

Load calculation summary report

Summary of heating and cooling loads for spaces

Project summary

Location and Weather	
Project	Sample House
Location	Norwood Memorial MA USA TMY3 WMO#=725098
Latitude	42.18
Longitude	-71.2

Building summary

Inputs	
Area (SF)	2895.46
Volume (CF)	31226.87
Calculated Results	
Peak Cooling Total Load(Btu/h)	119087.44
Peak Cooling Month and Hour	7/21 16:15:00
Peak Cooling Sensible Load(Btu/h)	116689.41
Peak Cooling Latent Load(Btu/h)	2398.04
Peak Heating Load(Btu/h)	-74838.90
Checksums	
Cooling Load Density (Btu/(h·ft ²))	41.13
Heating Load Density (Btu/(h·ft ²))	-25.85

Space Summary "Entry_Hall_201"

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Inputs	
Area (SF)	1107.96
Volume (CF)	10599.49
Cooling Setpoint (°F)	75.02
Heating Setpoint (°F)	64.91
Relative Humidity (%)	100.00
Calculated Results	
Peak Cooling Total Load (Btu/h)	37450.48
Peak Cooling Month and Hour	7/21 16:15:00
Peak Cooling Sensible Load (Btu/h)	36611.29
Peak Cooling Latent Load (Btu/h)	839.19
Peak Heating Load (Btu/h)	-26437.30
Checksums	
Cooling Load Density (Btu/(h·ft²))	33.80
Heating Load Density (Btu/(h·ft²))	-23.86

Components	Cooling		Heating	
	Loads(Btu/h)	Percentage of Total	Loads(Btu/h)	Percentage of Total
Wall	-233.30	-0.62	-6654.50	25.17
Window	31305.02	83.59	-16033.70	60.65
Door	0.00	0.00	0.00	-0.00
Roof	2792.57	7.46	-2590.60	9.80
Partition	-2451.00	-6.54	-383.50	1.45
Floor	-2021.20	-5.40	1154.55	-4.37
Infiltration	819.75	2.19	-10159.60	38.43
Ventilation	0.00	0.00	0.00	-0.00
Lighting	2648.59	7.07	1313.18	-4.97

Power	3358.93	8.97	1589.42	-6.01
People	1231.18	3.29		
Other	0.00	0.00	0.00	-0.00
Total	37450.48	100.0	-26437.30	100.0

Space Summary "Laundry_104"

Inputs	
Area (SF)	62.42
Volume (CF)	495.31
Cooling Setpoint (°F)	75.02
Heating Setpoint (°F)	64.93
Relative Humidity (%)	100.00
Calculated Results	
Peak Cooling Total Load (Btu/h)	855.44
Peak Cooling Month and Hour	7/21 10:00:00
Peak Cooling Sensible Load (Btu/h)	855.44
Peak Cooling Latent Load (Btu/h)	0.00
Peak Heating Load (Btu/h)	-402.30
Checksums	
Cooling Load Density (Btu/(h·ft²))	13.70
Heating Load Density (Btu/(h·ft²))	-6.45

Components	Cooling		Heating	
	Loads(Btu/h)	Percentage of Total	Loads(Btu/h)	Percentage of Total
Wall	0.00	0.00	0.00	-0.00
Window	0.00	0.00	0.00	-0.00

Door	0.00	0.00	0.00	-0.00
Roof	0.00	0.00	0.00	-0.00
Partition	622.38	72.76	-311.20	77.36
Floor	-16.36	-1.91	-146.73	36.47
Infiltration	0.00	0.00	0.00	-0.00
Ventilation	0.00	0.00	0.00	-0.00
Lighting	101.80	11.90	22.68	-5.64
Power	147.57	17.25	32.97	-8.20
People	0.00	0.00		
Other	0.00	0.00	0.00	-0.00
Total	855.44	100.0	-402.30	100.0

Space Summary "Bath_103"

