Results

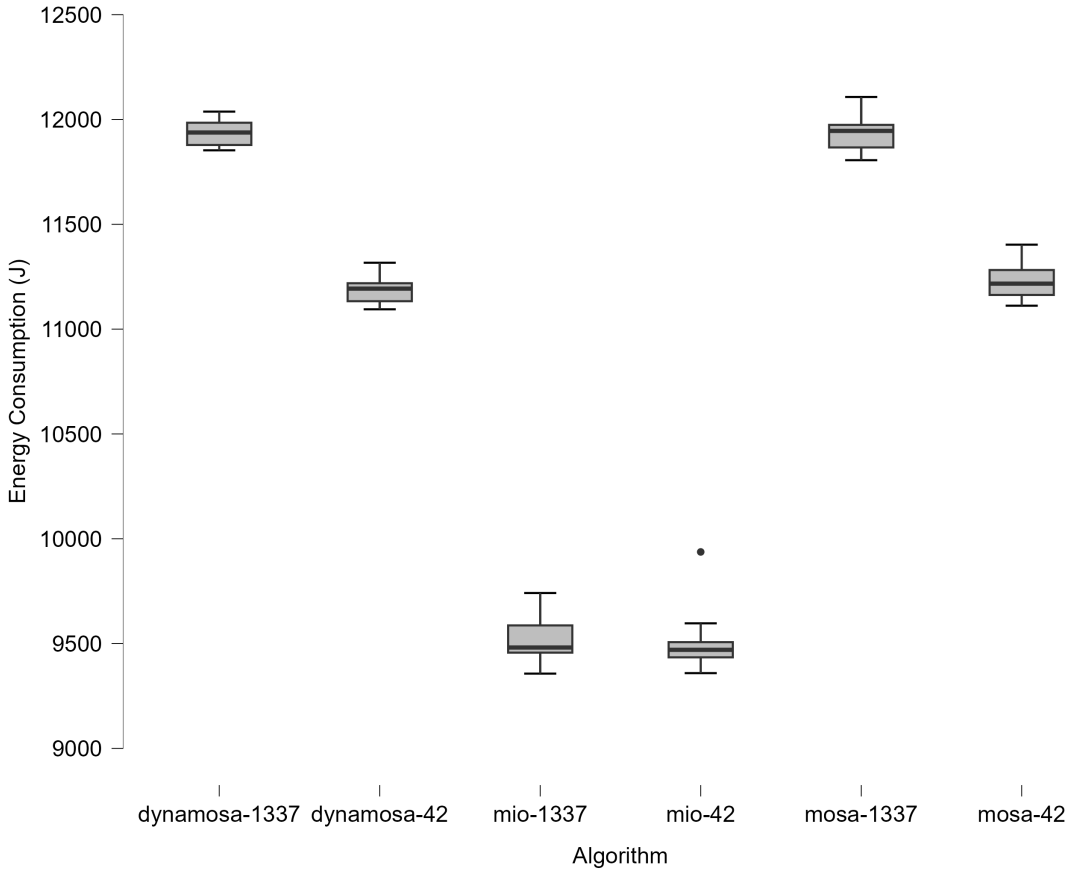
Descriptive Statistics

Descriptive Statistics

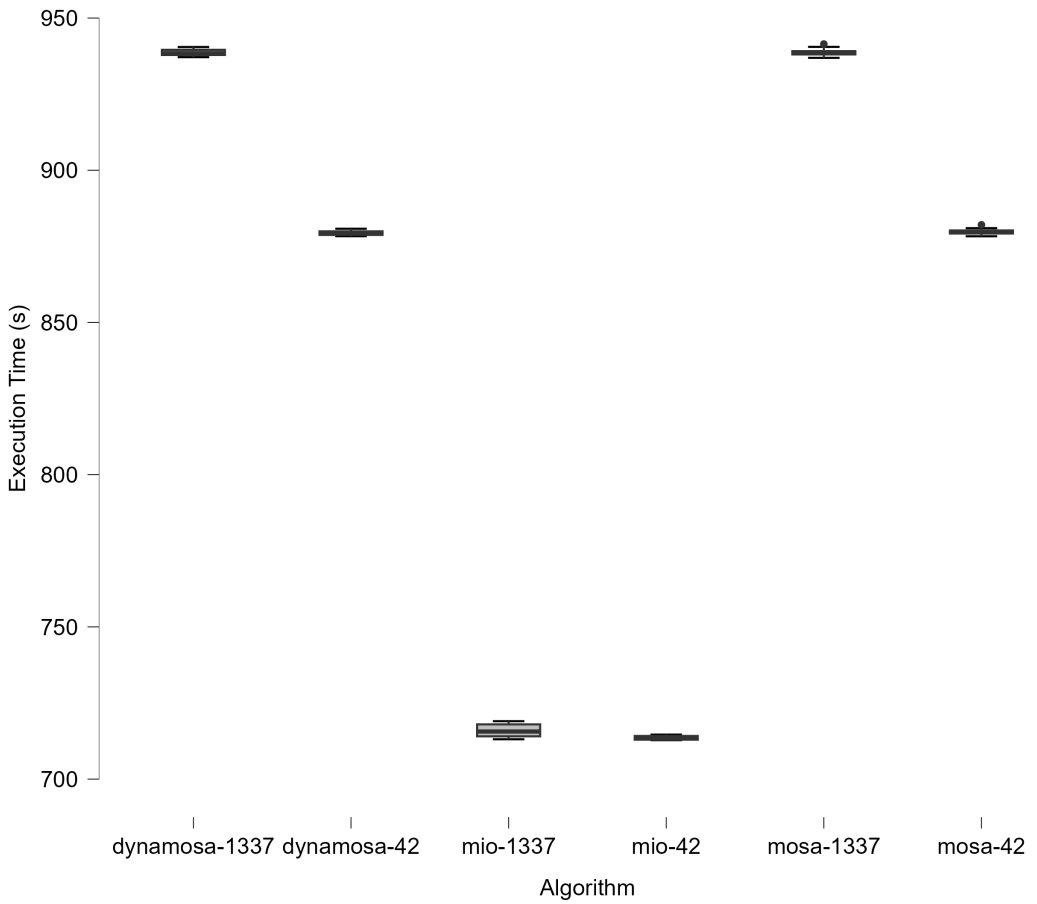
		Valid	Mean	Std. Deviation	Variance	Range	Minimum	Maximum
Energy Consumption (J)	dynamosa-1337	14	11937.350	65.771	4325.836	184.614	11853.011	12037.625
Energy Consumption (J)	dynamosa-42	14	11186.656	67.801	4596.932	222.104	11094.595	11316.699
Energy Consumption (J)	mio-1337	14	9522.295	113.908	12975.085	384.453	9356.721	9741.174
Energy Consumption (J)	mio-42	14	9502.096	141.545	20035.043	578.165	9359.007	9937.172
Energy Consumption (J)	mosa-1337	14	11927.855	79.762	6362.023	301.540	11805.906	12107.446
Energy Consumption (J)	mosa-42	14	11234.014	97.018	9412.439	291.154	11111.766	11402.919
Execution Time (s)	dynamosa-1337	14	938.705	1.013	1.027	3.333	937.154	940.487
Execution Time (s)	dynamosa-42	14	879.371	0.757	0.573	2.458	878.336	880.794
Execution Time (s)	mio-1337	14	715.868	2.115	4.473	5.943	713.084	719.027
Execution Time (s)	mio-42	14	713.598	0.689	0.475	1.835	712.785	714.619
Execution Time (s)	mosa-1337	14	938.741	1.171	1.372	4.548	936.927	941.475
Execution Time (s)	mosa-42	14	879.840	0.982	0.963	3.781	878.313	882.095
watts	dynamosa-1337	14	12.717	0.062	0.004	0.185	12.642	12.827
watts	dynamosa-42	14	12.721	0.074	0.005	0.237	12.630	12.867
watts	mio-1337	14	13.302	0.158	0.025	0.527	13.121	13.648
watts	mio-42	14	13.316	0.195	0.038	0.786	13.124	13.910
watts	mosa-1337	14	12.706	0.079	0.006	0.294	12.601	12.894
watts	mosa-42	14	12.768	0.105	0.011	0.311	12.636	12.948

