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Project Default Calculation Values for O'Rourke, Ryan

Indoor/Outdoor Design Temperatures (Degrees Farenheit)

Summer		Winter	
Inside (Thermostat setting) :	70	Inside (Thermostat setting) :	72
Outside (Above ground):	97	Outside (Above ground) :	0
Outside (Below ground):	55	Outside (Below ground) :	55
Unconditioned Space :	97	Unconditioned Space :	40
Above Ceiling (Attic/Crawl Space) :	130	Above Ceiling (Attic/Crawl Space) :	40
Concrete Slab (Ground temperature) :	80	Concrete Slab (Ground temperature) :	40
Unconditioned Basement :	65	Unconditioned Basement :	50
Below Floor Crawl Space :	90	Below Floor Crawl Space :	50

Design Conditions

Occupant Sensible Load (BTUH per person) :	250
Occupant Latent Load (BTUH per person) :	200
Duct Insulation Factor :	1
Duct Temperature Difference (Summer) :	20
Duct Temperature Difference (Winter) :	45
Space Humidity Difference Inside/Outside (Summer) :	20
Space Humidity Difference Inside/Outside (Winter) :	15
Fresh Air Per Person (CFM) :	2
Air Change Factor (Air change per hour) :	.5
Space Shading Factor :	.4
Air Handler Design Cooling (CFM per ton) :	400
Hydronic Heat (BTUH per linear ft :	600

Insulation Values (U-Factors)

Exposed Walls (Above Ground) :	.080
Exposed Walls (Below Ground) :	.075
Partitions :	.075
Roof/Ceiling :	.055
Floor (Above basement) :	.083
Floor (Concrete slab) :	.001
Floor (Between conditioned spaces) :	.287
Doors :	.500
Windows :	.900

Duct and Grill Sizing

Supply Ducts		Supply Grills	
0 to 50 CFM :	5" Round Metal	8x4" Supply Grille	
50 to 100 CFM :	6" Round Metal	10x6" Supply Grille	
100 to 150 CFM :	7" Round Metal	12x6" Supply Grille	
151 to 200 CFM :	8" Round Metal	12x6" Supply Grille	
201 to 275 CFM :	9" Round Metal	14x6" Supply Grille	
276 to 350 CFM :	10" Round Metal	14x8" Supply Grille	
351 to 600 CFM :	12" Round Metal	12x12" Supply Grille	
601 to 900 CFM :	14" Round Metal	18x10" Supply Grille	
901 to 1200 CFM :	16" Round Metal	18x12" Supply Grille	
Return Ducts		Return Grills	
0 to 50 CFM :	5" Round Metal	8x4" Return Grille	
51 to 100 CFM :	6" Round Metal	10x4" Return Grille	
101 to 125 CFM :	7" Round Metal	10x6" Return Grille	
126 to 175 CFM :	8" Round Metal	12x6" Return Grille	
176 to 225 CFM :	9" Round Metal	12x8" Return Grille	
226 to 300 CFM :	11" Round Metal	12x10" Return Grille	
301 to 400 CFM :	12" Round Metal	16x10" Return Grille	
401 to 500 CFM :	14" Round Metal	18x12" Return Grille	
501 to 600 CFM :	15" Round Metal	20x12" Return Grille	
601 to 700 CFM :	16" Round Metal	24x12" Return Grille	
701 to 800 CFM :	17" Round Metal	18x18" Return Grille	
801 to 900 CFM :	18" Round Metal	20x18" Return Grille	
901 to 1000 CFM :	19" Round Metal	24x18" Return Grille	
1001 to 1200 CFM :	21" Round Metal	30x18" Return Grille	
1201 to 1400 CFM :	23" Round Metal	24x24" Return Grille	
1401 to 1500 CFM :	24" Round Metal	36x18" Return Grille	
1501 to 1600 CFM :	25" Round Metal	36x18" Return Grille	
1601 to 1800 CFM :	26" Round Metal	40x18" Return Grille	
1801 to 2000 CFM :	27" Round Metal	36x24" Return Grille	
2001 to 2500 CFM :	31" Round Metal	48x20" Return Grille	
2501 to 3000 CFM :	34" Round Metal	48x24" Return Grille	
3001 to 3500 CFM :	36" Round Metal	60x24" Return Grille	
3501 to 4000 CFM :	39" Round Metal	60x30" Return Grille	

These are the current default system design conditions. These values can be adjusted by the user on a global or room-by-room basis. To review the actual values for a specified room, print the Detailed Load Analysis Report. It is not uncommon, particularly in complex or multi-story structures, for temperatures, U-factors, and other design conditions to vary between floors and or rooms.



