Report No. 12143
Date: 05/04/05

Fuel Reduction Pilot Program

CONDUCTED AT

QUINNIPIAC CLUB - NEW HAVEN, CT

FOR

NXEGEN

TEST RESULTS
FOR A
HOT-WATER BOILER

A Confidential Report
Prepared by
Intellidyne LLC

INTELLIDYNE
"Smart ways to save energy"

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Test Report

Report No. 12143

Date: 05/04/05

Customer:

NXEGEN
362 Indutrial Park Rd
Middletown,CT 06457

Test Site Location:

Quinnipiac Club
221 Church St.
New Haven, CT 06510

Test Type: ☑ HEATING ☐ AIR CONDITIONING ☐ REFRIGERATION ☐ OTHER:

Product Tested: ☐ HW ☐ LCH ☑ LCS ☐ CHW ☐ CHS ☐ AC ☐ CAC ☐ RU ☐ OTHER:

Type of Equipment:

Manuf.: HB Smith / Burner is An Iron Fireman
Model: 450 Mills / HP GO-4-4.5
Fuel: Oil

Application: Heating & DHW
Area Served: Entire Building

Test Start Date: 03/18/05

Test End Date: 04/16/05

No. of Days in Test: 30

BURNER RUN-TIME:

☑ in HRS. ☐ in MIN.

***IntelliCon* ON-DAYS:** 73:48:47

***IntelliCon* OFF-DAYS:** 82:23:14

RUN-TIME was reduced by: 10.41%

BURNER USAGE FACTOR:

***IntelliCon* On-Days:** 21%

***IntelliCon* Off-Days:** 23%

HEATING DEGREE-DAYS (FOR TEST PERIOD)

IntelliCon ON-DAYS: 296

It was 4.3% **Colder on the On-Days.**

IntelliCon OFF-DAYS: 284

Total Degree-Days: 580

SOLAR LOAD COMPENSATION: (Lumens/Sq. Ft.)

IntelliCon ON-DAYS: 173101

IntelliCon OFF-DAYS: 171471

It was < 1% **Sunnier on the On-Days.**

BURNER CYCLING REDUCTION:

