

HEAT LOSS ESTIMATING CHART

BTU/HR/FT²

Sq. Ft.	Building Data	METAL BUILDING with 3" insulation in roof and walls.							CONCRETE BUILDING with built-up roofing with 3" insulation.						
		<i>Btu/hr per Sq. Ft. Based on Temperature Differential</i>							<i>Btu/hr per Sq. Ft. Based on Temperature Differential</i>						
		35°ΔT	45°ΔT	55°ΔT	65°ΔT	75°ΔT	85°ΔT	95°ΔT	35°ΔT	45°ΔT	55°ΔT	65°ΔT	75°ΔT	85°ΔT	95°ΔT
1,500	Ceiling Height = 16' Est. Air Change/Hr. = 1 Overhead Doors = 1, 12'x12' Skylights = 2, 3'x4'	40	51	63	74	85	97	108	67	86	105	124	144	163	182
3,200	Ceiling Height = 18' Est. Air Change/Hr. = 1 Overhead Doors = 1, 14'x14' Skylights = 4, 3'x4'	31	40	49	57	66	75	84	53	68	83	98	113	128	143
4,800	Ceiling Height = 18' Est. Air Change/Hr. = 1 Overhead Doors = 2, 14'x14' Skylights = 4, 3'x4'	28	36	44	52	60	68	76	45	58	71	84	97	110	123
5,000	Ceiling Height = 17' Est. Air Change/Hr. = 1 Overhead Doors = 2, 12'x14' Skylights = 4, 3'x4'	27	34	42	50	57	65	73	44	56	68	81	93	106	118
8,000	Ceiling Height = 18' Est. Air Change/Hr. = 1 Overhead Doors = 2, 12'x14' Skylights = 4, 3'x4'	23	30	37	43	50	57	63	37	48	58	69	79	90	101
10,000	Ceiling Height = 16' Est. Air Change/Hr. = 0.75 Overhead Doors = 3, 12'x16' Skylights = 6, 3'x4'	21	28	34	40	46	52	58	35	45	55	65	75	85	95
18,000	Ceiling Height = 20' Est. Air Change/Hr. = 0.5 Overhead Doors = 4, 12'x16' Skylights = 6, 3'x4'	16	21	25	30	34	39	43	27	34	42	49	57	65	72

DIRECTIONS: To estimate the heat loss of a building, locate the line that is closest to the square footage of the building. Follow the line across to the column that corresponds to the temperature differential (the desired inside design temperature less the outside design temperature) for the type of building (i.e., metal or concrete). Multiply the area of the building by the Btu/hr per sq. ft. listed in that column. **EXAMPLE:** 30' x 50' metal building with 3" insulation in the roof and walls, located in Columbus, Ohio. Inside Design Temperature of 65°F; Outside Design Temperature of 0°F. For a 1500 sq. ft. building, the Metal Building Chart indicates 74 Btu/hr per sq. ft. at a Temperature Differential of 65°. The estimated building heat loss would be 111,000 Btu/hr (30' x 50' x 74 Btu/hr per sq. ft.); therefore, an infrared heating system equal to or exceeding 111,000 Btu/hr should be selected.

Note: Both charts assume 500 CFM exhaust and one personnel door.

This chart should be used as a guideline for sizing the infrared heating system using SunStar heaters and is based on certain data and assumptions. The designer should adjust the recommendation if the building usage and characteristics vary significantly from the examples. Deleted or inaccurate information and other factors that are not included within the data and assumptions could have a bearing on the results. The heat loss projection provided is intended only as an illustration and is provided as a service to SunStar customers. For any building over 10,000 sq. ft., SunStar will be glad to assist you with a SunCalc® heat loss analysis.