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Heat Load Detail Report for O'Rourke, Ryan

Room 1 of 12

Room Specifications: Dining Room

Room Length (Ft.) :	12	Sq. Ft windows facing NE & NW:	--	Watts Incandescent Light:	120
Room Width (Ft.) :	11	Sq. Ft windows facing South:	--	Watts Fluorescent Light:	--
Room Height (Ft.) :	8	Sq. Ft windows facing SE & SW:	--	Duct Length from A/H to room:	--
Exposed Wall Length (Ft.) :	23	Number of Exterior Doors:	--	Number of Large Electric Motors:	--
Wall against unconditioned room (Ft.) :	--	Sq. Ft. Exterior Doors:	--	Average Electric Motor Horsepower:	--
Sq. Ft windows facing North:	18	Number of People in Room:	2	BTUH Appliance Sensible Heat:	--
Sq. Ft windows facing E & W:	9			BTUH Appliance Latent Heat:	--

Indoor/Outdoor Design Temperatures (degrees Farenheit)

Summer:		Winter:	
Inside (Thermostat setting) :	70	Inside (Thermostat setting) :	72
Outside (Above ground):	97	Outside (Above ground) :	0
Outside (Below ground):	55	Outside (Below ground) :	55
Unconditioned Space :	97	Unconditioned Space :	40
Above Ceiling (Attic/Crawl Space) :	130	Above Ceiling (Attic/Crawl Space) :	40
Concrete Slab (Ground temperature) :	80	Concrete Slab (Ground temperature) :	40
Unconditioned Basement :	65	Unconditioned Basement :	50
Below Floor Crawl Space :	90	Below Floor Crawl Space :	50

Applicable Temperatures: Above Ceiling: Thermostat Setting Below Floor: Thermostat Setting Exposed Walls: Above Ground

Design Conditions

Occupant Sensible Load (BTUH per person) :	250
Occupant Latent Load (BTUH per person) :	200
Duct Insulation Factor :	1
Duct Temperature Difference (Summer) :	20
Duct Temperature Difference (Winter) :	45
Humidity Difference Inside/Outside % (Summer) :	20
Humidity Difference Inside/Outside % (Winter) :	15
Fresh Air Per Person (CFM) :	2
Air Change Factor (Air change per hour) :	.5
Space Shading Factor :	.4
Air Handler Design Cooling (CFM per ton) :	400
Hydronic Heat (BTUH per linear ft) :	600

Insulation Values (U-Factors)

Exposed Walls (Above Ground) :	.080
Exposed Walls (Below Ground) :	.5
Partitions :	.075
Roof/Ceiling :	.055
Floor (Above basement) :	.083
Floor (Concrete slab) :	.001
Floor (Between conditioned spaces) :	.287
Doors :	.500
Windows :	.900

Calculated Room Results - Summer Heat Gains

Wall Heat Gain (BTUH) :	397	Appliance/Elec Motor Latent Heat Gain (BTUH) :	400
Ceiling or Roof Heat Gain (BTUH) :	0	Appliance/Elec Motor Sensible Heat Gain (BTUH) :	909
Floor Heat Gain (BTUH) :	0	Ventilation Latent Heat Gain (BTUH) :	118
Glass Heat Gain (BTUH) :	199	Ventilation Sensible Gain (BTUH) :	257
Exterior Door & North Window Heat Gain (BTUH) :	204	Summer Total Latent Heat Gain:	518
Solar Heat Gain (BTUH) :	774	Summer Total Sensible Heat Gain (BTUH) :	2741
Total Transmission Heat Gain (BTUH) :	1575	TOTAL SUMMER COOLING LOAD (BTUH) :	3259

