



Report No. 12168
Date: 05/12/12

Energy Reduction Pilot Program

CONDUCTED AT

DISNEY'S ANIMAL KINGDOM

FOR

Walt Disney World

TEST RESULTS

FOR

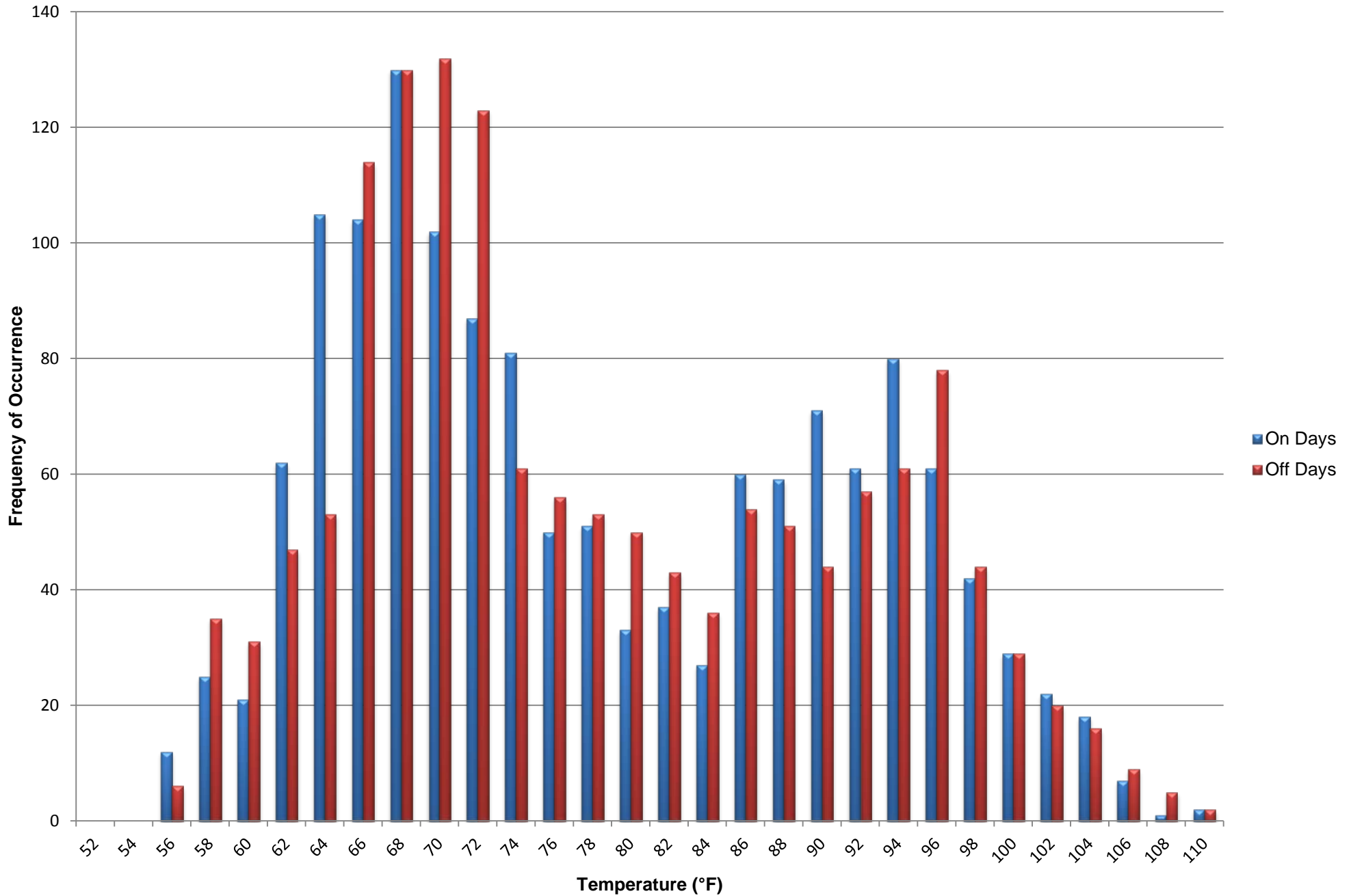
HOT-WATER BOILERS AND AIR CONDITIONERS

A Confidential Report

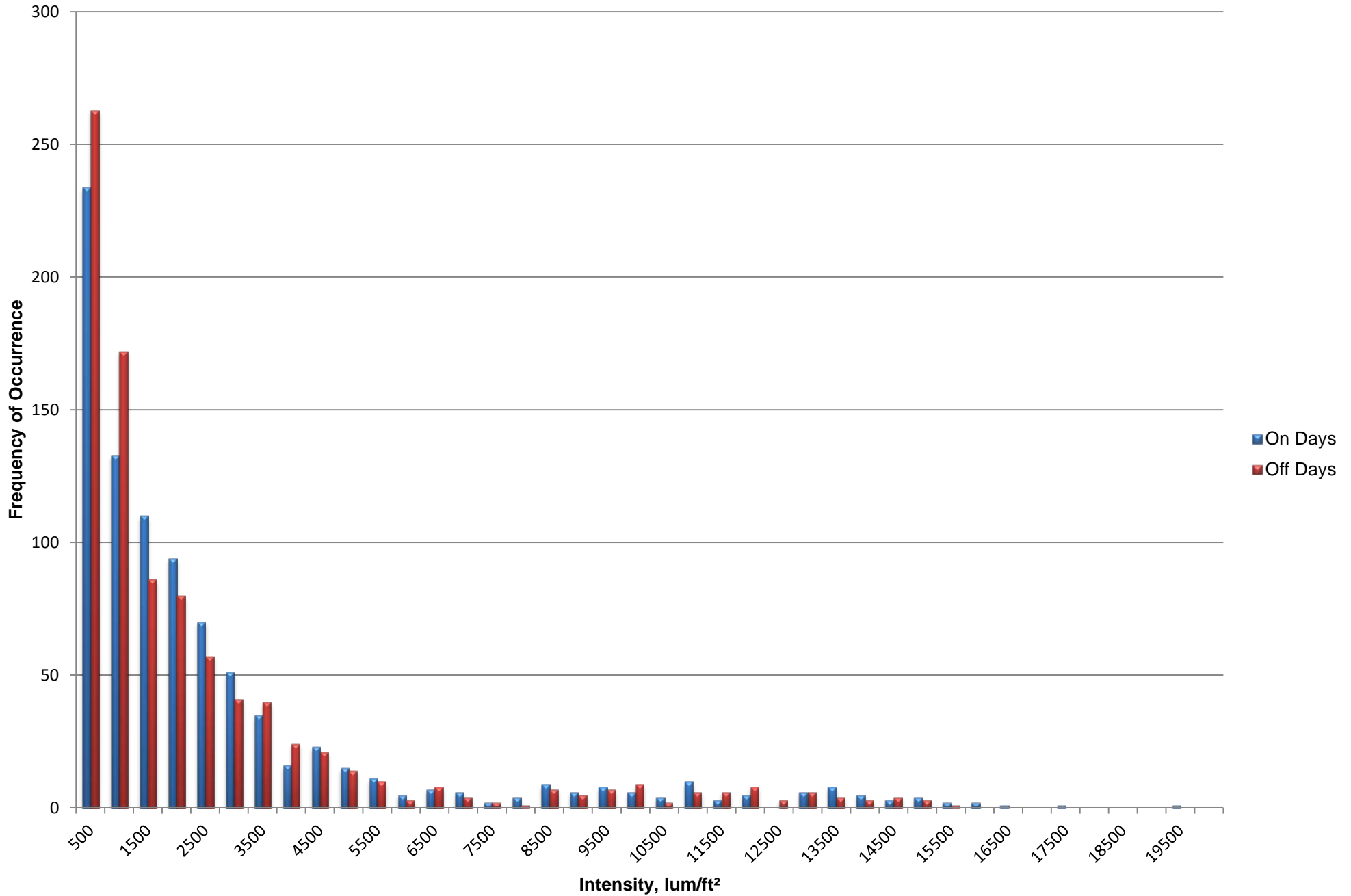
Prepared by

Intellidyne LLC

Disney's Animal Kingdom OAT Histogram Test Period 03/23/2012 - 04/22/2012



Disney's Animal Kingdom Solar Influence Histogram Test Period 03/23/2012 - 04/22/2012





303 Sunnyside Blvd., Suite 75
 Plainview, NY 11803-1508
 Phone:(516) 676-0777

Test Report

Report No. **12168-1**

Date: **05/12/12**

Customer:

Walt Disney World
 Lake Buena Vista, FL 32830

Contact: David Pecor

Test Site Location:

Disney's Animal Kingdom
 Pride Rock

Test Type: HEATING AIR CONDITIONING REFRIGERATION OTHER: _____

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

Type of Equipment:

Manufacturer: Lochinvar
 Model: CFN1260PN
 Capacity / SetPt: (1260 MBH) 155°F/3°F Diff, 150°F/3°F Diff
 Fuel Type: Gas
 Application: Domestic Hot Water Generation
 Area Served: Pride Rock Bldg.
 Misc.

Test Start Date: **03/23/12**

Test End Date: **04/21/12**

No. of Days in Test: **30**

TOTAL BURNER RUN-TIME: in HRS. in MIN.

IntelliCon ON-DAYS: **115:03:10**