Boxplots

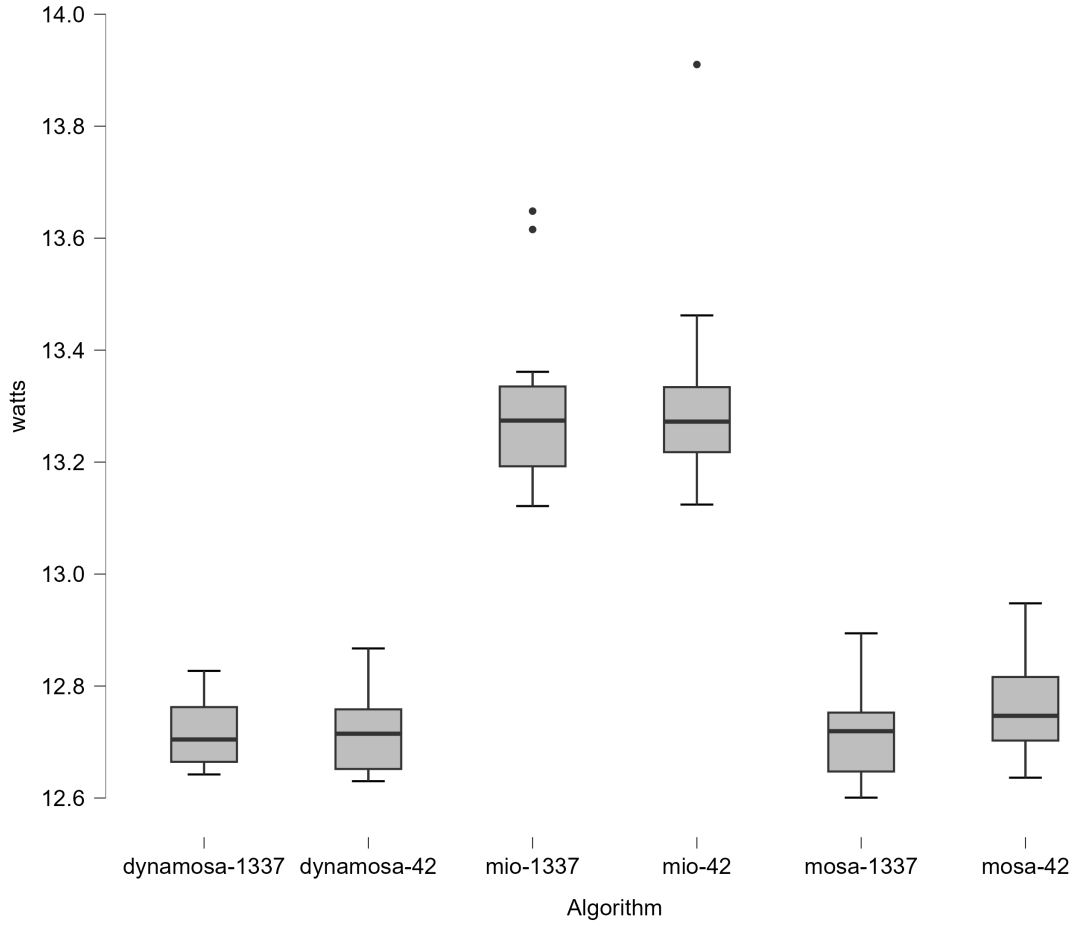
Energy Consumption (J)



Execution Time (s)



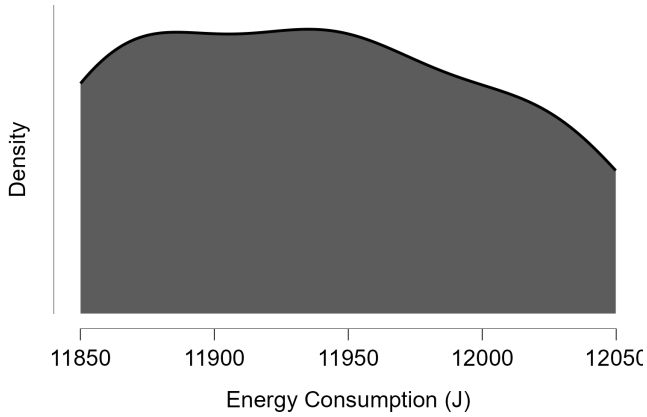
watts


14.0
13.8
13.6
13.4
13.2
13.0
12.8
12.6
watts
dynamosa-1337
dynamosa-42
mio-1337
mio-42
mosa-1337
mosa-42
Algorithm

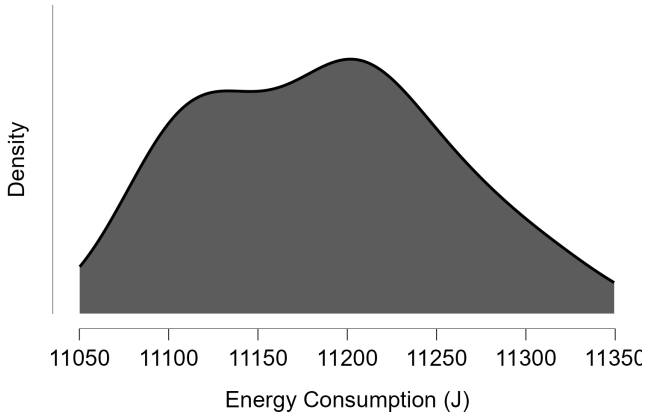
Density Plots

Energy Consumption (J)