Calculated Room Results - Winter Heat Losses

Transmission Heat Losses (BTUH) :	2136	Latent Ventilation Heat Losses (BTUH) :	89
Sensible Ventilation Heat Losses (BTUH) :	686	Hydronic Heat (Linear Ft.) :	5
		TOTAL WINTER HEATING LOAD (BTUH) :	2910

Calculated Totals for Entire Structure

Size of Structure (Sq. Ft.):	2527	Total Sensible Heat Gain (BTUH):	37337
Total Heat Loss (BTUH):	57102	Total Cooling Gain (BTUH):	43709
Total Hydronic Heat (Linear Ft.):	95.17	Total Cooling Requirement (Tons):	4.05
Total Latent Heat Gain (BTUH):	6370	Total Cooling CFM:	1458

Disclaimer

These computed results should be treated as estimates only and should be viewed as only one of the many tools required for a professional installation. The installing contractor's experience and expert judgement are also major factors in sizing and installing a complete system. The weather, customer usage, duct installation, and structure design may vary on each estimate and should be taken into account. Correct system sizing is based on the systems ability to meet both latent and sensible heat requirements, not just total BTUs.



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Heat Load Detail Report for O'Rourke, Ryan

Room 2 of 12

Room Specifications: Bath

Room Length (Ft.) :	8	Sq. Ft windows facing NE & NW:	--	Watts Incandescent Light:	60
Room Width (Ft.) :	6	Sq. Ft windows facing South:	6	Watts Fluorescent Light:	--
Room Height (Ft.) :	8	Sq. Ft windows facing SE & SW:	--	Duct Length from A/H to room:	--
Exposed Wall Length (Ft.) :	6	Number of Exterior Doors:	--	Number of Large Electric Motors:	--
Wall against unconditioned room (Ft.) :	--	Sq. Ft. Exterior Doors:	--	Average Electric Motor Horsepower:	--
Sq. Ft windows facing North:	--	Number of People in Room:	--	BTUH Appliance Sensible Heat:	--
Sq. Ft windows facing E & W:	--			BTUH Appliance Latent Heat:	--

Indoor/Outdoor Design Temperatures (degrees Farenheit)

Summer:		Winter:	
Inside (Thermostat setting) :	70	Inside (Thermostat setting) :	72
Outside (Above ground):	97	Outside (Above ground) :	0
Outside (Below ground):	55	Outside (Below ground) :	55
Unconditioned Space :	97	Unconditioned Space :	40
Above Ceiling (Attic/Crawl Space) :	130	Above Ceiling (Attic/Crawl Space) :	40
Concrete Slab (Ground temperature) :	80	Concrete Slab (Ground temperature) :	40
Unconditioned Basement :	65	Unconditioned Basement :	50
Below Floor Crawl Space :	90	Below Floor Crawl Space :	50

Applicable Temperatures: Above Ceiling: Thermostat Setting Below Floor: Thermostat Setting Exposed Walls: Above Ground

Design Conditions

Occupant Sensible Load (BTUH per person) :	250
Occupant Latent Load (BTUH per person) :	200
Duct Insulation Factor :	1
Duct Temperature Difference (Summer) :	20
Duct Temperature Difference (Winter) :	45
Humidity Difference Inside/Outside % (Summer) :	20
Humidity Difference Inside/Outside % (Winter) :	15
Fresh Air Per Person (CFM) :	2
Air Change Factor (Air change per hour) :	.5
Space Shading Factor :	.4
Air Handler Design Cooling (CFM per ton) :	400
Hydronic Heat (BTUH per linear ft) :	600

Insulation Values (U-Factors)

Exposed Walls (Above Ground) :	.080
Exposed Walls (Below Ground) :	.5
Partitions :	.075
Roof/Ceiling :	.055
Floor (Above basement) :	.083
Floor (Concrete slab) :	.001
Floor (Between conditioned spaces) :	.287
Doors :	.500
Windows :	.900

