

SPACE-RAY
INFRARED GAS HEATERS

COMPUHEAT BUILDING HEAT LOSS & DESIGN ANALYSIS

Date: 05-01-2012 Time: 11:39:59

Prepared by: RJ Herrington

Job Name: Warehouse - Lincoln, NE

2 Wall(s)	16 ' high	240 ' wide	16 ' peak	7680 sq ft	U = 0.09
2 Wall(s)	16 ' high	100 ' wide	26 ' peak	4200 sq ft	U = 0.09
2 Wall(s)	4 ' high	240 ' wide	4 ' peak	1920 sq ft	U = 0.33
2 Wall(s)	4 ' high	100 ' wide	4 ' peak	800 sq ft	U = 0.33
10 Window(s)	4 ' high	4 ' wide		160 sq ft	U = 0.66
10 Door(s)	12 ' high	12 ' wide		1440 sq ft	U = 1.20
4 Door(s)	7 ' high	3 ' wide		84 sq ft	U = 1.20
10 Skylight(s)	3 ' high	8 ' wide		240 sq ft	U = 0.70
1 Floor section	240 ' long	100 ' wide		24000 sq ft	
1 Roof section	240 ' long	100 ' wide	25.0 ' high	24000 sq ft	U = 0.09
2 Slab edge	240 ' long		total slab edge length =	480 ft	U = 0.55
2 Slab edge	100 ' long		total slab edge length =	200 ft	U = 0.55

Total Net Area Of Each Basic Surface

Walls	Skylights	Windows	Doors
12916 sq ft	240 sq ft	160 sq ft	1524 sq ft
Floor Area	Perimeter	Roof Area	
24000 sq ft	680 ft	24235 sq ft	

Basic Building Heat Loss

+ Conduction Loss	=	444861 BTU/hr	Power Vent Flow	=	2500 CFM
- Internal Heat Source	=	0 BTU/hr	Total Vent Flow	=	2500 CFM
+ Infil Air Heat Loss	=	269745 BTU/hr	Infiltration Air Flow	=	3500 CFM
Total Building Heat Loss	=	714606 BTU/hr			
Height Inlet to Outlet	=	24 Feet	Building Volume	=	600000 cu ft

Design Temperatures 65°F Indoor -5°F Outdoor 70°F Temperature Difference
 Recommended Heater Mounting Height 18 ft



COMPUHEAT ESTIMATED ANNUAL FUEL COST

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Condition 1 Heater requirements with existing building ventilation

Existing Building Vent Flow = 2500 CFM
 Total Computed Heat Loss = 907281 BTU/hr
 Infrared Heat Required = 734898 BTU/hr
 Space - Ray Model LTU100 Input rating 100000 BTU/hr Natural Gas

Total No. of Space-Ray Heaters = 8

Input BTUH/cu. ft. Bldg. Volume = 1.3 Infrared Heater Input = 800000 BTU/hr
 Input BTUH/sq. ft. Bldg. Area = 33.3 Total Computed Air Changes = 0.60 AC/hr
 Maximum Temperature Rise With Recommended Heaters = 76.2 °F

Building Operation Parameters

Normal Operating Conditions

Inside Design Temperature = 65 °F
 Outside Design Temperature = -5 °F
 Operating Hours per Day = 12
 Operating Days per Week = 5

Setback Operating Conditions

Setback Temperature = 50°F
 Hours per Day = 12
 Days per Week = 5
 Weekend Hours per Day = 24
 Weekend Days per Week = 2

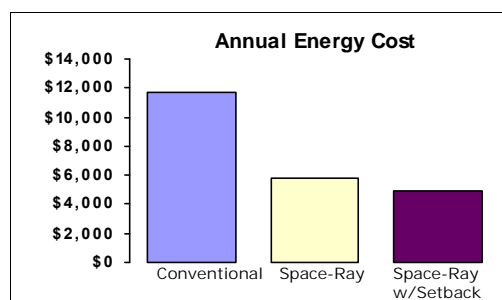
Degree Days @ Normal 65 °F Inside Design Temperature = 6375
 Degree Days @ Setback 50 °F Inside Design Temperature = 3285

Fuel Specifications

Type of Fuel = Natural Gas
 Fuel Cost = \$ 0.60 per therm

Estimated Annual Fuel Cost

Conventional Unit Heaters = \$ 11,649
 Space-Ray InfraRed Heaters = \$ 5,850
 Space-Ray InfraRed Heaters w / Night Setback = \$ 4,934



The foregoing COMPUHEAT heat loss analysis is based on certain data and assumptions provided to the Space-Ray division of Gas-Fired Products, Inc. However, deleted or inaccurate information and other factors not included within the data and assumptions could have a bearing on the results shown herein. The heat loss projection provided is intended only as an illustration and is provided only as a service to Gas-Fired Products' customers, and Gas-Fired Products, Inc. makes no warranties, express or implied, with respect thereto, and disclaims any liability for consequential or other damages.