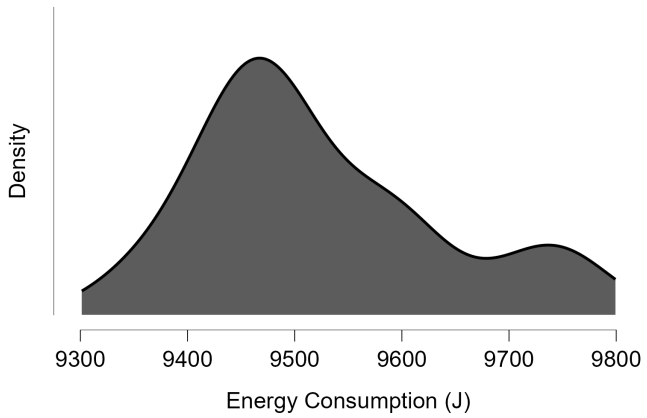
dynamosa-1337



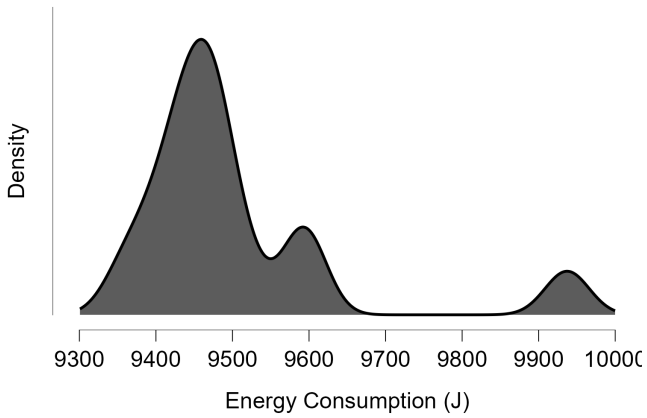
dynamosa-42



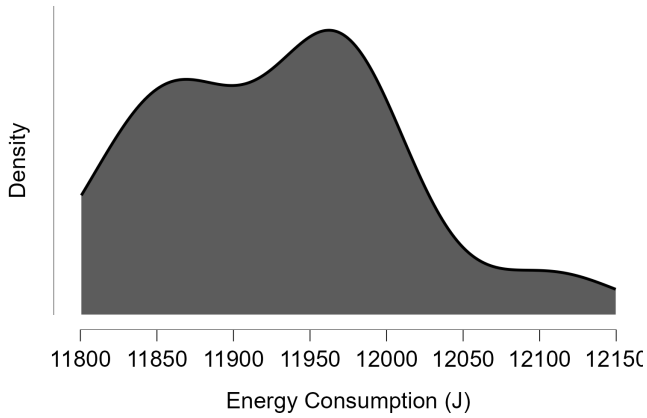
mio-1337



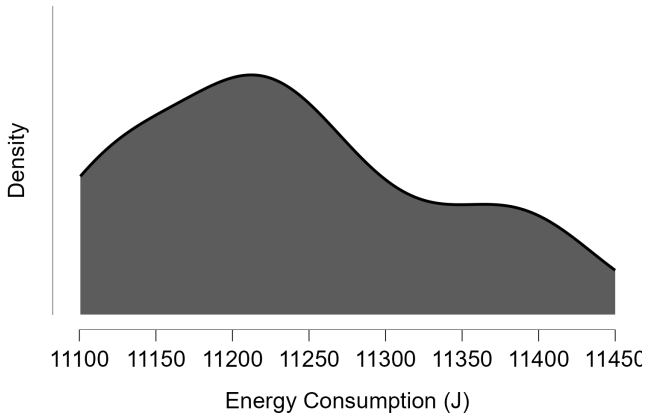
mio-42



mosa-1337

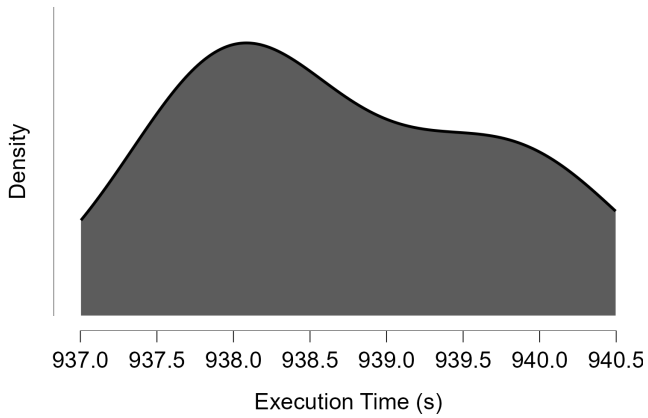


mosa-42

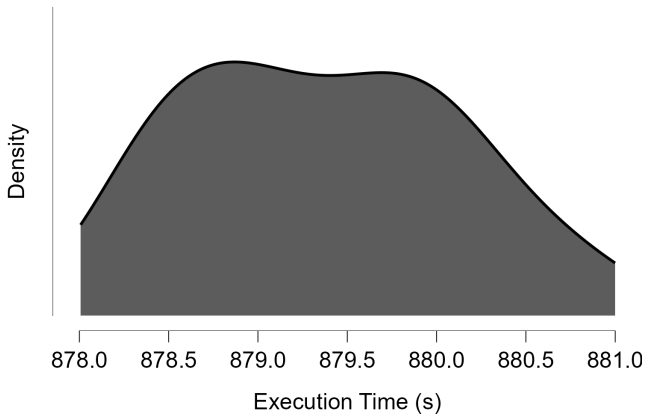


Execution Time (s)