Calculated Room Results - Summer Heat Gains

Wall Heat Gain (BTUH) :	104	Appliance/Elec Motor Latent Heat Gain (BTUH) :	0
Ceiling or Roof Heat Gain (BTUH) :	0	Appliance/Elec Motor Sensible Heat Gain (BTUH) :	205
Floor Heat Gain (BTUH) :	0	Ventilation Latent Heat Gain (BTUH) :	43
Glass Heat Gain (BTUH) :	133	Ventilation Sensible Gain (BTUH) :	93
Exterior Door & North Window Heat Gain (BTUH) :	0	Summer Total Latent Heat Gain:	43
Solar Heat Gain (BTUH) :	0	Summer Total Sensible Heat Gain (BTUH) :	535
Total Transmission Heat Gain (BTUH) :	237	TOTAL SUMMER COOLING LOAD (BTUH) :	578

Calculated Room Results - Winter Heat Losses

Transmission Heat Losses (BTUH) :	631	Latent Ventilation Heat Losses (BTUH) :	32
Sensible Ventilation Heat Losses (BTUH) :	249	Hydronic Heat (Linear Ft.) :	2
		TOTAL WINTER HEATING LOAD (BTUH) :	912

Calculated Totals for Entire Structure

Size of Structure (Sq. Ft.):	2527	Total Sensible Heat Gain (BTUH):	37337
Total Heat Loss (BTUH):	57102	Total Cooling Gain (BTUH):	43709
Total Hydronic Heat (Linear Ft.):	95.17	Total Cooling Requirement (Tons):	4.05
Total Latent Heat Gain (BTUH):	6370	Total Cooling CFM:	1458

Disclaimer

These computed results should be treated as estimates only and should be viewed as only one of the many tools required for a professional installation. The installing contractor's experience and expert judgement are also major factors in sizing and installing a complete system. The weather, customer usage, duct installation, and structure design may vary on each estimate and should be taken into account. Correct system sizing is based on the systems ability to meet both latent and sensible heat requirements, not just total BTUs.



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Heat Load Detail Report for O'Rourke, Ryan

Room 3 of 12

Room Specifications: Living Room

Room Length (Ft.) :	24	Sq. Ft windows facing NE & NW:	—	Watts Incandescent Light:	120
Room Width (Ft.) :	13	Sq. Ft windows facing South:	—	Watts Fluorescent Light:	—
Room Height (Ft.) :	8	Sq. Ft windows facing SE & SW:	—	Duct Length from A/H to room:	—
Exposed Wall Length (Ft.) :	28	Number of Exterior Doors:	1	Number of Large Electric Motors:	—
Wall against unconditioned room (Ft.) :	—	Sq. Ft. Exterior Doors:	21	Average Electric Motor Horsepower:	—
Sq. Ft windows facing North:	53	Number of People in Room:	2	BTUH Appliance Sensible Heat:	—
Sq. Ft windows facing E & W:	—			BTUH Appliance Latent Heat:	—

Indoor/Outdoor Design Temperatures (degrees Farenheit)

Summer:		Winter:	
Inside (Thermostat setting) :	70	Inside (Thermostat setting) :	72
Outside (Above ground):	97	Outside (Above ground) :	0
Outside (Below ground):	55	Outside (Below ground) :	55
Unconditioned Space :	97	Unconditioned Space :	40
Above Ceiling (Attic/Crawl Space) :	130	Above Ceiling (Attic/Crawl Space) :	40
Concrete Slab (Ground temperature) :	80	Concrete Slab (Ground temperature) :	40
Unconditioned Basement :	65	Unconditioned Basement :	50
Below Floor Crawl Space :	90	Below Floor Crawl Space :	50

Applicable Temperatures: Above Ceiling: Thermostat Setting Below Floor: Thermostat Setting Exposed Walls: Above Ground

