

Notes: The report we provide is only as good as the information we receive.
 Please review all load calculations and reports you receive from us for accuracy.
 It is ultimately the HVAC contractor who is responsible for the equipment they install.
 Texas Department of Licensing and Regulation Number TACLA57315E

Design Information

Weather: Redwood City, CA, US

Winter Design Conditions

Outside db	35 °F
Inside db	72 °F
Design TD	37 °F

Summer Design Conditions

Outside db	85 °F
Inside db	75 °F
Design TD	10 °F
Daily range	H
Relative humidity	50 %
Moisture difference	1 gr/lb

Heating Summary

Structure	11696 Btuh
Ducts	1452 Btuh
Central vent (SER=50% 70 cfm)	1426 Btuh
Energy recovery	
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	14575 Btuh

Sensible Cooling Equipment Load Sizing

Structure	9957 Btuh
Ducts	1655 Btuh
Central vent (SER=50% 70 cfm)	386 Btuh
Energy recovery	
Blower	0 Btuh
Use manufacturer's data	y
Rate/swing multiplier	1.00
Equipment sensible load	11998 Btuh

Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	0

	Heating	Cooling
Area (ft ²)	1339	1339
Volume (ft ³)	11549	11549
Air changes/hour	0.28	0.15
Equiv.AVF (cfm)	53	28

Latent Cooling Equipment Load Sizing

Structure	813 Btuh
Ducts	64 Btuh
Central vent (LER=50% 70 cfm)	17 Btuh
Energy recovery	
Equipment latent load	894 Btuh
Equipment Total Load (Sen+Lat)	12892 Btuh
Req. total capacity at 0.80 SHR	1.2 ton

Heating Equipment Summary

Make	Mitsubishi Electric		
Trade			
Model			
AHRI ref			
Efficiency	9.1 HSPF		
Heating input			
Heating output	15918 Btuh	@ 47°F	
Temperature rise	36 °F		
Actual air flow	400 cfm		
Air flow factor	0.030 cfm/Btuh		
Static pressure	0.80 in H2O		
Space thermostat			
Capacity balance point = 31 °F			

Cooling Equipment Summary

Make	Mitsubishi Electric		
Trade			
Cond			
Coil	PVFY-P12NAMU-E1		
AHRI ref			
Efficiency	14.7 EER, 18 SEER		
Sensible cooling	11999 Btuh		
Latent cooling	4000 Btuh		
Total cooling	15998 Btuh		
Actual air flow	400 cfm		
Air flow factor	0.034 cfm/Btuh		
Static pressure	0.80 in H2O		
Load sensible heat ratio	0.93		

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

Design Information

	Htg	Clg		Infiltration	
Outside db (°F)	35	85	Method		Simplified
Inside db (°F)	72	75	Construction quality		Semi-tight
Design TD (°F)	37	10	Fireplaces		0
Daily range	-	H			
Inside humidity (%)	30	50			
Moisture difference (gr/lb)	11	1			

HEATING EQUIPMENT

Make	Mitsubishi Electric
Trade	
Model	
AHRI ref	
Efficiency	9.1 HSPF
Heating input	
Heating output	15918 Btuh @ 47°F
Temperature rise	36 °F
Actual air flow	400 cfm
Air flow factor	0.030 cfm/Btuh
Static pressure	0.80 in H2O
Space thermostat	
Capacity balance point = 31 °F	

COOLING EQUIPMENT

Make	Mitsubishi Electric
Trade	
Cond	
Coil	PVFY-P12NAMU-E1
AHRI ref	
Efficiency	14.7 EER, 18 SEER
Sensible cooling	11999 Btuh
Latent cooling	4000 Btuh
Total cooling	15998 Btuh
Actual air flow	400 cfm
Air flow factor	0.034 cfm/Btuh
Static pressure	0.80 in H2O
Load sensible heat ratio	0.93

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
Kitchen/Dining	330	3233	3938	98	136
Hall Up	74	0	0	0	0
Stairs	94	778	481	24	17
Bed 1	214	1292	1516	39	52
Bath 1	57	1042	561	32	19
Bath 2	57	657	371	20	13
Bed 2	149	1791	1207	54	42
Bed 3	137	1571	1142	48	39
Living	228	2784	2397	85	83

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Unit 2 (Up)	d	1339	13148	11613	400	400
Other equip loads			1426	386		
Equip. @ 1.00 RSM				11998		
Latent cooling				894		
TOTALS		1339	14575	12892	400	400

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	Heating	Cooling
External static pressure	0.80 in H2O	0.80 in H2O
Pressure losses	0.42 in H2O	0.42 in H2O
Available static pressure	0.38 in H2O	0.38 in H2O
Supply / return available pressure	0.196 / 0.184 in H2O	0.196 / 0.184 in H2O
Lowest friction rate	0.074 in/100ft	0.074 in/100ft
Actual air flow	400 cfm	400 cfm
Total effective length (TEL)	516 ft	

Supply Branch Detail Table

Name	Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
Bath 1	h 1042	32	19	0.092	5.0	0x0	VIFx	27.5	185.0	st7
Bath 2	h 657	20	13	0.088	4.0	0x0	VIFx	31.3	190.0	st8
Bed 1	c 1516	39	52	0.096	6.0	0x0	VIFx	19.4	185.0	st7
Bed 2	h 1791	54	42	0.089	6.0	0x0	VIFx	29.6	190.0	st8
Bed 3	h 1571	48	39	0.085	6.0	0x0	VIFx	21.5	210.0	st9
Kitchen/Dining	c 1969	49	68	0.074	7.0	0x0	VIFx	20.6	245.0	st9
Kitchen/Dining-A	c 1969	49	68	0.088	6.0	0x0	VIFx	12.8	210.0	st9
Living	h 2784	85	83	0.075	7.0	0x0	VIFx	16.9	245.0	st9
Stairs	h 778	24	17	0.084	4.0	0x0	VIFx	12.5	220.0	st9

Supply Trunk Detail Table

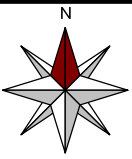
Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st7	Peak AVF	71	72	0.092	364	6.0	0 x 0	VinIFlx	st2
st8	Peak AVF	74	54	0.088	279	7.0	0 x 0	VinIFlx	st2
st2	Peak AVF	400	400	0.074	400	9.6	12 x 12	RectFbg	
st9	Peak AVF	255	274	0.074	274	7.9	12 x 12	ShtMetl	st2

Return Branch Detail Table

Name	Grille Size (in)	Htg (cfm)	Clg (cfm)	TEL (ft)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Stud/Joist Opening (in)	Duct Matl	Trunk
rb7	0x0	71	72	143.8	0.128	364	6.0	0x 0		VIFx	rt2A
rb6	0x0	54	42	250.0	0.074	277	6.0	0x 0		VIFx	rt2B
rb5	0x0	48	39	175.8	0.105	243	6.0	0x 0		VIFx	rt2A
rb2	0x0	227	248	130.3	0.141	560	9.0	0x 0		VIFx	rt2

Return Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
rt2A	Peak AVF	173	152	0.074	173	7.6	12 x 12	ShtMetl	rt2
rt2B	Peak AVF	54	42	0.074	54	4.9	12 x 12	ShtMetl	rt2A
rt2	Peak AVF	400	400	0.074	400	8.7	12 x 12	RectFbg	



Level 2

