

NILM Accuracy Report

Target appliance

- refrigerator

Target period

- 2017-04-01 ~ 2017-12-31

Target home serial numbers

- F30200C8, F30200C9, F30200CA, F30200CB, F30200CC, F30200CD, F30200CE, F30200CF, F30200D0, F30200D1

Accuracy tables by month

[2017-04]

Accuracy summary

ID	Min.	X1st.Qu.	Median	Mean	X3rd.Qu.	Max.
usageRatio	0.00	0.75	1.00	0.75	1.00	1.00
accuracy	0.73	0.77	0.90	0.88	0.98	1.00
recall	0.73	0.89	0.96	0.92	0.98	1.00
precision	0.72	0.94	1.00	0.94	1.00	1.00
F1	0.82	0.85	0.94	0.92	0.99	1.00
MR	0.54	0.62	0.64	0.66	0.69	0.84

Accuracy table

serialNumber	applianceName	TP	FN	FP	TN	nilmUsage	plugUsage	usageRatio	accuracy	recall	precision
F30200C8	refrigerator	1825	278	160	581	40795.55	41832	1	0.85	0.87	
F30200CA	refrigerator	2737	107	0	0	56321.30	61829	1	0.96	0.96	
F30200CB	refrigerator	2065	772	4	3	20635.29	25664	1	0.73	0.73	
F30200CC	refrigerator	1942	37	1	0	13860.70	14930	1	0.98	0.98	
F30200CD	refrigerator	1438	66	550	306	18661.99	14072	1	0.74	0.96	
F30200CE	refrigerator	0	0	0	0	0.00	0	0	NaN	NaN	
F30200CF	refrigerator	0	0	0	0	0.00	0	0	NaN	NaN	
F30200D0	refrigerator	2836	7	1	0	20741.55	22438	1	1.00	1.00	

[2017-05]

Accuracy summary

ID	Min.	X1st.Qu.	Median	Mean	X3rd.Qu.	Max.
usageRatio	0.00	1.00	1.00	0.87	1.00	1.00
accuracy	0.88	0.91	0.97	0.95	1.00	1.00
recall	0.90	0.97	1.00	0.98	1.00	1.00
precision	0.89	0.94	1.00	0.97	1.00	1.00
F1	0.92	0.95	0.98	0.97	1.00	1.00
MR	0.46	0.68	0.73	0.71	0.78	0.85

Accuracy table

serialNumber	applianceName	TP	FN	FP	TN	nilmUsage	plugUsage	usageRatio	accuracy	recall	precision
F30200C8	refrigerator	1976	231	97	636	41772.29	43585	1	0.89	0.90	0.90
F30200CA	refrigerator	2841	90	3	6	59096.18	67198	1	0.97	0.97	0.97
F30200CB	refrigerator	2930	10	0	0	28562.30	35317	1	1.00	1.00	1.00
F30200CC	refrigerator	2940	0	0	0	20857.62	24199	1	1.00	1.00	1.00
F30200CD	refrigerator	2506	5	180	249	24988.95	23912	1	0.94	1.00	0.94
F30200CE	refrigerator	1595	38	188	3	29934.63	14772	1	0.88	0.98	0.88
F30200CF	refrigerator	0	0	0	0	0.00	0	0	NaN	NaN	NaN
F30200D0	refrigerator	2934	5	1	0	22550.44	33098	1	1.00	1.00	1.00

[2017-06]

Accuracy summary

ID	Min.	X1st.Qu.	Median	Mean	X3rd.Qu.	Max.
usageRatio	0.00	1.00	1.00	0.87	1.00	1.00
accuracy	0.89	0.93	0.97	0.96	0.99	1.00
recall	0.89	0.98	0.99	0.98	1.00	1.00
precision	0.91	0.95	1.00	0.97	1.00	1.00
F1	0.92	0.96	0.99	0.97	0.99	1.00
MR	0.47	0.67	0.72	0.71	0.78	0.85

Accuracy table

serialNumber	applianceName	TP	FN	FP	TN	nilmUsage	plugUsage	usageRatio	accuracy	recall	precision
F30200C8	refrigerator	1906	225	85	531	41025.25	43168	1.00	0.89	0.89	0.89
F30200CA	refrigerator	2664	75	2	6	56648.03	65709	1.00	0.97	0.97	0.97
F30200CB	refrigerator	2744	3	0	0	26348.96	35387	0.99	1.00	1.00	0.99
F30200CC	refrigerator	2643	52	0	0	18905.05	24521	1.00	0.98	0.98	0.98
F30200CD	refrigerator	2537	15	147	48	25558.67	25106	1.00	0.94	0.99	0.94
F30200CE	refrigerator	2501	0	246	0	46222.14	23026	1.00	0.91	1.00	0.91
F30200CF	refrigerator	0	0	0	0	0.00	0	0.00	NaN	NaN	NaN
F30200D0	refrigerator	2744	3	0	0	21680.75	33256	1.00	1.00	1.00	1.00

