

In-Cave Data Logger Project (DLP)
Sponsored by the
Central Connecticut Grotto

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This project is a work in progress, is frequently updated, and done entirely by unpaid volunteers. For more information, updates, and other documents, please contact info@ctcavers.org and put "CCG Data Logger" in the subject line. If you don't get a reply within a week, please call 860-621-2080.

CCG DLP - Access Reports

Contents:

- Settings and Configuration Summary
- Group Summary
- Point and Event Summary
- Analysis of On Group data

Sample of report: rLoggerAnalysisSummary1

Data Logger Analysis

Settings and Configuration Summary

Location, Type of Event Logged, and Logger

Location: A1

Location Details: Entrance Area

Event (what is being sensed - light, sound, etc): Light on and off state

Logger Product (logger manuf and model): U9-002 - HOBO U9 Light On-Off Data Logger

Logger Serial Number: xxxxxxxx

Logging Started:

Logging Ended:

Analysis Options

Minimum Off Time: 59 Minimum On Time: 1

First day to analyze (can be a date before first data point): to do

Last day to analyze (can be a date after last data point): todo

Report Options

Time format (US, MIL, UTC, etc): to do

Adjust for DST: to do

First day of DST: to do

Last day of DST: to do

Terms:

Point: The recording of the state of the sensor at a specific time.

State: The value that the sensor senses, either on or off. The logger never records an in-between state.

Event: The time period between two points when the state of the second is different than the state of the first.

Group: One or more events that, for practical purposes, are assumed to be one event and one continuous state. Like successive events, the state of groups alternate between on and off.

Minimum Off Time: The upper limit of the duration, in seconds, that an Off event is ignored. A value of 59 seconds means that an off event needs to last more than 59 seconds before it would become the start of a new Off group, assuming the current group is an On group.

Minimum On Time: The upper limit of the duration, in seconds, that an On event is ignored. A value of 1 seconds means that only on events lasting more than 1 seconds would become the start of a new On group, assuming the current group is an Off group.

Frequency of state checks: The time between the checking of states by the logger. With the current Hobo U9 loggers, this value is 1 second.

Conditions and Assumptions:

The first point has a state of "off", the last point has a state of "on", intermediate points alternate between "on" and "off", and there are no consecutive points of the same state. Data files are edited, if needed, to meet the start and end states.

Sample of report: rLoggerAnalysisGroupSummary

Data Logger Analysis

Group Summary

Location: A1

Location Details: Entrance Area

Event (what is being sensed - light, sound, etc): Light on and off state

Logger Product (logger manuf and model): U9-002 - HOBO U9 Light On-Off Data Logger

Logging Started:

Logging Ended:

Group Summary

On Time (hours) 13.78 Off Time (hours) 862.03

On Time(days) 0.57 Off Time (days) 35.92

Percent On from On/(On+Off) 1.57 %

On Groups 97
On Time Average (seconds) 511.29
On Time Variance 7,764,145.50
On Time Std Dev 2,786.42

Off Groups 96
Off Time Average (seconds) 32,326.24
Off Time Variance 3,472,799,989.57
Off Time Std Dev 58,930.47

Total Groups 193

Top 10 Longest Groups

On Groups				Off Groups			
Length (minutes)	Length (hours)	On Events in Group	Starting Time	Length (minutes)	Length (hours)	Events in Group	Starting Time
422.02	7.03	40	Sat 5/3/2008 2:26	4,176.30	69.60	3	Sun 5/4/2008 17:52
179.92	3.00	15	Fri 5/30/2008 22:42	3,530.43	58.84	5	Wed 6/4/2008 0:45
51.05	0.85	5	Sat 5/3/2008 11:50	3,448.85	57.48	1	Wed 5/21/2008 13:08
15.95	0.27	11	Mon 5/19/2008 10:35	2,976.48	49.61	1	Wed 5/7/2008 15:31
13.50	0.22	22	Thu 5/15/2008 16:18	2,867.32	47.79	1	Mon 5/19/2008 12:10
9.27	0.15	41	Wed 5/21/2008 12:09	2,835.55	47.26	9	Fri 5/9/2008 17:45
8.10	0.14	1	Sun 6/8/2008 13:58	2,817.90	46.96	7	Mon 5/12/2008 19:59
6.25	0.10	1	Mon 5/12/2008 19:53	2,784.65	46.41	3	Fri 6/6/2008 13:29
5.98	0.10	15	Sun 6/8/2008 12:32	2,432.58	40.54	5	Thu 5/15/2008 18:25
5.80	0.10	40	Mon 5/19/2008 11:40	2,155.73	35.93	5	Wed 5/28/2008 23:34