IntelliCon OFF-DAYS: **128:42:08** **RUN-TIME was reduced by: 10.61%**

BURNER USAGE FACTOR

IntelliCon On-Days: **32%**

IntelliCon Off-Days: **36%**

TOTAL BURNER CYCLING REDUCTION:

IntelliCon ON-DAYS: **4146**

IntelliCon OFF-DAYS: **4338** **TOTAL Cycle Reduction: 4.43%**

Savings = 10.61%

COMMENTS: The Boiler is a four (4) stage boiler. Stages 3 and 4 were non-functional and require repair. Stage 2 was functional, but did not run at all during the testing period. As such the ROI analysis will be calculated based upon the Boiler's total BTU input divided by 4.



303 Sunnyside Blvd., Suite 75
 Plainview, NY 11803-1508
 Phone:(516) 676-0777

Test Report

Report No. **12168-2**

Date: **05/12/12**

Customer:

Walt Disney World
 Lake Buena Vista, FL 32830

Contact: David Pecor

Test Site Location:

Disney's Animal Kingdom
 Ladies Room

Test Type: HEATING AIR CONDITIONING REFRIGERATION OTHER: _____

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

Type of Equipment:

Manufacturer: Bard
 Model: Unknown (painted over)
 Capacity / SetPt: 71°F
 Fuel Type:
 Application: Cooling
 Area Served: Restroom
 Misc. 240vac, 5.3amps, single phase

Test Start Date: **03/23/12**
 Test End Date: **04/21/12**
 No. of Days in Test: **30**

COMPRESSOR RUN-TIME:

in HRS. in MIN.