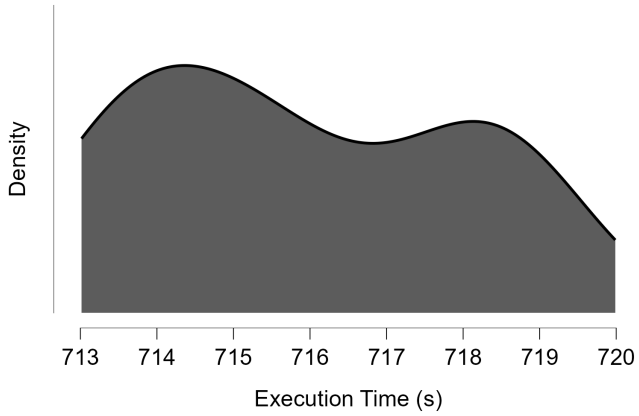
dynamosa-1337



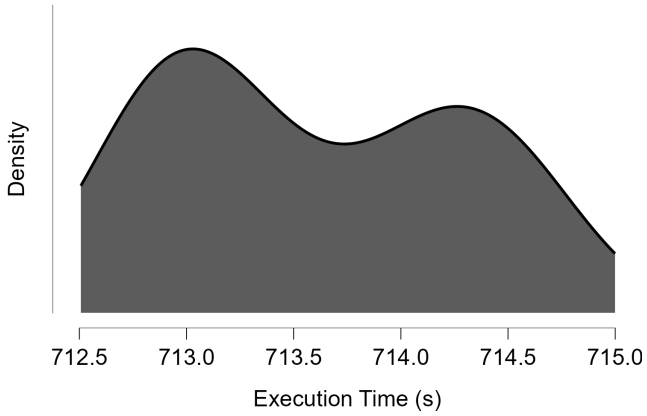
dynamosa-42



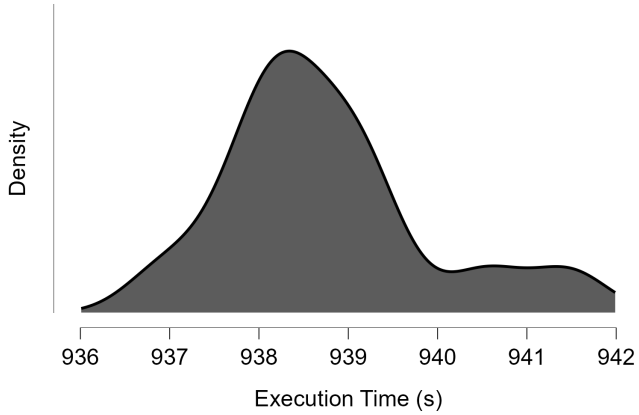
mio-1337



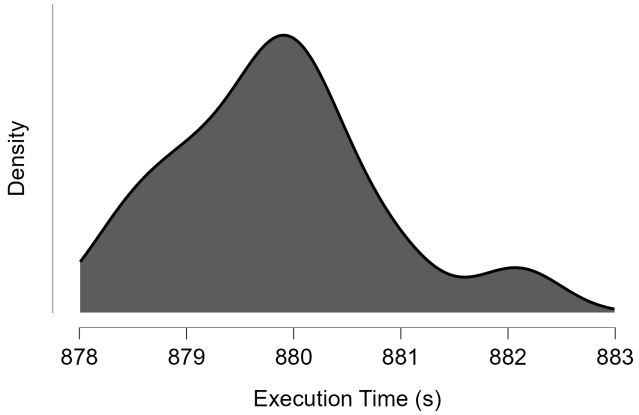
mio-42



mosa-1337

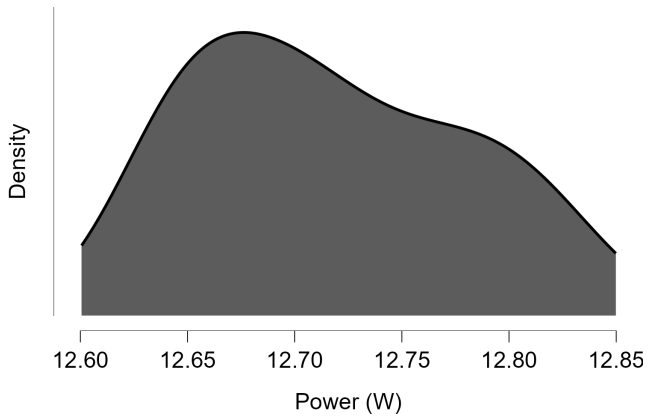


mosa-42

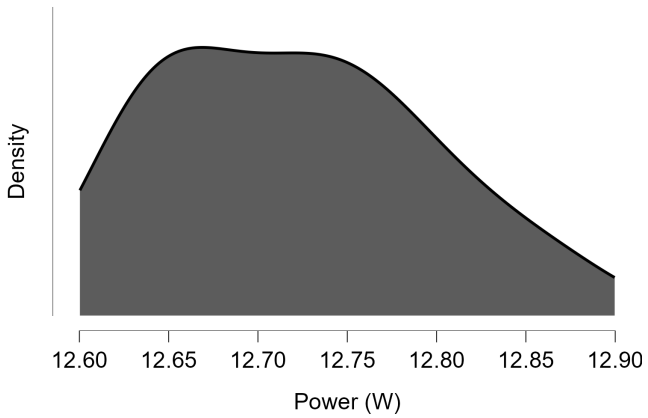


watts

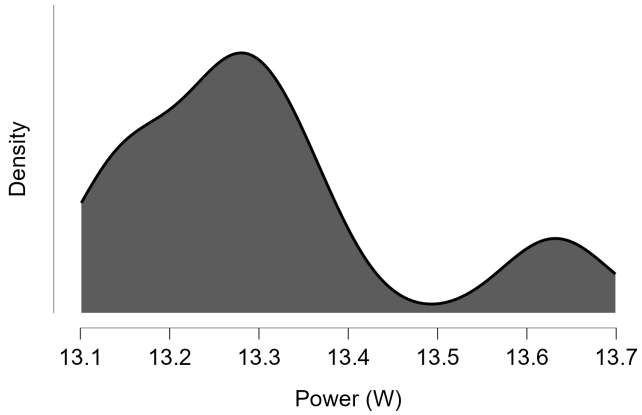
dynamosa-1337



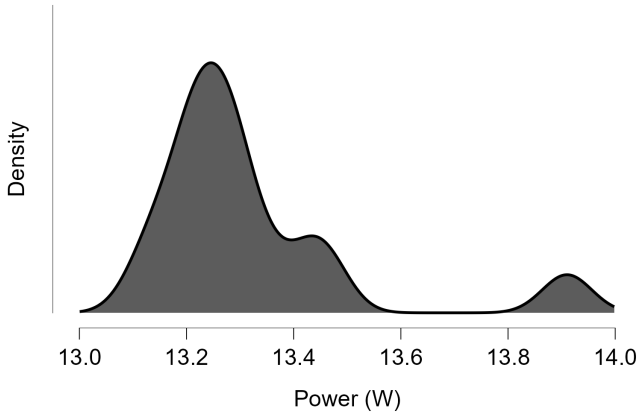
dynamosa-42



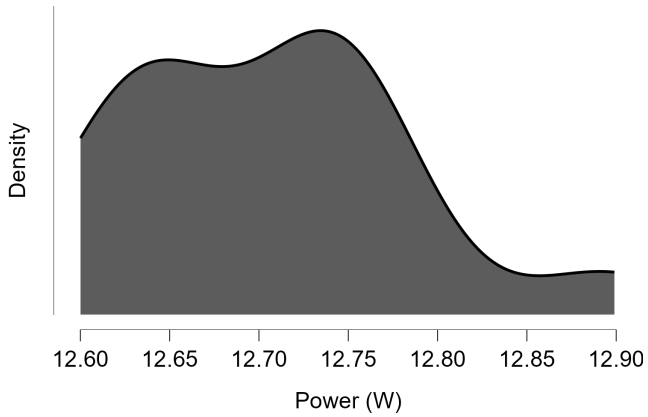
mio-1337