[2017-07]

Accuracy summary

ID	Min.	X1st.Qu.	Median	Mean	X3rd.Qu.	Max.
usageRatio	0.00	1.00	1.00	0.87	1.00	1.00
accuracy	0.81	0.97	0.98	0.96	1.00	1.00
recall	0.82	0.97	1.00	0.97	1.00	1.00
precision	0.94	0.99	1.00	0.99	1.00	1.00
F1	0.88	0.98	0.99	0.98	1.00	1.00
MR	0.49	0.59	0.64	0.65	0.73	0.78

Accuracy table

serialNumber	applianceName	TP	FN	FP	TN	nilmUsage	plugUsage	usageRatio	accuracy	recall	precision
F30200C8	refrigerator	1826	401	112	368	39580.91	48639	1	0.81	0.82	0.96
F30200CA	refrigerator	2688	9	7	3	63333.26	83752	1	0.99	1.00	1.00
F30200CB	refrigerator	2594	113	0	0	26189.56	43479	1	0.96	0.96	0.96
F30200CC	refrigerator	2534	3	7	0	18137.37	24440	1	1.00	1.00	1.00
F30200CD	refrigerator	2658	30	18	1	27925.06	29394	1	0.98	0.99	0.99
F30200CE	refrigerator	2643	2	62	0	30793.87	28451	1	0.98	1.00	1.00
F30200CF	refrigerator	0	0	0	0	0.00	0	0	NaN	NaN	NaN
F30200D0	refrigerator	2699	8	0	0	20126.27	40552	1	1.00	1.00	1.00

[2017-08]

Accuracy summary

ID	Min.	X1st.Qu.	Median	Mean	X3rd.Qu.	Max.
usageRatio	1.00	1.00	1.00	1.00	1.00	1.00
accuracy	0.81	0.94	0.98	0.95	1.00	1.00
recall	0.83	0.97	1.00	0.97	1.00	1.00
precision	0.94	0.96	1.00	0.98	1.00	1.00
F1	0.88	0.97	0.99	0.97	1.00	1.00
MR	0.43	0.56	0.65	0.65	0.75	0.84

Accuracy table

serialNumber	applianceName	TP	FN	FP	TN	nilmUsage	plugUsage	usageRatio	accuracy	recall	precision
F30200C8	refrigerator	1801	377	124	380	40009.46	46434	1	0.81	0.83	0.96
F30200CA	refrigerator	2637	135	11	16	60612.46	78859	1	0.95	0.95	0.95
F30200CB	refrigerator	2770	5	7	0	59754.65	33834	1	1.00	1.00	1.00
F30200CD	refrigerator	2700	20	45	3	28654.60	29378	1	0.98	0.99	0.99
F30200CE	refrigerator	2625	5	176	0	60305.28	27156	1	0.94	1.00	1.00
F30200CF	refrigerator	2706	5	5	0	37494.52	43452	1	1.00	1.00	1.00
F30200D0	refrigerator	2751	5	5	0	50796.76	40332	1	1.00	1.00	1.00

[2017-09]

Accuracy summary

ID	Min.	X1st.Qu.	Median	Mean	X3rd.Qu.	Max.
usageRatio	1.00	1.00	1.00	1.00	1.00	1.00
accuracy	0.84	0.92	0.98	0.95	1.00	1.00
recall	0.86	0.96	0.99	0.97	1.00	1.00
precision	0.91	0.95	1.00	0.97	1.00	1.00
F1	0.89	0.96	0.99	0.97	1.00	1.00
MR	0.37	0.54	0.67	0.63	0.77	0.78

Accuracy table

serialNumber	applianceName	TP	FN	FP	TN	nilmUsage	plugUsage	usageRatio	accuracy	recall	precision
F30200C8	refrigerator	832	138	75	255	19017.56	20215	1	0.84	0.86	0.81
F30200CA	refrigerator	1272	21	3	4	28463.36	34742	1	0.98	0.98	0.96
F30200CB	refrigerator	1297	2	1	0	29543.49	16658	1	1.00	1.00	1.00
F30200CD	refrigerator	1017	59	19	12	10710.05	11236	1	0.93	0.95	0.90
F30200CE	refrigerator	958	5	96	1	25247.95	9621	1	0.90	0.99	0.96
F30200CF	refrigerator	1296	3	1	0	18187.85	19402	1	1.00	1.00	1.00
F30200D0	refrigerator	1295	3	2	0	23801.76	17002	1	1.00	1.00	1.00