IntelliCon ON-DAYS: **135:40:20**

IntelliCon OFF-DAYS: **141:35:21**

RUN-TIME was reduced by: **4.18%**

COMPRESSOR USAGE FACTOR:

IntelliCon On-Days: **38%**

IntelliCon Off-Days: **39%**

COOLING DEGREE-DAYS (FOR TEST PERIOD)

IntelliCon ON-DAYS: **20578**

It was **11.7%** Warmer on the On-Days.

IntelliCon OFF-DAYS: **18420**

Total Degree-Days: **38997**

USAGE PER DEGREE-DAY

ON-DAYS: **0:00:24**

OFF-DAYS: **0:00:28**

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

IntelliCon ON-DAYS: **2245807**

IntelliCon OFF-DAYS: **2015909**

It was **11.40%** Sunnier on the On-Days.

COMPRESSOR CYCLING REDUCTION:

IntelliCon ON-DAYS: **723**

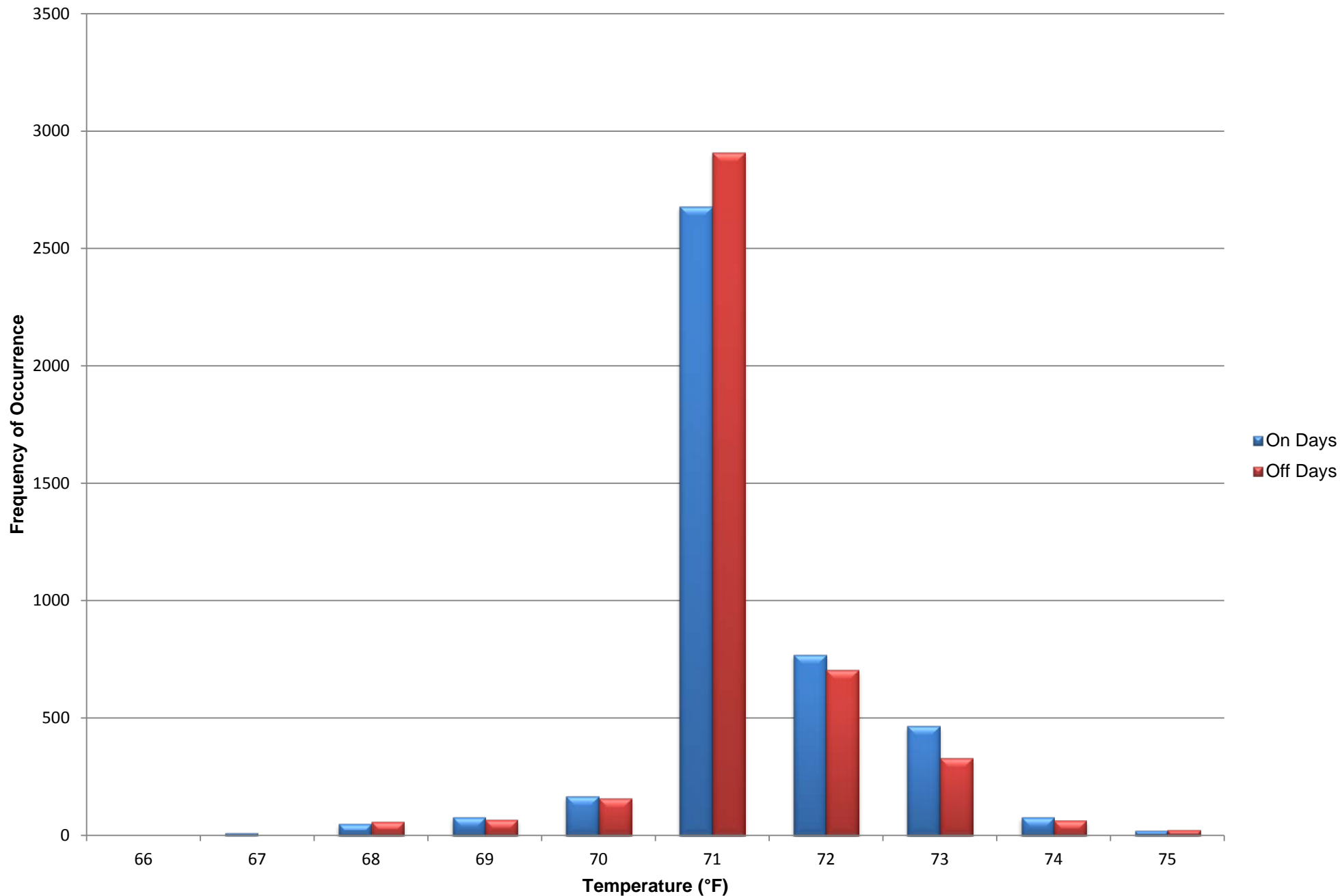
IntelliCon OFF-DAYS: **889**

Cycling was reduced by: **18.7%**

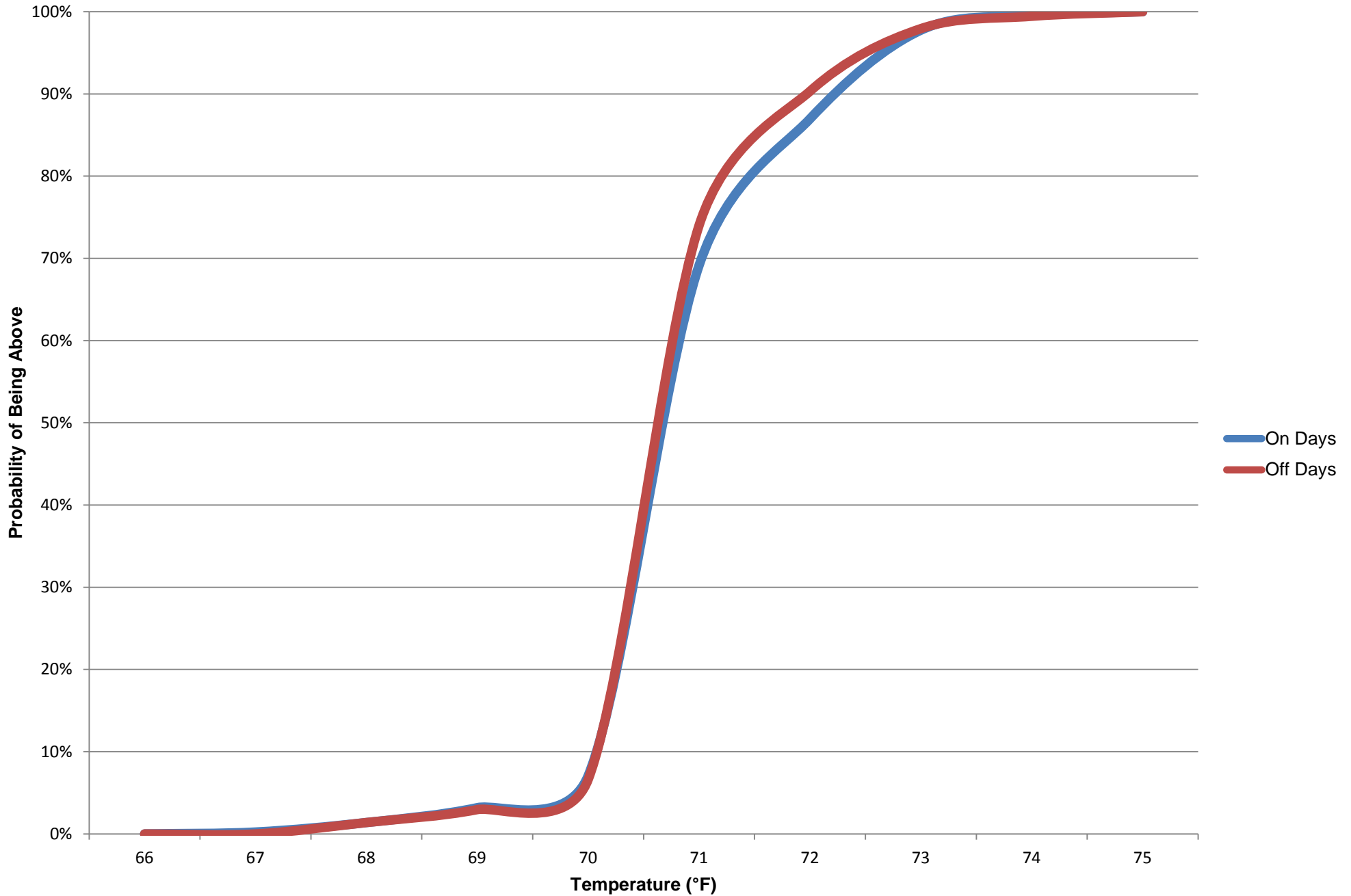
Adj. Savings = 14.23%

COMMENTS:

Disney's Animal Kingdom Lady's Room Temperature Histogram Test Period 03/23/2012 - 04/22/2012



Disney's Animal Kingdom Lady's Room Temperature Probability Test Period 03/23/2012 - 04/22/2012





303 Sunnyside Blvd., Suite 75
 Plainview, NY 11803-1508
 Phone:(516) 676-0777

Test Report

Report No. **12168-3**

Date: **05/12/12**

Customer:

Walt Disney World
 Lake Buena Vista, FL 32830

 Contact: David Pecor

Test Site Location:

Disney's Animal Kingdom
 Animal Hospital

Test Type: HEATING AIR CONDITIONING REFRIGERATION OTHER: _____
 Product Tested: HW LCH LCS CHW CHS AC CAC RU OTHER: _____

Type of Equipment:

Manufacturer: TELEDYNE LAARS
 Model: HH2450IN18LCACJ
 Capacity / SetPt: (2450 MBH) 160°F/10°F Diff, 150°F/10°F Diff
 Fuel Type: Gas
 Application: Hydro-Air Space Heating and Re-Heating
 Area Served: Animal Hospital
 Misc.