Design Conditions

Occupant Sensible Load (BTUH per person) :	250
Occupant Latent Load (BTUH per person) :	200
Duct Insulation Factor :	1
Duct Temperature Difference (Summer) :	20
Duct Temperature Difference (Winter) :	45
Humidity Difference Inside/Outside % (Summer) :	20
Humidity Difference Inside/Outside % (Winter) :	15
Fresh Air Per Person (CFM) :	2
Air Change Factor (Air change per hour) :	.5
Space Shading Factor :	.4
Air Handler Design Cooling (CFM per ton) :	400
Hydronic Heat (BTUH per linear ft) :	600

Insulation Values (U-Factors)

Exposed Walls (Above Ground) :	.080
Exposed Walls (Below Ground) :	.5
Partitions :	.075
Roof/Ceiling :	.055
Floor (Above basement) :	.083
Floor (Concrete slab) :	.001
Floor (Between conditioned spaces) :	.287
Doors :	.500
Windows :	.900

Calculated Room Results - Summer Heat Gains

Wall Heat Gain (BTUH) :	484	Appliance/Elec Motor Latent Heat Gain (BTUH) :	400
Ceiling or Roof Heat Gain (BTUH) :	0	Appliance/Elec Motor Sensible Heat Gain (BTUH) :	909
Floor Heat Gain (BTUH) :	0	Ventilation Latent Heat Gain (BTUH) :	949
Glass Heat Gain (BTUH) :	0	Ventilation Sensible Gain (BTUH) :	2066
Exterior Door & North Window Heat Gain (BTUH) :	839	Summer Total Latent Heat Gain:	1349
Solar Heat Gain (BTUH) :	0	Summer Total Sensible Heat Gain (BTUH) :	4298
Total Transmission Heat Gain (BTUH) :	1323	TOTAL SUMMER COOLING LOAD (BTUH) :	5647

Calculated Room Results - Winter Heat Losses

Transmission Heat Losses (BTUH) :	3528	Latent Ventilation Heat Losses (BTUH) :	712
Sensible Ventilation Heat Losses (BTUH) :	5509	Hydronic Heat (Linear Ft.) :	16
		TOTAL WINTER HEATING LOAD (BTUH) :	9749

Calculated Totals for Entire Structure

Size of Structure (Sq. Ft.):	2527	Total Sensible Heat Gain (BTUH):	37337
Total Heat Loss (BTUH):	57102	Total Cooling Gain (BTUH):	43709
Total Hydronic Heat (Linear Ft.):	95.17	Total Cooling Requirement (Tons):	4.05
Total Latent Heat Gain (BTUH):	6370	Total Cooling CFM:	1458

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Heat Load Detail Report for O'Rourke, Ryan Room 4 of 12

Room Specifications: Hallway

Room Length (Ft.) :	9	Sq. Ft windows facing NE & NW :	--	Watts Incandescent Light:	--
Room Width (Ft.) :	3	Sq. Ft windows facing South:	--	Watts Fluorescent Light:	--
Room Height (Ft.) :	8	Sq. Ft windows facing SE & SW:	--	Duct Length from A/H to room:	--
Exposed Wall Length (Ft.) :	--	Number of Exterior Doors:	--	Number of Large Electric Motors:	--
Wall against unconditioned room (Ft.) :	--	Sq. Ft. Exterior Doors:	--	Average Electric Motor Horsepower:	--
Sq. Ft windows facing North:	--	Number of People in Room:	--	BTUH Appliance Sensible Heat:	--
Sq. Ft windows facing E & W:	--			BTUH Appliance Latent Heat:	--

Indoor/Outdoor Design Temperatures (degrees Farenheit)

Summer:		Winter:	
Inside (Thermostat setting) :	70	Inside (Thermostat setting) :	72
Outside (Above ground):	97	Outside (Above ground) :	0
Outside (Below ground):	55	Outside (Below ground) :	55
Unconditioned Space :	97	Unconditioned Space :	40
Above Ceiling (Attic/Crawl Space) :	130	Above Ceiling (Attic/Crawl Space) :	40
Concrete Slab (Ground temperature) :	80	Concrete Slab (Ground temperature) :	40
Unconditioned Basement :	65	Unconditioned Basement :	50
Below Floor Crawl Space :	90	Below Floor Crawl Space :	50