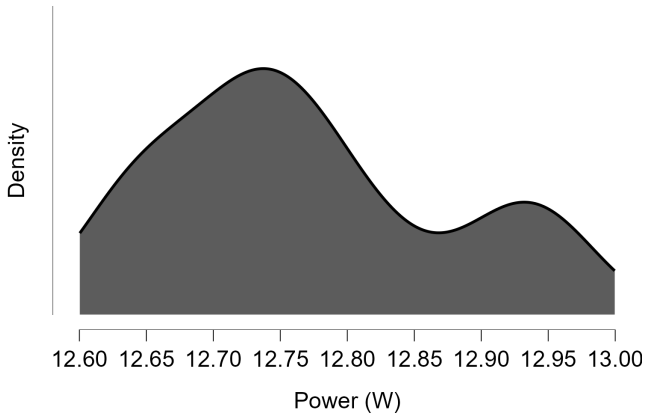
mio-42



mosa-1337

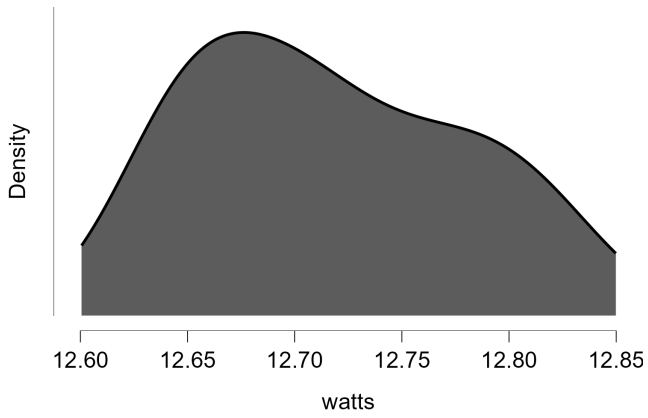


mosa-42

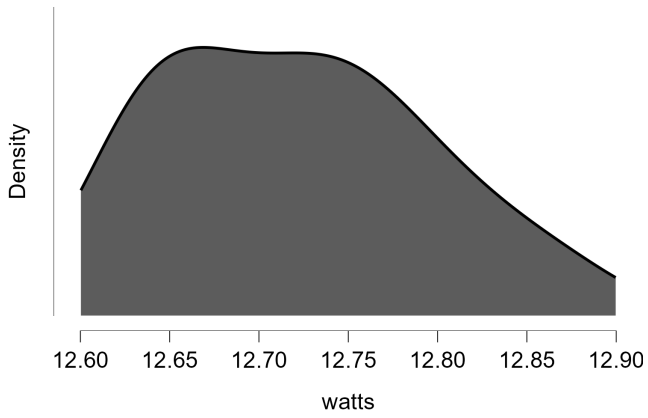


watts

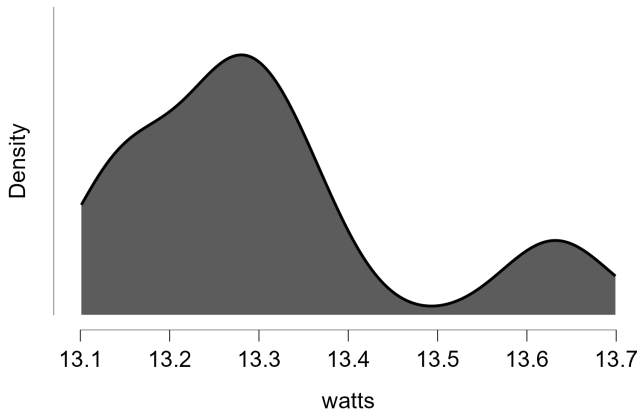
dynamosa-1337



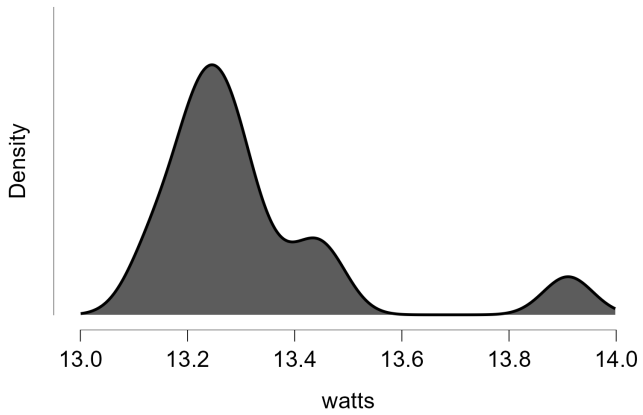
dynamosa-42



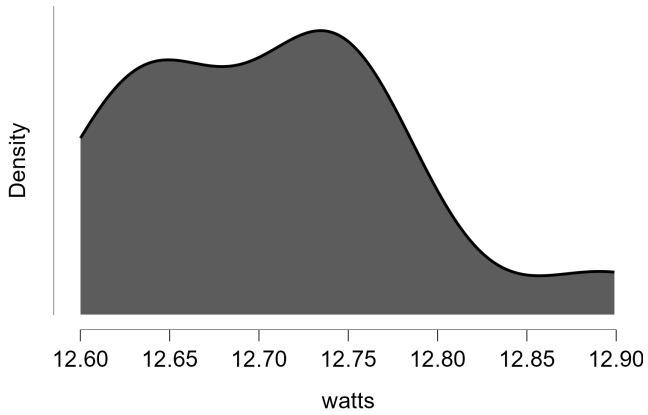
mio-1337



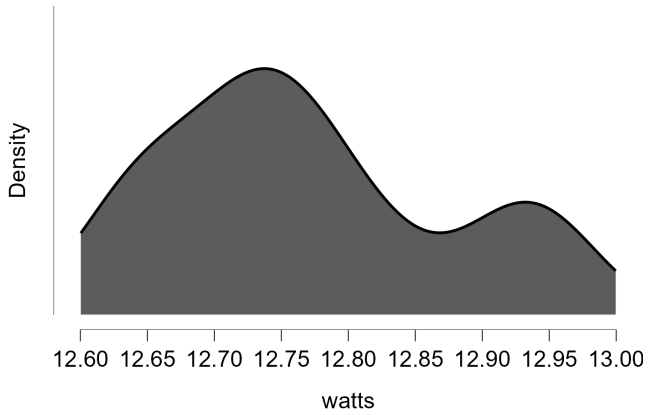
mio-42



mosa-1337



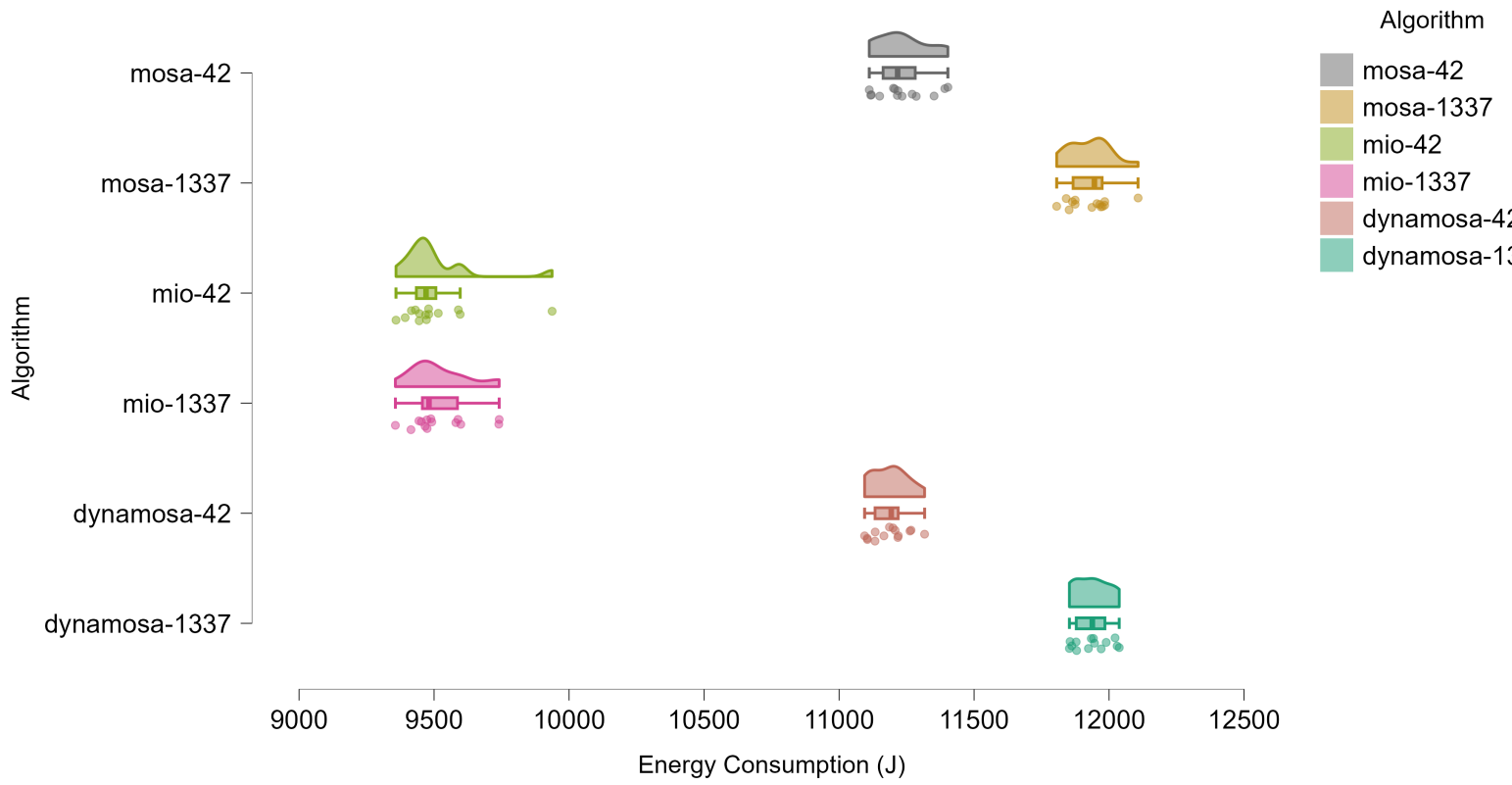
mosa-42



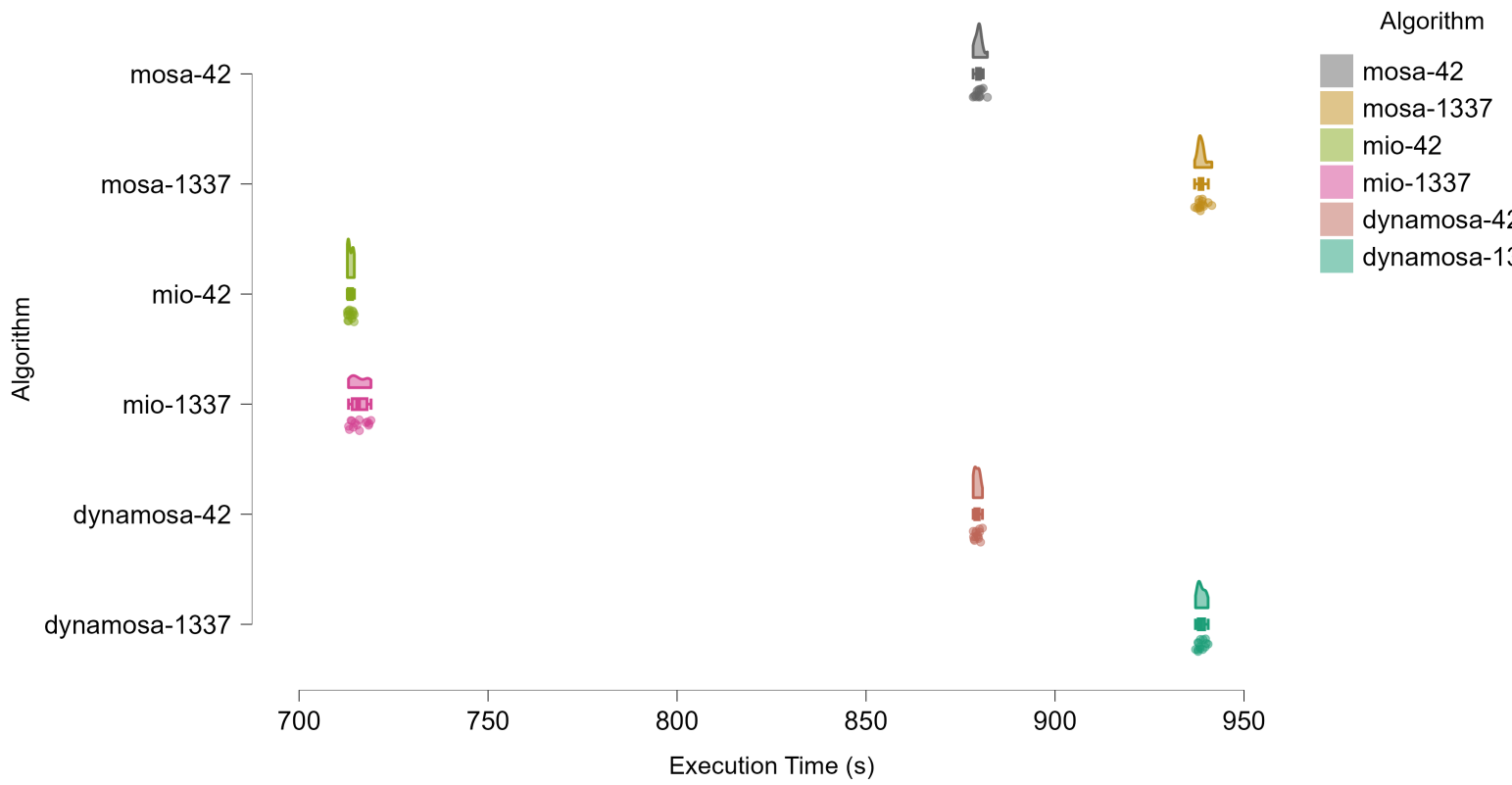
Raincloud Plots

Raincloud Plots