Test Start Date: **03/23/12**
 Test End Date: **04/21/12**
 No. of Days in Test: **30**

TOTAL BURNER RUN-TIME: (HEATING & REHEATING MODES)
 in HRS. in MIN.
 IntelliCon ON-DAYS: **156:37:35**
 IntelliCon OFF-DAYS: **170:52:46** RUN-TIME was reduced by: **8.34%**

BURNER USAGE FACTOR
 IntelliCon On-Days: **44%**
 IntelliCon Off-Days: **47%**

HEATING DEGREES / SAMPLE: (HEATING MODE)
 IntelliCon ON-DAYS: **3045** It was **9.98%** Colder on the On-Days.
 IntelliCon OFF-DAYS: **2741**
 Total Degree-Days: **5786**

HEATING USAGE PER HDD
 ON-DAYS: **0:01:30**
 OFF-DAYS: **0:01:52**

REHEAT USAGE PER CDD
 ON-DAYS: **0:00:22**
 OFF-DAYS: **0:00:23**

COOLING DEGREES / SAMPLE: (REHEAT MODE)
 IntelliCon ON-DAYS: **13481**
 IntelliCon OFF-DAYS: **13134** It was **2.64%** Warmer on the On-Days.

Individual Runtimes

	on-day	off-day
Heating Runtime	75:57:55	85:34:04
Cycles	408	556
<hr/>		
Reheating Runtime	80:39:40	85:18:42
Cycles	494	683

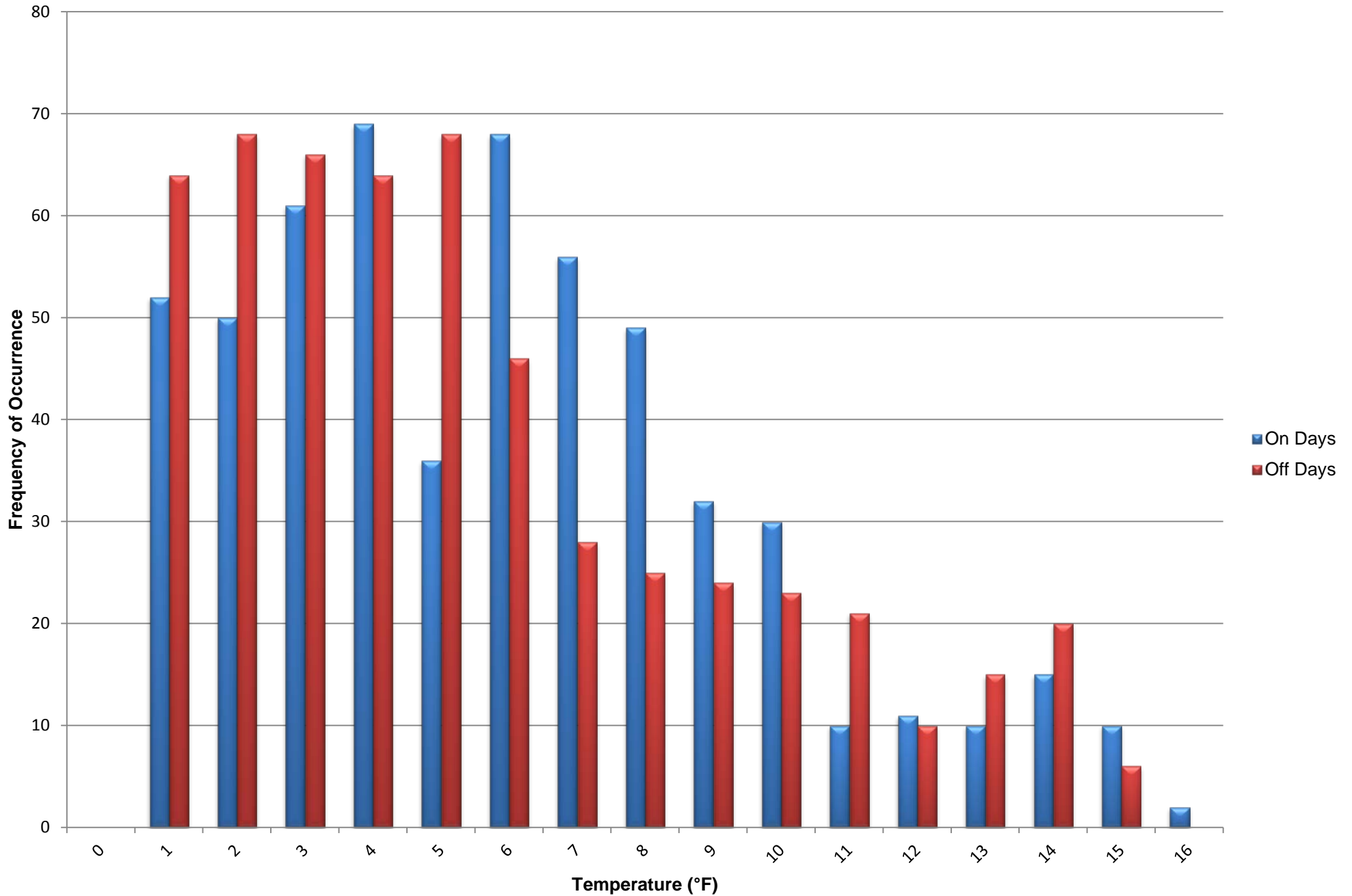
TOTAL BURNER CYCLING REDUCTION: (HEATING & REHEATING MODES)
 IntelliCon ON-DAYS: **902** Heating Cycle Reduction: **26.62%**
 IntelliCon OFF-DAYS: **1239** Re-Heating Cycle Reduction: **27.67%**
TOTAL Cycle Reduction: 27.20%