[2017-10]

Accuracy summary

ID	Min.	X1st.Qu.	Median	Mean	X3rd.Qu.	Max.
usageRatio	1.00	1.00	1.00	1.00	1.00	1.00
accuracy	0.76	0.90	0.96	0.93	0.99	1.00
recall	0.81	0.97	1.00	0.96	1.00	1.00
precision	0.86	0.90	0.99	0.95	1.00	1.00
F1	0.84	0.95	0.98	0.96	0.99	1.00
MR	0.00	0.38	0.48	0.53	0.80	0.88

Accuracy table

serialNumber	applianceName	TP	FN	FP	TN	nilmUsage	plugUsage	usageRatio	accuracy	recall	precision
F30200C8	refrigerator	1795	409	284	452	43603.43	4994004065970604	1	0.76	0.81	0.81
F30200CA	refrigerator	2627	118	1	2	53978.62	61789	1	0.96	0.96	0.96
F30200CB	refrigerator	2936	4	0	0	66242.02	32704	1	1.00	1.00	1.00
F30200CD	refrigerator	2451	11	168	303	23922.94	23297	1	0.94	1.00	1.00
F30200CE	refrigerator	2537	0	403	0	61687.08	20652	1	0.86	1.00	1.00
F30200CF	refrigerator	2940	0	0	0	40861.62	38827	1	1.00	1.00	1.00
F30200D0	refrigerator	2791	51	19	1	45861.65	29161	1	0.98	0.98	0.98

[2017-11]

Accuracy summary

ID	Min.	X1st.Qu.	Median	Mean	X3rd.Qu.	Max.
usageRatio	0.98	1.00	1.00	1.00	1.00	1.00
accuracy	0.74	0.80	0.92	0.87	0.93	1.00
recall	0.80	0.92	0.93	0.94	1.00	1.00
precision	0.74	0.83	1.00	0.92	1.00	1.00
F1	0.84	0.87	0.96	0.92	0.96	1.00
MR	0.30	0.37	0.62	0.55	0.72	0.78

Accuracy table

serialNumber	applianceName	TP	FN	FP	TN	nilmUsage	plugUsage	usageRatio	accuracy	recall	precision
F30200C8	refrigerator	1493	381	202	570	34936.84	36482	1.00	0.78	0.80	0.80
F30200CA	refrigerator	2463	180	1	2	51414.61	60169	1.00	0.93	0.93	0.93
F30200CB	refrigerator	2382	212	3	0	51860.96	22451	0.98	0.92	0.92	0.92
F30200CD	refrigerator	1726	9	472	343	18920.15	15094	1.00	0.81	0.99	0.99
F30200CE	refrigerator	1967	5	674	0	51604.30	15697	1.00	0.74	1.00	1.00
F30200CF	refrigerator	2641	5	0	0	37394.68	31156	1.00	1.00	1.00	1.00
F30200D0	refrigerator	2445	199	2	0	41991.87	21044	1.00	0.92	0.92	0.92

[2017-12]

Accuracy summary

ID	Min.	X1st.Qu.	Median	Mean	X3rd.Qu.	Max.
usageRatio	0.99	0.99	1.00	1.00	1.00	1.00
accuracy	0.53	0.75	0.95	0.85	0.98	1.00
recall	0.83	0.94	0.96	0.95	1.00	1.00
precision	0.48	0.79	1.00	0.87	1.00	1.00
F1	0.64	0.84	0.97	0.89	0.99	1.00
MR	0.25	0.32	0.38	0.49	0.67	0.81

Accuracy table

serialNumber	applianceName	TP	FN	FP	TN	nilmUsage	plugUsage	usageRatio	accuracy	recall	precision
F30200C8	refrigerator	1540	322	137	614	33709.21	35960	1.00	0.82	0.83	0.83
F30200CA	refrigerator	2477	135	0	1	51854.78	58916	1.00	0.95	0.95	0.95
F30200CB	refrigerator	2510	96	7	0	52690.92	19444	0.99	0.96	0.96	0.96
F30200CD	refrigerator	925	64	985	257	16974.61	8157	1.00	0.53	0.94	0.94
F30200CE	refrigerator	728	0	361	0	21898.58	5570	0.99	0.67	1.00	1.00
F30200CF	refrigerator	1245	0	0	0	17500.36	13786	1.00	1.00	1.00	1.00
F30200D0	refrigerator	2608	3	2	0	45370.04	18182	1.00	1.00	1.00	1.00