IntelliCon ON-DAYS: 1617

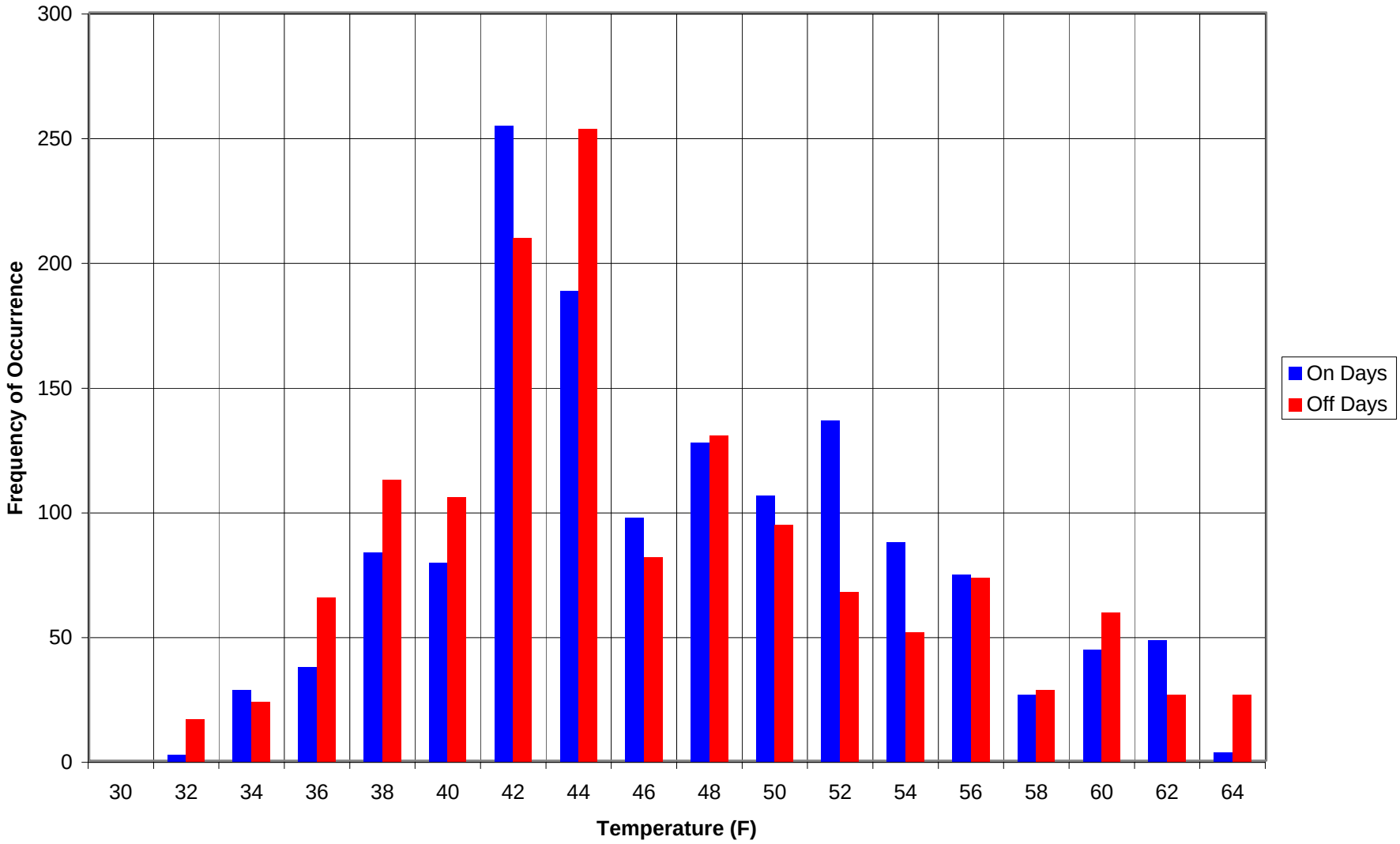