Inputs	
Area (SF)	36.54
Volume (CF)	285.78
Cooling Setpoint (°F)	75.02
Heating Setpoint (°F)	64.93
Relative Humidity (%)	100.00
Calculated Results	
Peak Cooling Total Load (Btu/h)	572.01
Peak Cooling Month and Hour	7/21 10:00:00
Peak Cooling Sensible Load (Btu/h)	572.01
Peak Cooling Latent Load (Btu/h)	0.00
Peak Heating Load (Btu/h)	-267.10
Checksums	
Cooling Load Density (Btu/(h·ft²))	15.65

Heating Load Density (Btu/(h·ft ²))	-7.31
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Components	Cooling		Heating	
	Loads(Btu/h)	Percentage of Total	Loads(Btu/h)	Percentage of Total
Wall	0.00	0.00	0.00	-0.00
Window	0.00	0.00	0.00	-0.00
Door	0.00	0.00	0.00	-0.00
Roof	0.00	0.00	0.00	-0.00
Partition	450.80	78.81	-207.60	77.72
Floor	-7.24	-1.27	-87.50	32.76
Infiltration	0.00	0.00	0.00	-0.00
Ventilation	0.00	0.00	0.00	-0.00
Lighting	52.41	9.16	11.37	-4.26
Power	76.06	13.30	16.67	-6.24
People	0.00	0.00		
Other	0.00	0.00	0.00	-0.00
Total	572.01	100.0	-267.10	100.0

Space Summary "Mech_102"

Inputs	
Area (SF)	28.37
Volume (CF)	203.40
Cooling Setpoint (°F)	75.02
Heating Setpoint (°F)	64.93
Relative Humidity (%)	100.00
Calculated Results	
Peak Cooling Total Load (Btu/h)	554.02

Peak Cooling Month and Hour	7/21 17:15:00
Peak Cooling Sensible Load (Btu/h)	554.02
Peak Cooling Latent Load (Btu/h)	0.00
Peak Heating Load (Btu/h)	-265.40
Checksums	
Cooling Load Density (Btu/(h·ft ²))	19.53
Heating Load Density (Btu/(h·ft ²))	-9.35

Components	Cooling		Heating	
	Loads(Btu/h)	Percentage of Total	Loads(Btu/h)	Percentage of Total
Wall	0.00	0.00	0.00	-0.00
Window	0.00	0.00	0.00	-0.00
Door	0.00	0.00	0.00	-0.00
Roof	0.00	0.00	0.00	-0.00
Partition	479.00	86.46	-223.90	84.36
Floor	0.93	0.17	-67.40	25.40
Infiltration	0.00	0.00	0.00	-0.00
Ventilation	0.00	0.00	0.00	-0.00
Lighting	31.00	5.60	11.08	-4.17
Power	43.04	7.77	14.86	-5.60
People	0.00	0.00		
Other	0.00	0.00	0.00	-0.00
Total	554.02	100.0	-265.40	100.0

Space Summary "Kitchen_-_Dining_101"

Inputs	

Area (SF)	767.39
Volume (CF)	6594.49
Cooling Setpoint (°F)	75.02
Heating Setpoint (°F)	64.93
Relative Humidity (%)	100.00
Calculated Results	
Peak Cooling Total Load (Btu/h)	30429.87
Peak Cooling Month and Hour	7/21 16:45:00
Peak Cooling Sensible Load (Btu/h)	29812.73
Peak Cooling Latent Load (Btu/h)	617.14
Peak Heating Load (Btu/h)	-17471.20
Checksums	
Cooling Load Density (Btu/(h·ft²))	39.65
Heating Load Density (Btu/(h·ft²))	-22.77

Components	Cooling		Heating	
	Loads(Btu/h)	Percentage of Total	Loads(Btu/h)	Percentage of Total
Wall	13.01	0.04	13.01	0.04
Window	27935.91	91.80	27935.91	92.41
Door	0.00	0.00	0.00	0.00
Roof	-12.60	-0.04	-12.60	-0.04
Partition	-417.05	-1.37	-597.50	-1.98
Floor	548.53	1.80	536.56	1.77
Infiltration	499.85	1.64	499.85	1.65
Ventilation	0.00	0.00	0.00	0.00
Lighting	495.90	1.63	492.91	1.63
Power	862.56	2.83	858.50	2.84