Adj. Savings = 14.23%

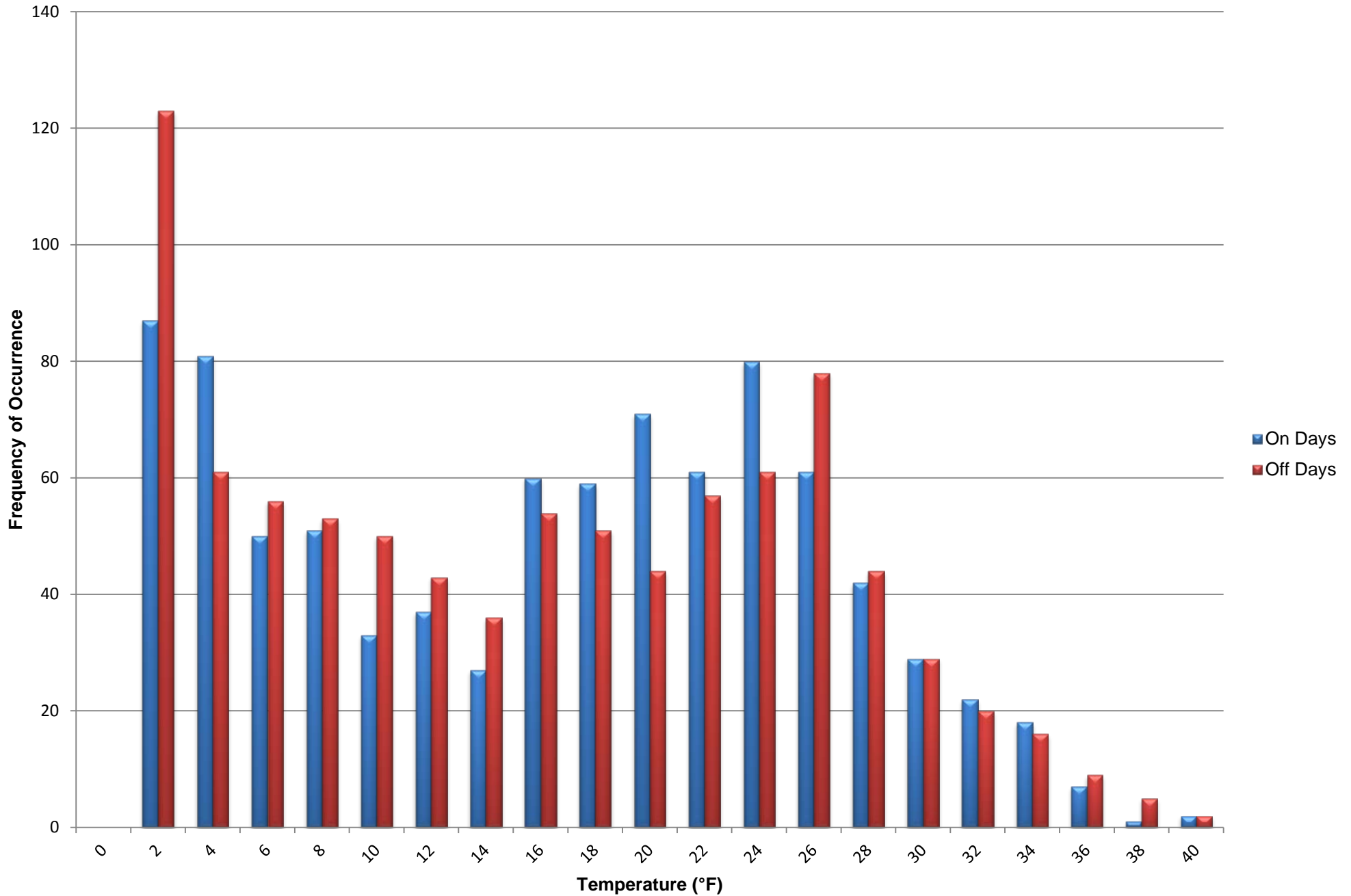
COMMENTS:

The Adjusted Savings takes into account that it was colder on the on-days during the time the boiler was providing space heating only (Heating Mode), and that it was warmer on the on-days when it was functioning in the Re-Heating mode.. The Boiler is a four (4) stage design. It is only used however as a two (2) stage boiler since stages 1 and 3 run in tandem and stages 2 and 4 run in tandem. During this test the second stage (stages 2 and 4) did not run. As such the ROI analysis will be calculated based upon the Boiler's total BTU input divided by 2.

Disney's Animal Kingdom Heating Degrees Histogram Test Period 03/23/2012 - 04/22/2012



Disney's Animal Kingdom Reheating Degrees Histogram Test Period 03/23/2012 - 04/22/2012





303 Sunnyside Blvd., Suite 75
 Plainview, NY 11803-1508
 Phone:(516) 676-0777

Test Report

Report No. **12168-4**

Date: **05/12/12**

Customer:

Walt Disney World
 Lake Buena Vista, FL 32830

 Contact: David Pecor

Test Site Location:

Disney's Animal Kingdom
 Engineering Services Warehouse

Test Type: HEATING AIR CONDITIONING REFRIGERATION OTHER: _____
 Product Tested: HW LCH LCS CHW CHS AC CAC RU OTHER: _____

Type of Equipment:

Manufacturer: Carrier
 Model: 38ARZ008---601--
 Capacity / SetPt: 7.5 Ton, 76°F/79°F
 Fuel Type:
 Application: Cooling
 Area Served: Engineering Services Warehouse (ACU-04)
 Misc. 495vac, 3 phase, 11amps (actual)

Test Start Date: **03/23/12**
 Test End Date: **04/21/12**
 No. of Days in Test: **30**