Applicable Temperatures: Above Ceiling: Thermostat Setting Below Floor: Thermostat Setting Exposed Walls: Above Ground

Design Conditions

Occupant Sensible Load (BTUH per person) :	250
Occupant Latent Load (BTUH per person) :	200
Duct Insulation Factor :	1
Duct Temperature Difference (Summer) :	20
Duct Temperature Difference (Winter) :	45
Humidity Difference Inside/Outside % (Summer) :	20
Humidity Difference Inside/Outside % (Winter) :	15
Fresh Air Per Person (CFM) :	2
Air Change Factor (Air change per hour) :	.5
Space Shading Factor :	.4
Air Handler Design Cooling (CFM per ton) :	400
Hydronic Heat (BTUH per linear ft. :	600

Insulation Values (U-Factors)

Exposed Walls (Above Ground) :	.080
Exposed Walls (Below Ground) :	.5
Partitions :	.075
Roof/Ceiling :	.055
Floor (Above basement) :	.083
Floor (Concrete slab) :	.001
Floor (Between conditioned spaces) :	.287
Doors :	.500
Windows :	.900

Calculated Room Results - Summer Heat Gains

Wall Heat Gain (BTUH) :	0	Appliance/Elec Motor Latent Heat Gain (BTUH) :	0
Ceiling or Roof Heat Gain (BTUH) :	0	Appliance/Elec Motor Sensible Heat Gain (BTUH) :	0
Floor Heat Gain (BTUH) :	0	Ventilation Latent Heat Gain (BTUH) :	24
Glass Heat Gain (BTUH) :	0	Ventilation Sensible Gain (BTUH) :	53
Exterior Door & North Window Heat Gain (BTUH) :	0	Summer Total Latent Heat Gain:	24
Solar Heat Gain (BTUH) :	0	Summer Total Sensible Heat Gain (BTUH) :	53
Total Transmission Heat Gain (BTUH) :	0	TOTAL SUMMER COOLING LOAD (BTUH) :	77

Calculated Room Results - Winter Heat Losses

Transmission Heat Losses (BTUH) :	0	Latent Ventilation Heat Losses (BTUH) :	18
Sensible Ventilation Heat Losses (BTUH) :	140	Hydronic Heat (Linear Ft.) :	0
		TOTAL WINTER HEATING LOAD (BTUH) :	158

Calculated Totals for Entire Structure

Size of Structure (Sq. Ft.):	2527	Total Sensible Heat Gain (BTUH):	37337
Total Heat Loss (BTUH):	57102	Total Cooling Gain (BTUH):	43709
Total Hydronic Heat (Linear Ft.):	95.17	Total Cooling Requirement (Tons):	4.05
Total Latent Heat Gain (BTUH):	6370	Total Cooling CFM:	1458

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Heat Load Detail Report for O'Rourke, Ryan Room 5 of 12

Room Specifications: Kitchen

Room Length (Ft.) :	23	Sq. Ft windows facing NE & NW:	—	Watts Incandescent Light:	120
Room Width (Ft.) :	11	Sq. Ft windows facing South:	64	Watts Fluorescent Light:	—
Room Height (Ft.) :	8	Sq. Ft windows facing SE & SW:	—	Duct Length from A/H to room:	—
Exposed Wall Length (Ft.) :	23	Number of Exterior Doors:	1	Number of Large Electric Motors:	1
Wall against unconditioned room (Ft.) :	—	Sq. Ft. Exterior Doors:	21	Average Electric Motor Horsepower:	3.5
Sq. Ft windows facing North:	—	Number of People in Room:	2	BTUH Appliance Sensible Heat:	800
Sq. Ft windows facing E & W:	—			BTUH Appliance Latent Heat:	400

Indoor/Outdoor Design Temperatures (degrees Farenheit)