People	503.70	1.66		
Other	0.00	0.00	0.00	0.00
Total	30429.87	100.0	30230.35	100.0

Space Summary "Entry_Hall_201"

Inputs	
Area (SF)	135.10
Volume (CF)	1996.35
Cooling Setpoint (°F)	75.02
Heating Setpoint (°F)	64.91
Relative Humidity (%)	100.00
Calculated Results	
Peak Cooling Total Load (Btu/h)	7765.12
Peak Cooling Month and Hour	7/21 17:45:00
Peak Cooling Sensible Load (Btu/h)	7559.66
Peak Cooling Latent Load (Btu/h)	205.46
Peak Heating Load (Btu/h)	-5423.20
Checksums	
Cooling Load Density (Btu/(h·ft²))	57.48
Heating Load Density (Btu/(h·ft²))	-40.14

Components	Cooling		Heating	
	Loads(Btu/h)	Percentage of Total	Loads(Btu/h)	Percentage of Total
Wall	1143.37	14.72	-1899.10	35.02
Window	6178.76	79.57	-2111.40	38.93
Door	0.00	0.00	0.00	-0.00

Roof	503.33	6.48	-294.20	5.42
Partition	-770.40	-9.92	20.84	-0.38
Floor	0.00	0.00	0.00	-0.00
Infiltration	145.38	1.87	-1914.80	35.31
Ventilation	0.00	0.00	0.00	-0.00
Lighting	133.09	1.71	77.21	-1.42
Power	202.00	2.60	94.48	-1.74
People	229.61	2.96		
Other	0.00	0.00	0.00	-0.00
Total	7765.12	100.0	-5423.20	100.0

Space Summary "Bedroom_202"

Inputs	
Area (SF)	145.35
Volume (CF)	2235.32
Cooling Setpoint (°F)	75.02
Heating Setpoint (°F)	64.91
Relative Humidity (%)	93.81
Calculated Results	
Peak Cooling Total Load (Btu/h)	4913.74
Peak Cooling Month and Hour	7/21 10:15:00
Peak Cooling Sensible Load (Btu/h)	4755.35
Peak Cooling Latent Load (Btu/h)	158.40
Peak Heating Load (Btu/h)	-3800.50
Checksums	
Cooling Load Density (Btu/(h·ft²))	33.81
Heating Load Density (Btu/(h·ft²))	-26.15

Components	Cooling		Heating	
	Loads(Btu/h)	Percentage of Total	Loads(Btu/h)	Percentage of Total
Wall	118.15	2.40	-494.40	13.01
Window	4408.75	89.72	-1110.30	29.21
Door	0.00	0.00	0.00	-0.00
Roof	138.14	2.81	-380.60	10.01
Partition	-339.00	-6.90	-236.60	6.23
Floor	0.00	0.00	0.00	-0.00
Infiltration	144.51	2.94	-2074.40	54.58
Ventilation	0.00	0.00	0.00	-0.00
Lighting	142.55	2.90	51.80	-1.36
Power	223.15	4.54	62.31	-1.64
People	77.55	1.58		
Other	0.00	0.00	0.00	-0.00
Total	4913.74	100.0	-3800.50	100.0

Space Summary "Master_Bedroom_206"

Inputs	
Area (SF)	271.00
Volume (CF)	3601.16
Cooling Setpoint (°F)	75.02
Heating Setpoint (°F)	64.91
Relative Humidity (%)	100.00
Calculated Results	
Peak Cooling Total Load (Btu/h)	21478.16
Peak Cooling Month and Hour	7/21 16:15:00

Peak Cooling Sensible Load (Btu/h)	21216.83
Peak Cooling Latent Load (Btu/h)	261.32
Peak Heating Load (Btu/h)	-10468.90
Checksums	
Cooling Load Density (Btu/(h·ft ²))	79.26
Heating Load Density (Btu/(h·ft ²))	-38.63