IntelliCon OFF-DAYS: 2066

Cycling was reduced by: 21.7%

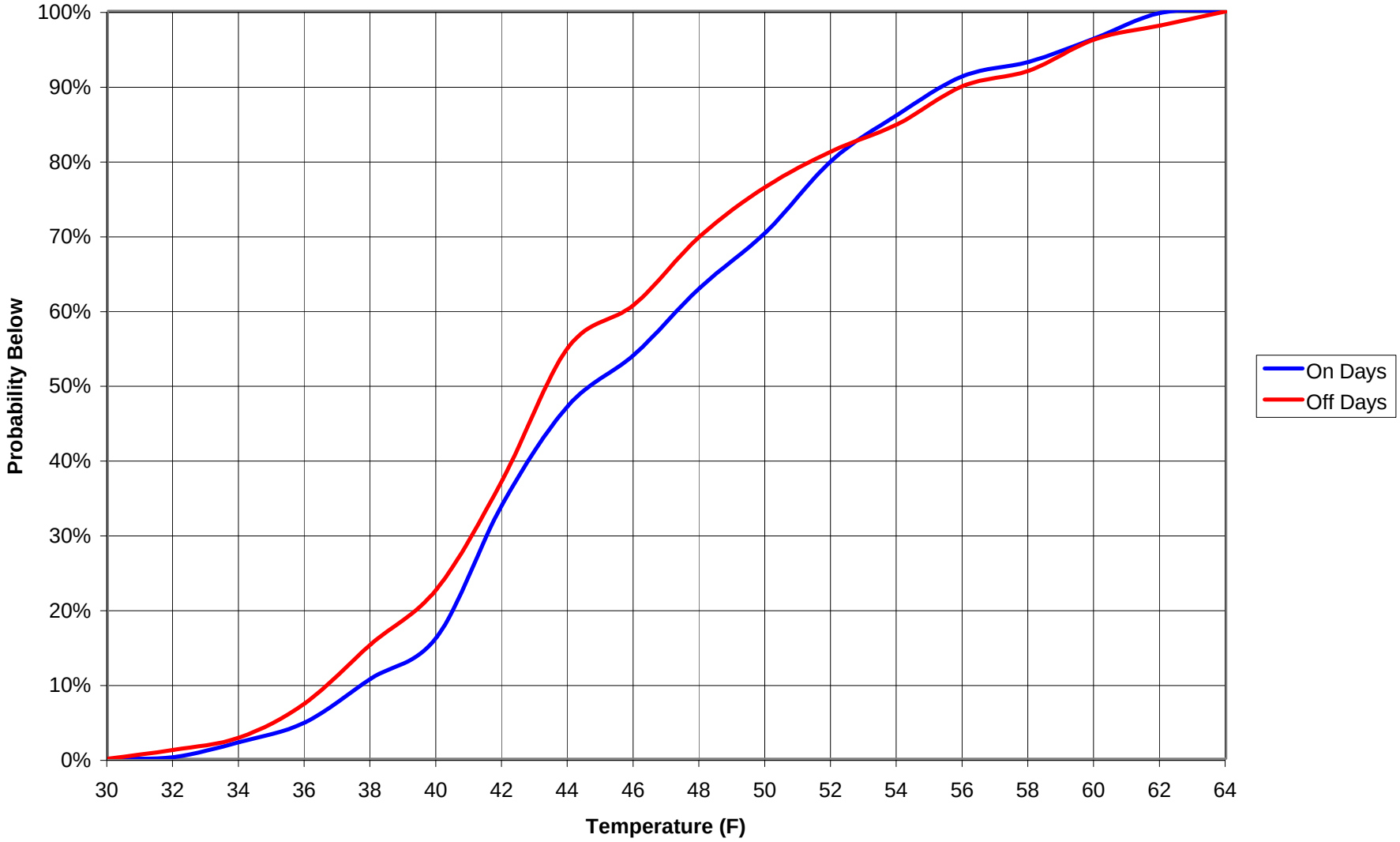