Sample of report: rLoggerAnalysisEventSummary

Data Logger Analysis

Point and Event Summary

Location: A1

Location Details: Entrance Area

Event (what is being sensed - light, sound, etc): Light on and off state

Logger Product (logger manuf and model): U9-002 - HOBO U9 Light On-Off Data Logger

Logging Started:

Logging Ended:

Point Summary

All points in report, includes points that are part of event durations that do not meet minimum length

On Points	<u>2,083</u>	First On Point	<u>5/3/2008 2:17:30 AM</u>
Off Points	<u>2,083</u>	Last Off Point	<u>6/8/2008 1:58:01 PM</u>
Total Points	<u>4,166</u>	Days From First to Last Point, inclusive	<u>37</u>

Event Summary

All events in report, includes event durations that do not meet minimum length

On Time (hours)	<u>12.70</u>	Off Time (hours)	<u>863.11</u>
Percent On (from on/(on+off)	<u>1.45</u>	%	
On Events	<u>2,083</u>	Off Events	<u>2,083</u>
On Time Average (seconds)	<u>21.96</u>	Off Time Average (seconds)	<u>1,491.69</u>
On Time Variance	<u>352,521.73</u>	Off Time Variance	<u>202,691,928.45</u>
On Time Std Dev	<u>593.74</u>	Off Time Std Dev	<u>14,236.99</u>
On Events not meeting minimum time	<u>1,661</u>	Off Events not meeting minimum time	<u>1,962</u>
Total minutes in these events	<u>27.67</u>	Total minutes in these events	<u>147.18</u>

Top 10 Longest Events

In Starting Time, the time is rounded down to the minute

On Events			Off Events		
Length (minutes)	Length (hours)	Starting Time	Length (minutes)	Length (hours)	Starting Time
411.92	6.87	Sat 5/3/2008 2:27	4,174.75	69.58	Sun 5/4/2008 17:52
177.80	2.96	Fri 5/30/2008 22:44	3,530.12	58.84	Wed 6/4/2008 0:45
49.98	0.83	Sat 5/3/2008 11:50	3,448.85	57.48	Wed 5/21/2008 13:08
13.72	0.23	Mon 5/19/2008 10:37	2,976.48	49.61	Wed 5/7/2008 15:31
8.10	0.14	Sun 6/8/2008 13:58	2,867.32	47.79	Mon 5/19/2008 12:10
6.25	0.10	Mon 5/12/2008 19:53	2,835.02	47.25	Fri 5/9/2008 17:45
5.67	0.09	Thu 5/15/2008 16:22	2,817.43	46.96	Mon 5/12/2008 19:59
3.27	0.05	Sun 6/8/2008 12:33	2,784.52	46.41	Fri 6/6/2008 13:29
2.38	0.04	Wed 5/21/2008 12:04	2,431.77	40.53	Thu 5/15/2008 18:25
2.12	0.04	Sat 5/31/2008 14:04	2,078.45	34.64	Wed 5/28/2008 23:34