Components	Cooling		Heating	
	Loads(Btu/h)	Percentage of Total	Loads(Btu/h)	Percentage of Total
Wall	620.76	2.89	-1824.20	17.42
Window	19335.00	90.02	-6512.20	62.21
Door	0.00	0.00	0.00	-0.00
Roof	1912.36	8.90	-521.30	4.98
Partition	-2148.80	-10.00	354.21	-3.38
Floor	0.00	0.00	0.00	-0.00
Infiltration	279.59	1.30	-3453.20	32.99
Ventilation	0.00	0.00	0.00	-0.00
Lighting	503.74	2.35	225.28	-2.15
Power	725.31	3.38	306.03	-2.92
People	250.17	1.16		
Other	0.00	0.00	0.00	-0.00
Total	21478.16	100.0	-10468.90	100.0

Space Summary "Bath_205"

Inputs	
Area (SF)	67.25
Volume (CF)	977.48

Cooling Setpoint (°F)	75.02
Heating Setpoint (°F)	64.91
Relative Humidity (%)	88.87
Calculated Results	
Peak Cooling Total Load (Btu/h)	2052.35
Peak Cooling Month and Hour	7/21 15:30:00
Peak Cooling Sensible Load (Btu/h)	2000.93
Peak Cooling Latent Load (Btu/h)	51.43
Peak Heating Load (Btu/h)	-1670.30
Checksums	
Cooling Load Density (Btu/(h·ft²))	30.52
Heating Load Density (Btu/(h·ft²))	-24.84

Components	Cooling		Heating	
	Loads(Btu/h)	Percentage of Total	Loads(Btu/h)	Percentage of Total
Wall	27.86	1.36	-104.80	6.27
Window	1656.31	80.70	-360.40	21.58
Door	0.00	0.00	0.00	-0.00
Roof	167.37	8.16	-133.90	8.02
Partition	-13.90	-0.68	-241.90	14.48
Floor	0.00	0.00	0.00	-0.00
Infiltration	76.88	3.75	-883.60	52.90
Ventilation	0.00	0.00	0.00	-0.00
Lighting	54.66	2.66	23.14	-1.39
Power	83.15	4.05	31.22	-1.87
People	0.00	0.00		

Other	0.00	0.00	0.00	-0.00
Total	2052.35	100.0	-1670.30	100.0

Space Summary "Bedroom_204"

Inputs	
Area (SF)	142.12
Volume (CF)	2254.90
Cooling Setpoint (°F)	75.02
Heating Setpoint (°F)	64.91
Relative Humidity (%)	93.33
Calculated Results	
Peak Cooling Total Load (Btu/h)	4670.19
Peak Cooling Month and Hour	7/21 10:30:00
Peak Cooling Sensible Load (Btu/h)	4511.04
Peak Cooling Latent Load (Btu/h)	159.15
Peak Heating Load (Btu/h)	-3740.10
Checksums	
Cooling Load Density (Btu/(h·ft²))	32.86
Heating Load Density (Btu/(h·ft²))	-26.32

Components	Cooling		Heating	
	Loads(Btu/h)	Percentage of Total	Loads(Btu/h)	Percentage of Total
Wall	153.23	3.28	-618.50	16.54
Window	4081.52	87.40	-1115.00	29.81
Door	0.00	0.00	0.00	-0.00
Roof	227.18	4.86	-512.10	13.69

Partition	-581.20	-12.44	-246.00	6.58
Floor	0.00	0.00	0.00	-0.00
Infiltration	148.86	3.19	-2087.40	55.81
Ventilation	0.00	0.00	0.00	-0.00
Lighting	208.22	4.46	84.18	-2.25
Power	304.03	6.51	107.00	-2.86
People	128.39	2.75		
Other	0.00	0.00	0.00	-0.00
Total	4670.19	100.0	-3740.10	100.0

Space Summary "OFFICE Default"

Inputs	
Area (SF)	41.43
Volume (CF)	494.67
Cooling Setpoint (°F)	75.02
Heating Setpoint (°F)	64.92
Relative Humidity (%)	91.08
Calculated Results	
Peak Cooling Total Load (Btu/h)	1640.72
Peak Cooling Month and Hour	7/21 16:45:00
Peak Cooling Sensible Load (Btu/h)	1614.48
Peak Cooling Latent Load (Btu/h)	26.25
Peak Heating Load (Btu/h)	-923.80
Checksums	
Cooling Load Density (Btu/(h·ft²))	39.60
Heating Load Density (Btu/(h·ft²))	-22.30