Summer:		Winter:	
Inside (Thermostat setting) :	70	Inside (Thermostat setting) :	72
Outside (Above ground):	97	Outside (Above ground) :	0
Outside (Below ground):	55	Outside (Below ground) :	55
Unconditioned Space :	97	Unconditioned Space :	40
Above Ceiling (Attic/Crawl Space) :	130	Above Ceiling (Attic/Crawl Space) :	40
Concrete Slab (Ground temperature) :	80	Concrete Slab (Ground temperature) :	40
Unconditioned Basement :	65	Unconditioned Basement :	50
Below Floor Crawl Space :	90	Below Floor Crawl Space :	50

Applicable Temperatures: Above Ceiling: Thermostat Setting Below Floor: Thermostat Setting Exposed Walls: Above Ground

Design Conditions

Occupant Sensible Load (BTUH per person) :	250
Occupant Latent Load (BTUH per person) :	200
Duct Insulation Factor :	1
Duct Temperature Difference (Summer) :	20
Duct Temperature Difference (Winter) :	45
Humidity Difference Inside/Outside % (Summer) :	20
Humidity Difference Inside/Outside % (Winter) :	15
Fresh Air Per Person (CFM) :	2
Air Change Factor (Air change per hour) :	.5
Space Shading Factor :	.4
Air Handler Design Cooling (CFM per ton) :	400
Hydronic Heat (BTUH per linear ft) :	600

Insulation Values (U-Factors)

Exposed Walls (Above Ground) :	.080
Exposed Walls (Below Ground) :	.5
Partitions :	.075
Roof/Ceiling :	.055
Floor (Above basement) :	.083
Floor (Concrete slab) :	.001
Floor (Between conditioned spaces) :	.287
Doors :	.500
Windows :	.900

Calculated Room Results - Summer Heat Gains

Wall Heat Gain (BTUH) :	397	Appliance/Elec Motor Latent Heat Gain (BTUH) :	800
Ceiling or Roof Heat Gain (BTUH) :	0	Appliance/Elec Motor Sensible Heat Gain (BTUH) :	13585
Floor Heat Gain (BTUH) :	0	Ventilation Latent Heat Gain (BTUH) :	896
Glass Heat Gain (BTUH) :	1417	Ventilation Sensible Gain (BTUH) :	1951
Exterior Door & North Window Heat Gain (BTUH) :	238	Summer Total Latent Heat Gain:	1696
Solar Heat Gain (BTUH) :	0	Summer Total Sensible Heat Gain (BTUH) :	17588
Total Transmission Heat Gain (BTUH) :	2053	TOTAL SUMMER COOLING LOAD (BTUH) :	19285

Calculated Room Results - Winter Heat Losses

Transmission Heat Losses (BTUH) :	5473	Latent Ventilation Heat Losses (BTUH) :	672
Sensible Ventilation Heat Losses (BTUH) :	5202	Hydronic Heat (Linear Ft.) :	19
		TOTAL WINTER HEATING LOAD (BTUH) :	11348

Calculated Totals for Entire Structure

Size of Structure (Sq. Ft.):	2527	Total Sensible Heat Gain (BTUH):	37337
Total Heat Loss (BTUH):	57102	Total Cooling Gain (BTUH):	43709
Total Hydronic Heat (Linear Ft.):	95.17	Total Cooling Requirement (Tons):	4.05
Total Latent Heat Gain (BTUH):	6370	Total Cooling CFM:	1458

Disclaimer

These computed results should be treated as estimates only and should be viewed as only one of the many tools required for a professional installation. The installing contractor's experience and expert judgement are also major factors in sizing and installing a complete system. The weather, customer usage, duct installation, and structure design may vary on each estimate and should be taken into account. Correct system sizing is based on the systems ability to meet both latent and sensible heat requirements, not just total BTUs.