Savings = 11.36%

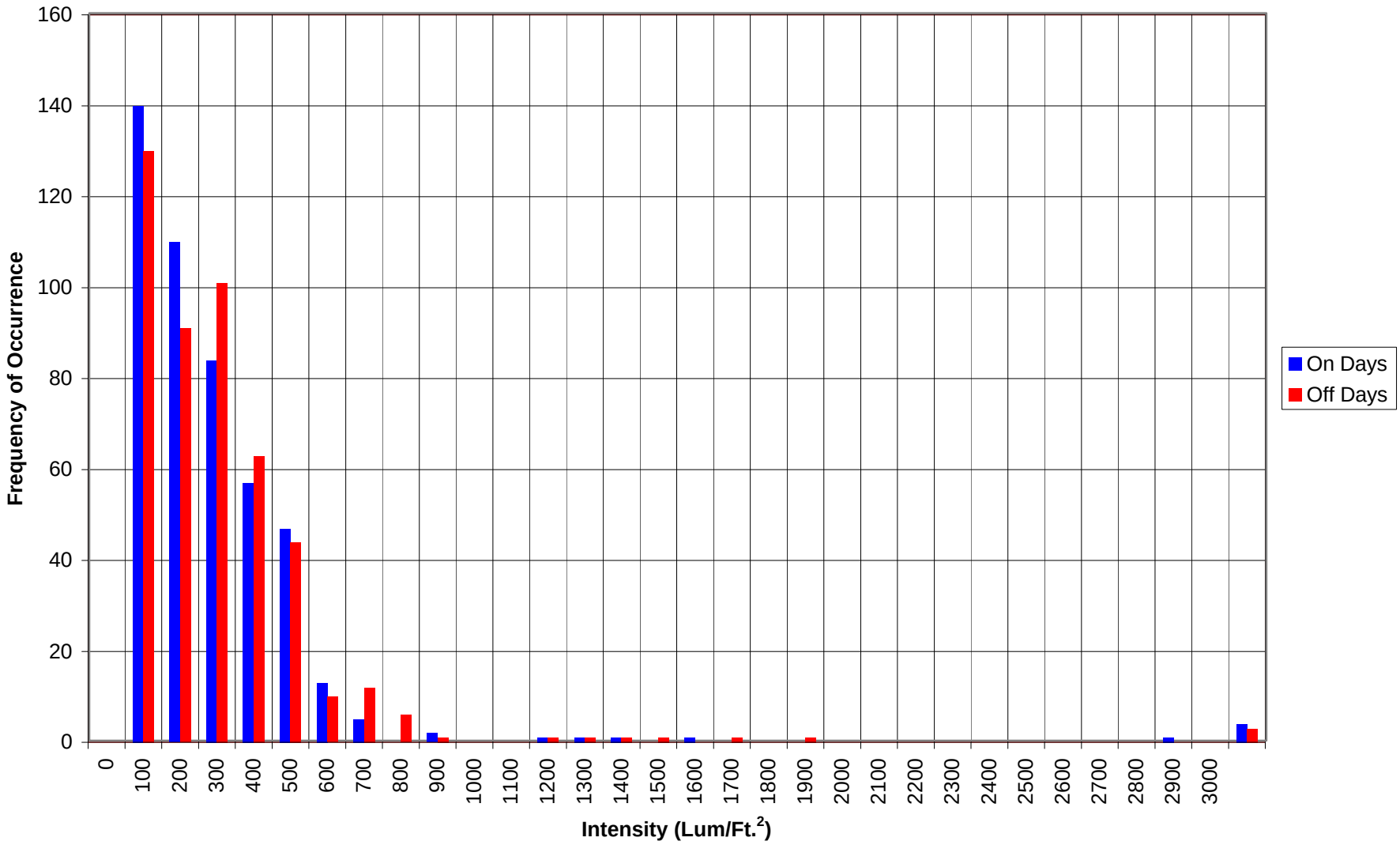
COMMENTS:

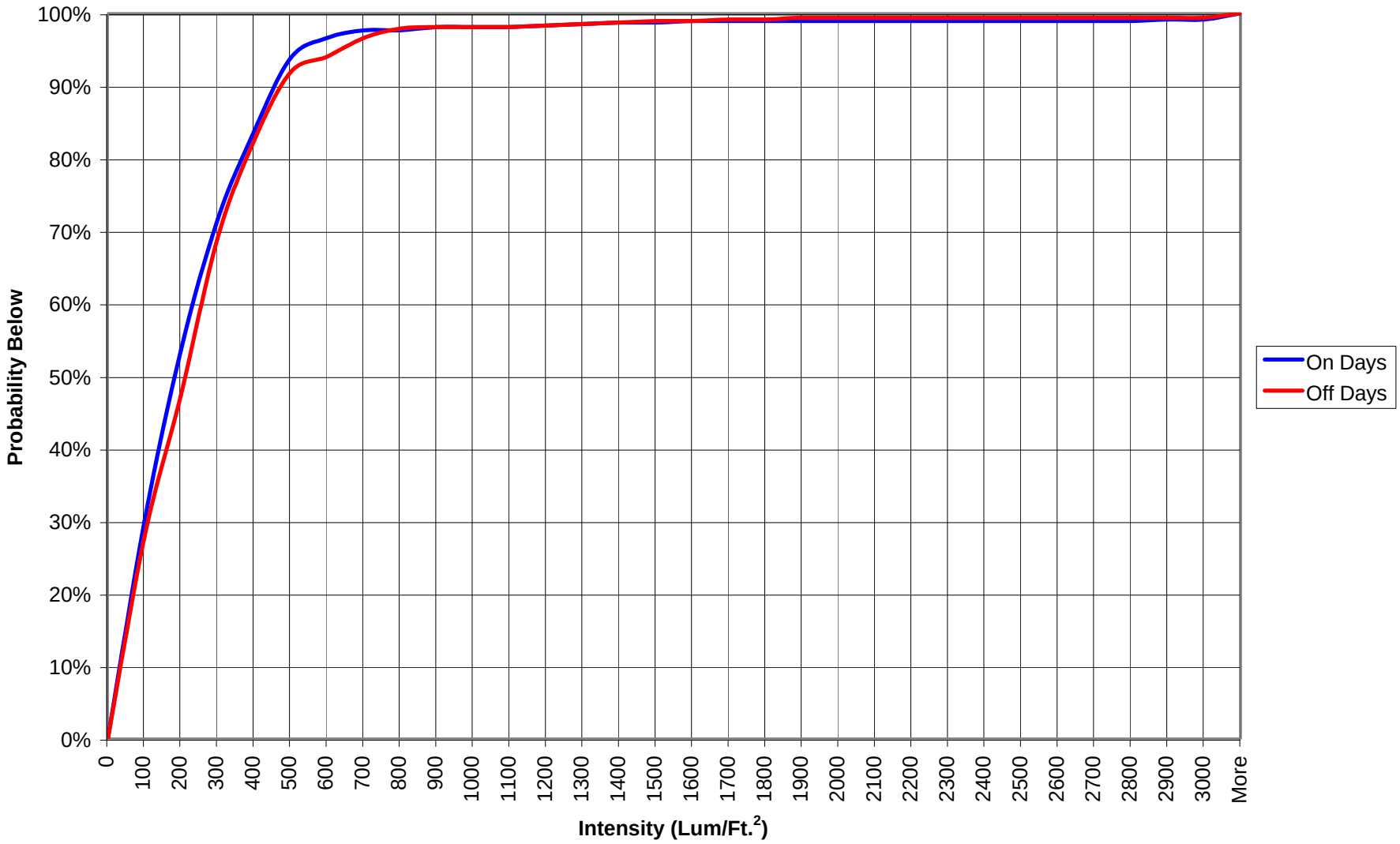
Data analysis revealed that during the test period a 1% increase in heating degree-days caused a 0.25% increases in runtimes. As such, for the purpose of normalizing the data for calculation purposes, the On-Day runtimes were reduced by 1.1% to compensate for the difference in degree-days. Differences in solar load were less than 1%, thus the loading effect was negligible and was not compensated for. Usage factors are low which is indicative of either an oversized system or a system that is not under a normal load. Log data provided from the test site indicates that the system was not in the heating mode for opproximately 50% of the time, due to elevated outdoor temperatures. Savings results would be higher under normal loading conditions (during winter months)... Further data analysis revealed that the IntelliCon control reduced fuel consumption for Domestic Hot generation water by approx. 18.5%, when the system was not in the heating mode. Boiler # 2 did not run at all during the test period.


Outside Air Temperature Histogram (3/18/05 --4/16/05)
Frequency of Occurrence
300
250
200
150
100
50
0
30
32
34
36
38
40
42
44
46
48
50
52
54
56
58
60
62
64
Temperature (F)
On Days
Off Days