Components	Cooling		Heating	
	Loads(Btu/h)	Percentage of Total	Loads(Btu/h)	Percentage of Total
Wall	26.01	1.59	-88.30	9.56
Window	0.00	0.00	0.00	-0.00
Door	0.00	0.00	0.00	-0.00
Roof	66.58	4.06	-52.70	5.70
Partition	1323.08	80.64	-398.20	43.10
Floor	-5.00	-0.30	-4.90	0.53
Infiltration	37.72	2.30	-452.50	48.98
Ventilation	0.00	0.00	0.00	-0.00
Lighting	106.55	6.49	25.65	-2.78
Power	85.76	5.23	47.18	-5.11
People	0.00	0.00		
Other	0.00	0.00	0.00	-0.00
Total	1640.72	100.0	-923.80	100.0

Space Summary "Master_Bath_207"

Inputs	
Area (SF)	49.02
Volume (CF)	961.46
Cooling Setpoint (°F)	75.02
Heating Setpoint (°F)	64.91
Relative Humidity (%)	98.96
Calculated Results	
Peak Cooling Total Load (Btu/h)	4184.22
Peak Cooling Month and Hour	7/21 10:30:00

Peak Cooling Sensible Load (Btu/h)	4132.66
Peak Cooling Latent Load (Btu/h)	51.56
Peak Heating Load (Btu/h)	-2605.80
Checksums	
Cooling Load Density (Btu/(h·ft ²))	85.36
Heating Load Density (Btu/(h·ft ²))	-53.16

Components	Cooling		Heating	
	Loads(Btu/h)	Percentage of Total	Loads(Btu/h)	Percentage of Total
Wall	89.39	2.14	-185.90	7.13
Window	7020.06	167.77	-1107.40	42.50
Door	0.00	0.00	0.00	-0.00
Roof	-72.22	-1.73	-358.10	13.74
Partition	-825.70	-19.73	-39.20	1.50
Floor	-2164.70	-51.73	-20.00	0.77
Infiltration	64.23	1.54	-916.40	35.17
Ventilation	0.00	0.00	0.00	-0.00
Lighting	67.68	1.62	19.54	-0.75
Power	5.44	0.13	1.48	-0.06
People	0.00	0.00		
Other	0.00	0.00	0.00	-0.00
Total	4184.22	100.0	-2605.80	100.0

Space Summary "Bath_203"

Inputs	
Area (SF)	41.51
Volume (CF)	527.06

Cooling Setpoint (°F)	75.02
Heating Setpoint (°F)	64.92
Relative Humidity (%)	98.09
Calculated Results	
Peak Cooling Total Load (Btu/h)	2521.12
Peak Cooling Month and Hour	7/21 11:45:00
Peak Cooling Sensible Load (Btu/h)	2492.98
Peak Cooling Latent Load (Btu/h)	28.14
Peak Heating Load (Btu/h)	-1363.00
Checksums	
Cooling Load Density (Btu/(h·ft²))	60.74
Heating Load Density (Btu/(h·ft²))	-32.84

Components	Cooling		Heating	
	Loads(Btu/h)	Percentage of Total	Loads(Btu/h)	Percentage of Total
Wall	241.92	9.60	-400.40	29.38
Window	2624.13	104.09	-355.80	26.10
Door	0.00	0.00	0.00	-0.00
Roof	64.60	2.56	-179.40	13.16
Partition	-554.90	-22.01	33.79	-2.48
Floor	0.00	0.00	0.00	-0.00
Infiltration	38.39	1.52	-500.20	36.70
Ventilation	0.00	0.00	0.00	-0.00
Lighting	44.47	1.76	16.47	-1.21
Power	62.48	2.48	22.48	-1.65
People	0.00	0.00		

Other	0.00	0.00	0.00	-0.00
Total	2521.12	100.0	-1363.00	100.0