

## About DATA

The data is too big to upload.

Go to this website: <https://pureportal.strath.ac.uk/en/datasets/refit-electrical-load-measurements-cleaned>

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# REFIT: Electrical Load Measurements (Cleaned)

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Electronic And Electrical Engineering

Dataset

Overview

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## Description

The REFIT Electrical Load Measurements dataset includes cleaned electrical consumption data in Watts for 20 households at aggregate and appliance level, timestamped and sampled at 8 second intervals. This dataset is intended to be used for research into energy conservation and advanced energy services, ranging from non-intrusive appliance load monitoring, demand response measures, tailored energy and retrofit advice, appliance usage analysis, consumption and time-use statistics and smart home/building automation.

When using this dataset please cite the following paper in Scientific Data, <http://dx.doi.org/10.1038/sdata.2016.122>

This version of the dataset has been cleaned in the following ways:

- Timestamp duplicates have been merged.
- IAM (Individual Appliance Monitor) readings set to 0 Watts if above 4000 Watts (above the rated limit of the sensor).
- Each IAM has been processed to ensure that it only shows readings for one appliance, where possible.
- The ReadMe file has been updated with information about monitored appliance changes.
- NaN values have been forward filled (< 2 minute gaps) or zeroed (> 2 minute gaps).

This work has been carried out as part of the REFIT project ('Personalised Retrofit Decision Support Tools for UK Homes using Smart Home Technology', Grant Reference EP/K002368/1/1). REFIT is a consortium of three universities - Loughborough, Strathclyde and East Anglia - and ten industry stakeholders funded by the Engineering and Physical Sciences Research Council (EPSRC) under the Transforming Energy Demand in Buildings through Digital Innovation (BuildTEDDI) funding programme.

A raw data version of this dataset (deposited 23/09/2015) is also available from the Data Sets link below.

Date made available	16 Jun 2016
Publisher	University of Strathclyde
Temporal coverage	Oct 2013 - Jun 2015
Date of data production	16 Jun 2016
Geographical coverage	United Kingdom, Loughborough

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## DOI

[10.15129/9ab14b0e-19ac-4279-938f-27f643078cec](https://doi.org/10.15129/9ab14b0e-19ac-4279-938f-27f643078cec)

## Access Dataset

REFIT\_Readme.txt

File: text/plain, 9.27 KB

Type: Text

Licence: CC BY 4.0

Processed\_Data\_CSV.7z

File: application/octet-stream, 489 MB

Type: Dataset

Licence: CC BY 4.0

CLEAN\_READ\_ME\_081116.txt

File: text/plain, 11.7 KB

Type: Text

Licence: CC BY 4.0

CLEAN\_REFIT\_081116.7z

File: application/octet-stream, 490 MB

Type: Dataset

Licence: CC BY 4.0

MetaData\_Tables.xlsx

File: application/vnd.openxmlformats-officedocument.spreadsheetml.sheet, 28.5 KB

Type: Other

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Click the .txt file to read the introduction of data.

Download the .7z file. It is the cleaned dataset in .csv tables.

The dataset contains data from 21 houses. Each house can be viewed as an independent load unit. For example, let us consider house 1 data as shown below:

AutoSave Off House\_1.csv Search Xiaoge Huang

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POSSIBLE DATA LOSS Some features might be lost if you save this workbook in the comma-delimited (.csv) format. To preserve these features, save it in an Excel file format. Don't show again Save As...

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Time	Unix	Aggregate	Appliance	Appliance	Appliance	Appliance	Appliance	Appliance	Appliance	Appliance	Appliance	Appliance	Appliance	Appliance
2	10/9/2013 13:06	1381323977	523	74	0	69	0	0	0	0	0	0	1		
3	10/9/2013 13:06	1381323991	526	75	0	69	0	0	0	0	0	0	1		
4	10/9/2013 13:06	1381324006	540	74	0	68	0	0	0	0	0	0	1		
5	10/9/2013 13:07	1381324021	532	74	0	68	0	0	0	0	0	0	1		
6	10/9/2013 13:07	1381324035	540	74	0	69	0	0	0	0	0	0	1		
7	10/9/2013 13:07	1381324038	539	74	0	69	0	0	0	0	0	0	1		
8	10/9/2013 13:07	1381324050	537	74	0	69	0	0	0	0	0	0	1		
9	10/9/2013 13:07	1381324052	537	74	0	69	0	0	0	0	0	0	1		
10	10/9/2013 13:07	1381324064	548	74	0	69	0	0	0	0	0	0	1		
11	10/9/2013 13:07	1381324067	557	73	0	68	0	0	0	0	0	0	1		
12	10/9/2013 13:07	1381324079	561	74	0	69	0	0	0	0	0	0	1		
13	10/9/2013 13:08	1381324081	561	74	0	69	0	0	0	0	0	0	1		
14	10/9/2013 13:08	1381324093	558	73	0	69	0	0	0	0	0	0	1		
15	10/9/2013 13:08	1381324096	558	73	0	69	0	0	0	0	0	0	1		
16	10/9/2013 13:08	1381324097	569	73	0	69	0	0	0	0	0	0	1		
17	10/9/2013 13:08	1381324107	561	73	0	69	0	0	0	0	0	0	1		
18	10/9/2013 13:08	1381324110	549	73	0	37	0	0	0	0	0	0	1		
19	10/9/2013 13:08	1381324112	549	73	0	37	0	0	0	0	0	0	1		
20	10/9/2013 13:08	1381324125	628	73	0	0	0	0	0	0	0	0	1		
21	10/9/2013 13:08	1381324126	628	73	0	0	0	0	0	0	0	0	1		
22	10/9/2013 13:08	1381324139	619	73	0	0	0	0	0	0	0	0	1		
23	10/9/2013 13:09	1381324141	617	73	0	0	0	0	0	0	0	0	1		
24	10/9/2013 13:09	1381324154	630	73	0	0	0	0	0	0	0	0	1		
25	10/9/2013 13:09	1381324155	630	73	0	0	0	0	0	0	0	0	1		
26	10/9/2013 13:09	1381324157	630	73	0	0	0	0	0	0	0	0	1		
27	10/9/2013 13:09	1381324168	637	73	0	0	0	0	0	0	0	0	1		
28	10/9/2013 13:09	1381324170	637	73	0	0	0	0	0	0	0	0	1		
29	10/9/2013 13:09	1381324172	637	72	0	0	0	0	0	0	0	0	1		
30	10/9/2013 13:09	1381324184	653	73	0	0	0	0	0	0	0	0	1		
31	10/9/2013 13:09	1381324187	653	73	0	0	0	0	0	0	0	0	1		
32	10/9/2013 13:09	1381324199	659	72	0	0	0	0	0	0	0	0	1		
33	10/9/2013 13:10	1381324201	602	72	0	0	0	0	0	0	0	0	1		

House\_1

A straightforward task is exploring how the values of the 9-“appliance” can be determined with a given value of “aggregate.”

This task is currently general, as the paper's narrative, technical roadmap, and performance evaluation metrics can be tailored to make sense from perspectives either in computer science or power engineering.

PS:

1. The unit of those values is W.
2. The “aggregate” value is from the electrical meter from the whole house, which means the “aggregate” value is not necessarily equal to the sum of 9-“appliance” value.