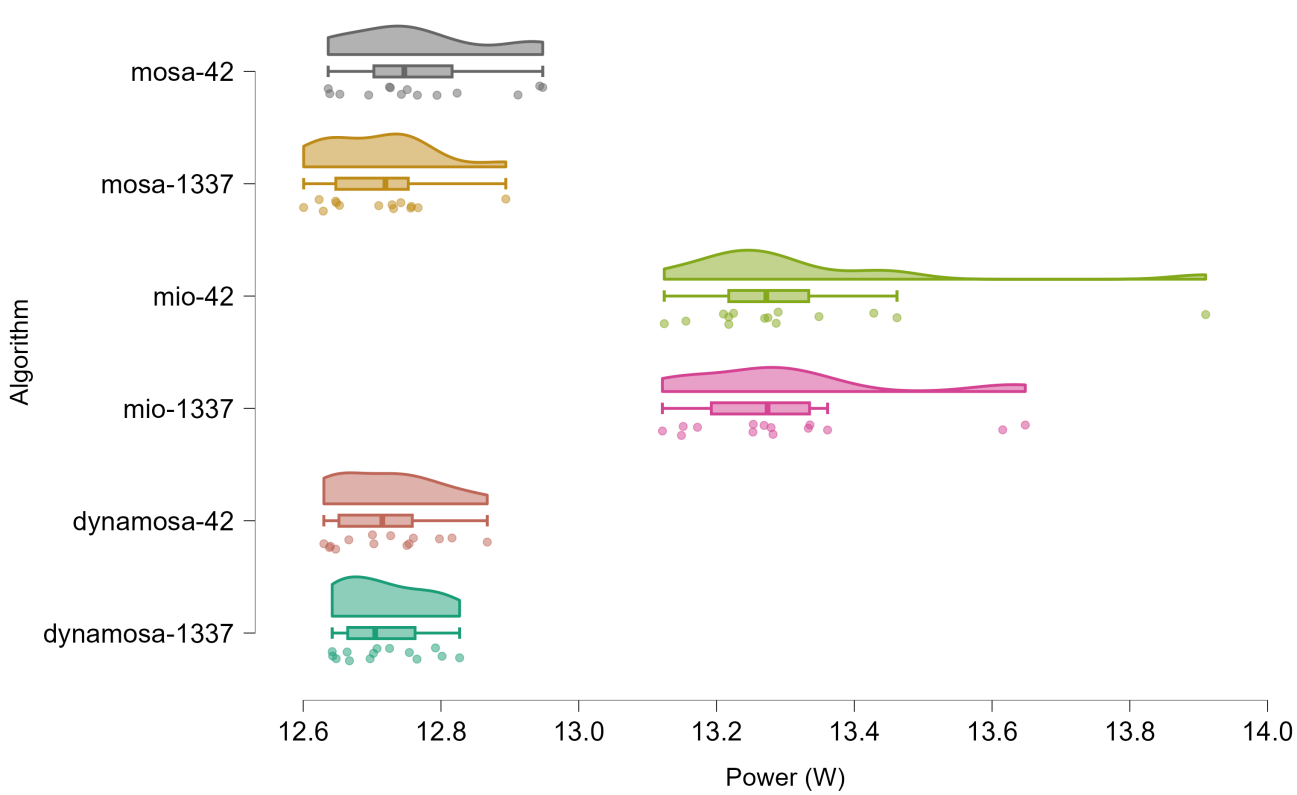
Energy Consumption (J)



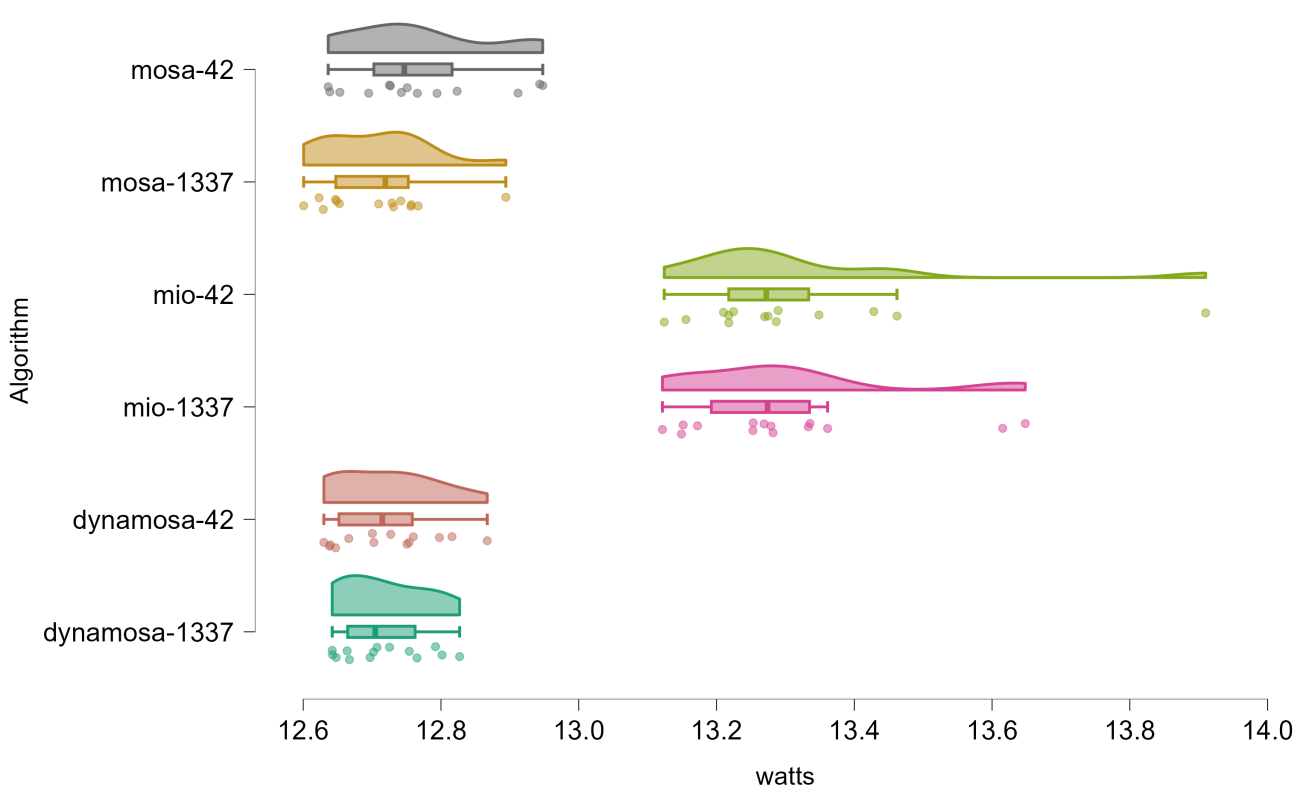
Execution Time (s)



watts


Algorithm
mosa-42
mosa-1337
mio-42
mio-1337
dynamosa-42
dynamosa-1337
12.6
12.8
13.0
13.2
13.4
13.6
13.8
14.0
Power (W)
Algorithm
mosa-42
mosa-1337
mio-42
mio-1337
dynamosa-42
dynamosa-13

watts


Algorithm
mosa-42
mosa-1337
mio-42
mio-1337
dynamosa-42
dynamosa-1337
12.6
12.8
13.0
13.2
13.4
13.6
13.8
14.0
watts
Algorithm
mosa-42
mosa-1337
mio-42
mio-1337
dynamosa-42
dynamosa-13

Statistics

Energy Consumption (J)

Primary Factor	*N*	Lower Whisker	25th Percentile	Median	75th Percentile	Upper Whisker
dynamosa-1337	14	11853.011	11878.407	11937.967	11984.607	12037.625
dynamosa-42	14	11094.595	11133.218	11193.146	11218.956	11316.699
mio-1337	14	9356.721	9456.718	9481.232	9586.662	9741.174
mio-42	14	9359.007	9434.372	9470.236	9506.837	9596.608
mosa-1337	14	11805.906	11866.688	11945.622	11974.348	12107.446
mosa-42	14	11111.766	11163.045	11216.925	11282.010	11402.919

Note. N_{Total} = 84.