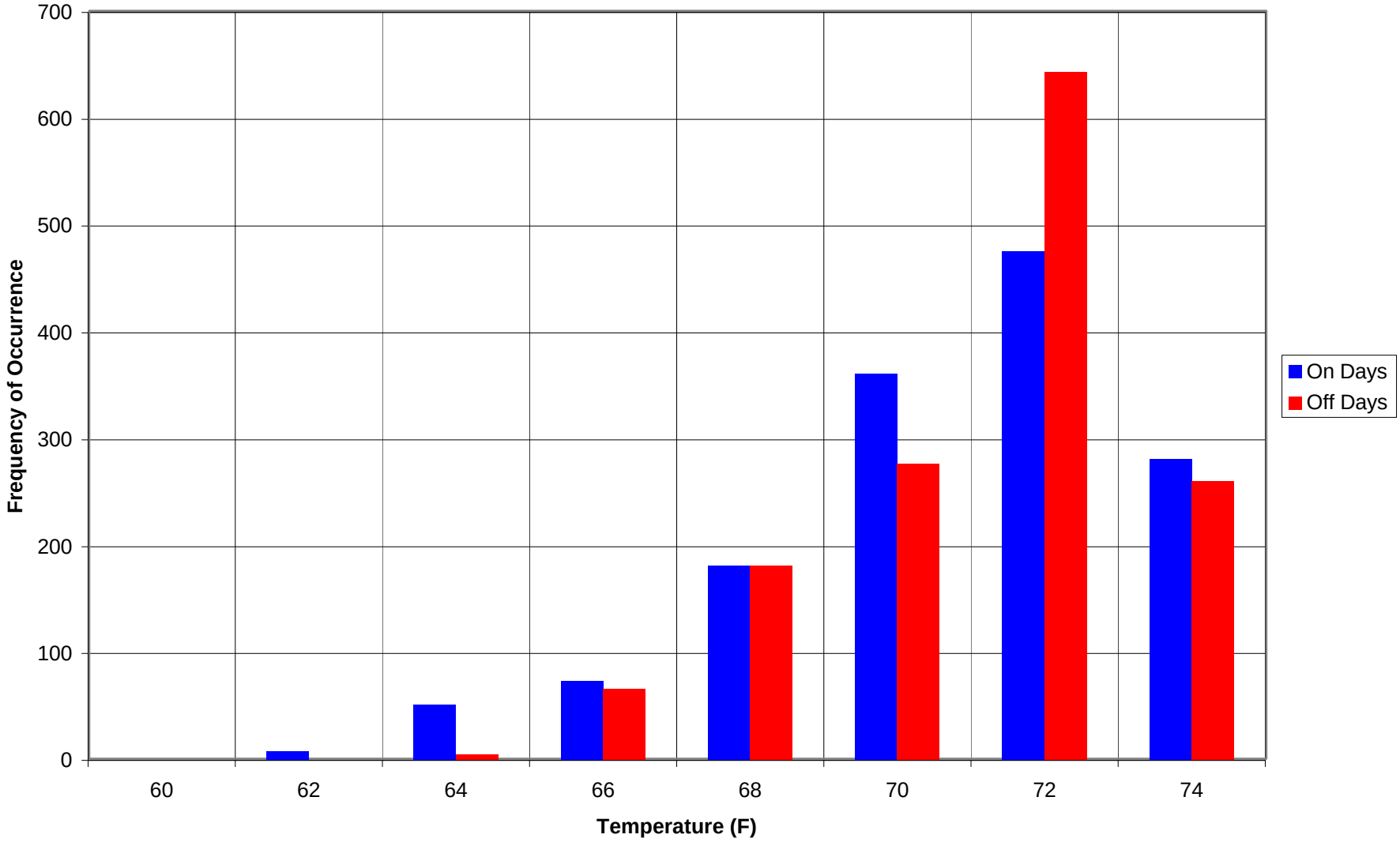
Outside-Air Temperature Probabilities (3/18/05 --4/16/05)

