
Design TD	12 °F
Daily range	M
Relative humidity	50 %
Moisture difference	24 gr/lb

Sensible Cooling Equipment Load Sizing

Structure	6974 Btuh
Ducts (R-6.0)	88 Btuh
Central vent (SER=50% 21 cfm)	135 Btuh
Energy recovery	
Blower	0 Btuh
Use manufacturer's data	n
Rate/swing multiplier	0.92
Equipment sensible load	6607 Btuh

Latent Cooling Equipment Load Sizing

Structure	484 Btuh
Ducts	145 Btuh
Central vent (LER=50% 21 cfm)	171 Btuh
Energy recovery	
Equipment latent load	800 Btuh

Equipment Total Load (Sen+Lat)	7407 Btuh
Req. total capacity at 0.70 SHR	0.8 ton

Cooling Equipment Summary

Make	Mitsubishi Electric
Trade	Mitsubishi Electric
Cond	SUZ-KA12NAHZ
Coil	SVZ-KP12NA*
AHRI ref	211289250

Efficiency	13.9 EER2, 20 SEER2
Sensible cooling	8400 Btuh
Latent cooling	3600 Btuh
Total cooling	12000 Btuh
Actual air flow	448 cfm
Air flow factor	0.063 cfm/Btuh
Static pressure	0.60 in H2O
Load sensible heat ratio	0.90

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



First Floor