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Heat Load Detail Report for O'Rourke, Ryan Room 6 of 12

Room Specifications: Fireplace Room

Room Length (Ft.) :	21	Sq. Ft windows facing NE & NW :	--	Watts Incandescent Light:	120
Room Width (Ft.) :	14	Sq. Ft windows facing South:	24	Watts Fluorescent Light:	--
Room Height (Ft.) :	9	Sq. Ft windows facing SE & SW :	--	Duct Length from A/H to room:	--
Exposed Wall Length (Ft.) :	28	Number of Exterior Doors:	--	Number of Large Electric Motors:	--
Wall against unconditioned room (Ft.) :	21	Sq. Ft. Exterior Doors:	--	Average Electric Motor Horsepower:	--
Sq. Ft windows facing North:	24	Number of People in Room:	2	BTUH Appliance Sensible Heat:	--
Sq. Ft windows facing E & W:	--			BTUH Appliance Latent Heat:	--

Indoor/Outdoor Design Temperatures (degrees Farenheit)

Summer:		Winter:	
Inside (Thermostat setting) :	70	Inside (Thermostat setting) :	72
Outside (Above ground):	97	Outside (Above ground) :	0
Outside (Below ground):	55	Outside (Below ground) :	55
Unconditioned Space :	97	Unconditioned Space :	40
Above Ceiling (Attic/Crawl Space) :	130	Above Ceiling (Attic/Crawl Space) :	40
Concrete Slab (Ground temperature) :	80	Concrete Slab (Ground temperature) :	40
Unconditioned Basement :	65	Unconditioned Basement :	50
Below Floor Crawl Space :	90	Below Floor Crawl Space :	50

Applicable Temperatures: Above Ceiling: Thermostat Setting Below Floor: Crawl Space Exposed Walls: Above Ground

Design Conditions

Occupant Sensible Load (BTUH per person) :	250
Occupant Latent Load (BTUH per person) :	200
Duct Insulation Factor :	1
Duct Temperature Difference (Summer) :	20
Duct Temperature Difference (Winter) :	45
Humidity Difference Inside/Outside % (Summer) :	20
Humidity Difference Inside/Outside % (Winter) :	15
Fresh Air Per Person (CFM) :	2
Air Change Factor (Air change per hour) :	.5
Space Shading Factor :	.4
Air Handler Design Cooling (CFM per ton) :	400
Hydronic Heat (BTUH per linear ft :	600

Insulation Values (U-Factors)

Exposed Walls (Above Ground) :	.080
Exposed Walls (Below Ground) :	.5
Partitions :	.075
Roof/Ceiling :	.055
Floor (Above basement) :	.083
Floor (Concrete slab) :	.001
Floor (Between conditioned spaces) :	.287
Doors :	.500
Windows :	.900

Calculated Room Results - Summer Heat Gains

Wall Heat Gain (BTUH) :	927	Appliance/Elec Motor Latent Heat Gain (BTUH) :	400
Ceiling or Roof Heat Gain (BTUH) :	0	Appliance/Elec Motor Sensible Heat Gain (BTUH) :	909
Floor Heat Gain (BTUH) :	488	Ventilation Latent Heat Gain (BTUH) :	296
Glass Heat Gain (BTUH) :	531	Ventilation Sensible Gain (BTUH) :	644
Exterior Door & North Window Heat Gain (BTUH) :	272	Summer Total Latent Heat Gain:	696
Solar Heat Gain (BTUH) :	0	Summer Total Sensible Heat Gain (BTUH) :	3772
Total Transmission Heat Gain (BTUH) :	2219	TOTAL SUMMER COOLING LOAD (BTUH) :	4468

Calculated Room Results - Winter Heat Losses

Transmission Heat Losses (BTUH) :	4585	Latent Ventilation Heat Losses (BTUH) :	222
Sensible Ventilation Heat Losses (BTUH) :	1718	Hydronic Heat (Linear Ft.) :	11
		TOTAL WINTER HEATING LOAD (BTUH) :	6525

Calculated Totals for Entire Structure

Size of Structure (Sq. Ft.):	2527	Total Sensible Heat Gain (BTUH):	37337
Total Heat Loss (BTUH):	57102	Total Cooling Gain (BTUH):	43709
Total Hydronic Heat (Linear Ft.):	95.17	Total Cooling Requirement (Tons):	4.05
Total Latent Heat Gain (BTUH):	6370	Total Cooling CFM:	1458

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