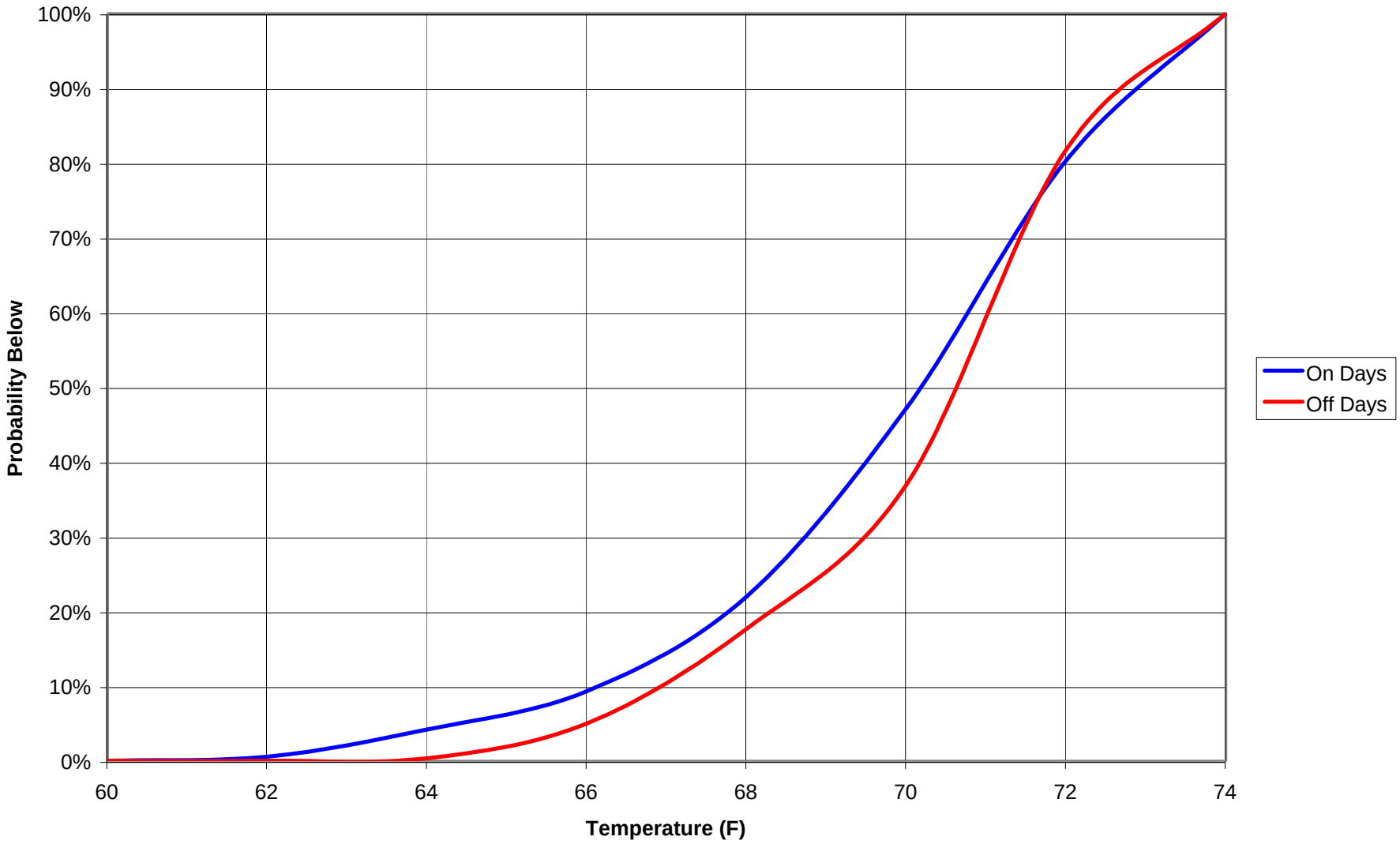



Solar Load Probabilities (3/18/05 --4/16/05)
Frequency of Occurrence
160
140
120
100
80
60
40
20
0
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
2500
2600
2700
2800
2900
3000
Intensity (Lum/Ft.2)
On Days
Off Days


Solar Load Probabilities (3/18/05 --4/16/05)
Probability Below
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
2500
2600
2700
2800
2900
3000
More
Intensity (Lum/Ft.2)
On Days
Off Days

Space Temperature Histogram (3/18/05 --4/16/05)




Space Temperature Probabilities (3/18/05 --4/16/05)
Probability Below
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
60
62
64
66
68
70
72
74
Temperature (F)
On Days
Off Days