Sample of portions of report: rLoggerAnalysisGroupData

Logger On and Off Groups

Group ID	Starting Log ID (log point)	Group State 1 = off	Number of Log Points in Group	Group Starting Date-Time	Group Duration (minutes)	Calculated Group Ending Date-Time
2	205	1	5	Sat 5/3/2008 2:17:35	1.15	Sat 5/3/2008 2:18:44
3	214	0	7	Sat 5/3/2008 2:18:44	7.43	Sat 5/3/2008 2:26:10
4	227	1	40	Sat 5/3/2008 2:26:10	422.02	Sat 5/3/2008 9:28:11
5	306	0	1184	Sat 5/3/2008 9:28:11	142.62	Sat 5/3/2008 11:50:48
6	2673	1	5	Sat 5/3/2008 11:50:48	51.05	Sat 5/3/2008 12:41:51
7	2682	0	7	Sat 5/3/2008 12:41:51	341.67	Sat 5/3/2008 18:23:31
8	2695	1	22	Sat 5/3/2008 18:23:31	3.13	Sat 5/3/2008 18:26:39
9	2738	0	5	Sat 5/3/2008 18:26:39	21.50	Sat 5/3/2008 18:48:09
10	2747	1	5	Sat 5/3/2008 18:48:09	0.78	Sat 5/3/2008 18:48:56
11	2756	0	2	Sat 5/3/2008 18:48:56	1293.35	Sun 5/4/2008 16:22:17
12	2759	1	15	Sun 5/4/2008 16:22:17	1.93	Sun 5/4/2008 16:24:13
13	2788	0	2	Sun 5/4/2008 16:24:13	87.85	Sun 5/4/2008 17:52:04

117	3674	0	3	Wed 5/28/2008 23:34:43	2155.73	Fri 5/30/2008 11:30:27
118	3679	1	2	Fri 5/30/2008 11:30:27	0.70	Fri 5/30/2008 11:31:09
119	3682	0	1	Fri 5/30/2008 11:31:09	68.33	Fri 5/30/2008 12:39:29
120	3683	1	3	Fri 5/30/2008 12:39:29	0.55	Fri 5/30/2008 12:40:02
121	3688	0	3	Fri 5/30/2008 12:40:02	5.78	Fri 5/30/2008 12:45:49
122	3693	1	1	Fri 5/30/2008 12:45:49	0.03	Fri 5/30/2008 12:45:51
123	3694	0	2	Fri 5/30/2008 12:45:51	596.53	Fri 5/30/2008 22:42:23
124	3697	1	15	Fri 5/30/2008 22:42:23	179.92	Sat 5/31/2008 1:42:18
125	3726	0	15	Sat 5/31/2008 1:42:18	714.00	Sat 5/31/2008 13:36:18
126	3755	1	10	Sat 5/31/2008 13:36:18	1.22	Sat 5/31/2008 13:37:31
127	3774	0	10	Sat 5/31/2008 13:37:31	6.80	Sat 5/31/2008 13:44:19
128	3793	1	16	Sat 5/31/2008 13:44:19	5.12	Sat 5/31/2008 13:49:26
129	3824	0	1	Sat 5/31/2008 13:49:26	1.10	Sat 5/31/2008 13:50:32
130	3825	1	17	Sat 5/31/2008 13:50:32	3.62	Sat 5/31/2008 13:54:09
131	3858	0	4	Sat 5/31/2008 13:54:09	1.18	Sat 5/31/2008 13:55:20
132	3865	1	4	Sat 5/31/2008 13:55:20	0.32	Sat 5/31/2008 13:55:39
133	3872	0	2	Sat 5/31/2008 13:55:39	1.85	Sat 5/31/2008 13:57:30
134	3875	1	7	Sat 5/31/2008 13:57:30	1.75	Sat 5/31/2008 13:59:15
135	3888	0	6	Sat 5/31/2008 13:59:15	4.87	Sat 5/31/2008 14:04:07
136	3899	1	18	Sat 5/31/2008 14:04:07	4.60	Sat 5/31/2008 14:08:43
137	3934	0	3	Sat 5/31/2008 14:08:43	102.72	Sat 5/31/2008 15:51:26
138	3939	1	19	Sat 5/31/2008 15:51:26	4.53	Sat 5/31/2008 15:55:58
139	3976	0	2	Sat 5/31/2008 15:55:58	1.95	Sat 5/31/2008 15:57:55
140	3979	1	1	Sat 5/31/2008 15:57:55	0.05	Sat 5/31/2008 15:57:58
141	3980	0	10	Sat 5/31/2008 15:57:58	1115.30	Sun 6/1/2008 10:33:16