TOTAL COMPRESSOR RUN-TIME: in HRS. in MIN.
 IntelliCon ON-DAYS: **121:01:46**
 IntelliCon OFF-DAYS: **126:01:12** RUN-TIME was reduced by: **3.96%**

COMPRESSOR USAGE FACTOR:
 IntelliCon On-Days: **34%**
 IntelliCon Off-Days: **35%**

COOLING DEGREES (FOR TEST PERIOD), 15 min. samples
 IntelliCon ON-DAYS: **20578** It was **11.7%** Warmer on the On-Days.
 IntelliCon OFF-DAYS: **18420**
 Total Degree-Days: **38997**

USAGE PER COOLING-DEGREE
 ON-DAYS: **0:00:21**
 OFF-DAYS: **0:00:25**

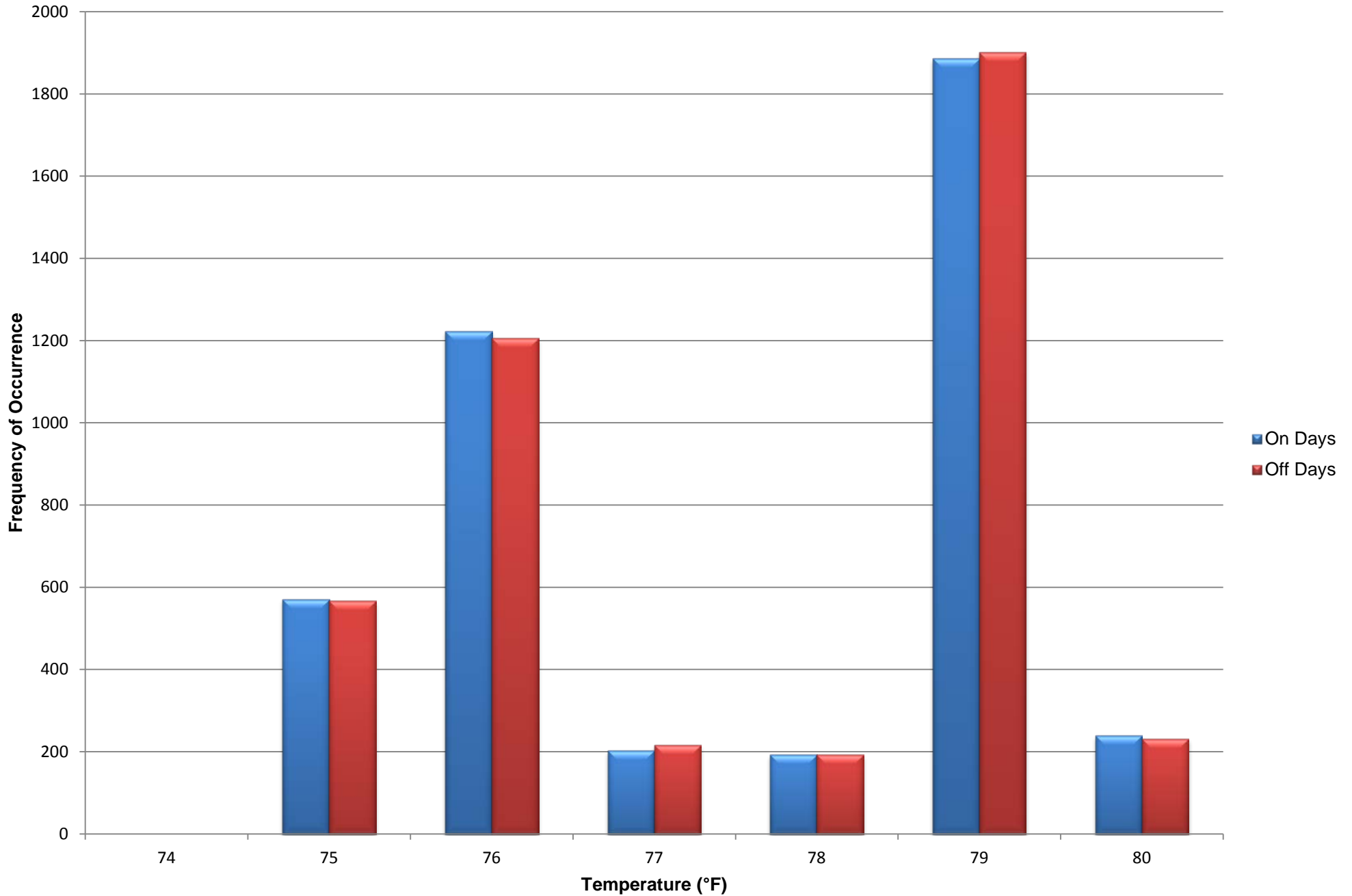
SOLAR LOAD COMPENSATION: (Lumens/Sq. Ft.), 15 min. samples
 IntelliCon ON-DAYS: **2245807**
 IntelliCon OFF-DAYS: **2015909** It was **11.40%** Sunnier on the On-Days.

COMPRESSOR CYCLING REDUCTION:
 IntelliCon ON-DAYS: **428**
 IntelliCon OFF-DAYS: **442** Cycling was reduced by: **3.2%**

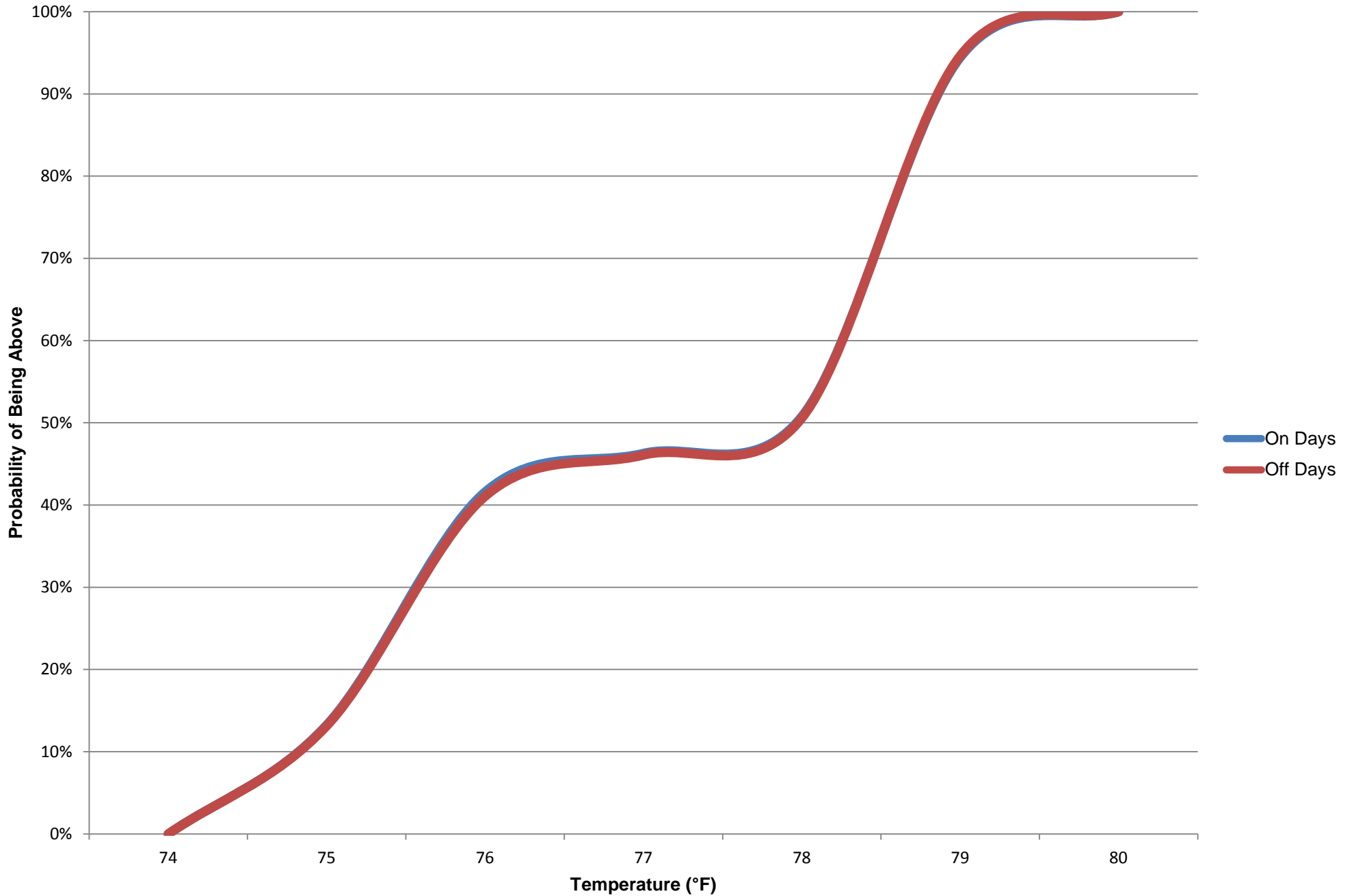
Adj. Savings = 13.98%

COMMENTS: The savings for the Occupied period (6:30 am - 5:00 pm) was 14.5% based upon 95:00:46 hrs. of 'On-Day' Runtime (RT) and 99:42:36 hrs. of 'Off-Day' RT. The RTs were Cooling Degree and Solar Load compensated.
 The savings for the Un-Occupied period (5:00 pm - 6:30 am) was 11.99% based upon 26:01:00 hrs. of 'On-Day' RT and 26:18:36 hrs. of 'Off-Day' RT. The RTs were Cooling Degree and Solar Load compensated.
 The combined Adjusted Savings is 13.98% based upon the Totals of all runtimes.

Disney's Animal Kingdom Warehouse Temperature Histogram Test Period 03/23/2012 - 04/22/2012



Disney's Animal Kingdom Warehouse Temperature Probability Test Period 03/23/2012 - 04/22/2012





Return On Investment Calculator

Date: April, 2012

Project:	Disney Animal Kingdom	
Customer:	Walt Disney World Buena Vista, Florida Contact: David Pecor	Lake

Total Annual Heating Costs:	\$78,458.57
Total Annual Cooling/Refrigeration Costs:	\$4,241.03
	=====
Total Annualized Costs:	\$82,699.60
Estimated Annual Heating Savings:	\$10,362.02
Estimated Annual Cooling Savings:	\$594.19
	=====
Total Estimated Annual Savings:	\$10,956.21
Total Heating Project Costs:	\$0.00
Total Cooling/Refrigeration Project Costs:	\$0.00
	=====
Total Project Costs:	\$0.00
Return On Investment:	0.00

NOTES: Energy cost factors used for financial projections were: \$1.095 / therm for natural gas and \$.08 / KWH for electricity.