Execution Time (s)

Primary Factor	*N*	Lower Whisker	25th Percentile	Median	75th Percentile	Upper Whisker
dynamosa-1337	14	937.154	937.867	938.447	939.567	940.487
dynamosa-42	14	878.336	878.757	879.298	879.942	880.794
mio-1337	14	713.084	714.049	715.627	717.978	719.027
mio-42	14	712.785	712.947	713.432	714.171	714.619
mosa-1337	14	936.927	938.057	938.475	939.132	940.532
mosa-42	14	878.313	879.220	879.803	880.231	880.986

Note. N_{Total} = 84.

watts

Primary Factor	*N*	Lower Whisker	25th Percentile	Median	75th Percentile	Upper Whisker
dynamosa-1337	14	12.642	12.665	12.705	12.762	12.827
dynamosa-42	14	12.630	12.652	12.715	12.758	12.867
mio-1337	14	13.121	13.192	13.274	13.335	13.361
mio-42	14	13.124	13.218	13.272	13.334	13.462
mosa-1337	14	12.601	12.647	12.719	12.753	12.894
mosa-42	14	12.636	12.703	12.747	12.816	12.948

Note. N_{Total} = 84.

watts

Primary Factor	*N*	Lower Whisker	25th Percentile	Median	75th Percentile	Upper Whisker
dynamosa-1337	14	12.642	12.665	12.705	12.762	12.827
dynamosa-42	14	12.630	12.652	12.715	12.758	12.867
mio-1337	14	13.121	13.192	13.274	13.335	13.361
mio-42	14	13.124	13.218	13.272	13.334	13.462
mosa-1337	14	12.601	12.647	12.719	12.753	12.894
mosa-42	14	12.636	12.703	12.747	12.816	12.948

Note. N_{Total} = 84.

ANOVA

ANOVA - Energy Consumption (J)

Cases	Sum of Squares	df	Mean Square	F	p
Algorithm	$8.648 \times 10^{+7}$	5	$1.730 \times 10^{+7}$	1798.326	< .001
Residuals	750195.658	78	9617.893		

Note. Type III Sum of Squares

Post Hoc Tests

Standard (HSD)

Post Hoc Comparisons - Algorithm

		Mean Difference	SE	df	t	p_{tukey}
(dynamosa-1337)	(dynamosa-42)	750.694	37.067	78	20.252	< .001***
	(mio-1337)	2415.055	37.067	78	65.153	< .001***
	(mio-42)	2435.254	37.067	78	65.698	< .001***
	(mosa-1337)	9.495	37.067	78	0.256	1.000
	(mosa-42)	703.336	37.067	78	18.975	< .001***
(dynamosa-42)	(mio-1337)	1664.361	37.067	78	44.901	< .001***
	(mio-42)	1684.560	37.067	78	45.446	< .001***
	(mosa-1337)	−741.199	37.067	78	−19.996	< .001***
	(mosa-42)	−47.358	37.067	78	−1.278	0.796
(mio-1337)	(mio-42)	20.199	37.067	78	0.545	0.994
	(mosa-1337)	−2405.560	37.067	78	−64.897	< .001***
	(mosa-42)	−1711.719	37.067	78	−46.179	< .001***
(mio-42)	(mosa-1337)	−2425.759	37.067	78	−65.442	< .001***
	(mosa-42)	−1731.918	37.067	78	−46.724	< .001***
(mosa-1337)	(mosa-42)	693.841	37.067	78	18.718	< .001***

*** p < .001

Note. P-value adjusted for comparing a family of 6 estimates.

Letter-Based Grouping - Algorithm

Algorithm	Letter
dynamosa-1337	c
dynamosa-42	b
mio-1337	a
mio-42	a
mosa-1337	c
mosa-42	b

Note. If two or more means share the same grouping symbol, then we cannot show them to be different, but we also did not show them to be the same.

ANOVA

ANOVA - Execution Time (s)

Cases	Sum of Squares	df	Mean Square	F	p
Algorithm	754626.841	5	150925.368	101945.825	< .001
Residuals	115.475	78	1.480		

Note. Type III Sum of Squares

Post Hoc Tests

Standard (HSD)

Post Hoc Comparisons - Algorithm

		Mean Difference	SE	df	t	p_{tukey}
(dynamosa-1337)	(dynamosa-42)	59.333	0.460	78	129.018	< .001***
	(mio-1337)	222.836	0.460	78	484.550	< .001***
	(mio-42)	225.106	0.460	78	489.486	< .001***
	(mosa-1337)	−0.036	0.460	78	−0.078	1.000
	(mosa-42)	58.865	0.460	78	128.000	< .001***
(dynamosa-42)	(mio-1337)	163.503	0.460	78	355.532	< .001***
	(mio-42)	165.773	0.460	78	360.468	< .001***
	(mosa-1337)	−59.369	0.460	78	−129.096	< .001***
	(mosa-42)	−0.468	0.460	78	−1.018	0.911
(mio-1337)	(mio-42)	2.270	0.460	78	4.936	< .001***
	(mosa-1337)	−222.872	0.460	78	−484.628	< .001***
	(mosa-42)	−163.971	0.460	78	−356.550	< .001***
(mio-42)	(mosa-1337)	−225.142	0.460	78	−489.564	< .001***
	(mosa-42)	−166.241	0.460	78	−361.486	< .001***
(mosa-1337)	(mosa-42)	58.901	0.460	78	128.078	< .001***

*** p < .001

Note. P-value adjusted for comparing a family of 6 estimates.

Letter-Based Grouping - Algorithm

Algorithm	Letter
dynamosa-1337	d
dynamosa-42	c
mio-1337	b
mio-42	a
mosa-1337	d
mosa-42	c

Note. If two or more means share the same grouping symbol, then we cannot show them to be different, but we also did not show them to be the same.

ANOVA

ANOVA - watts

Cases	Sum of Squares	df	Mean Square	F	p
Algorithm	6.327	5	1.265	84.581	< .001
Residuals	1.167	78	0.015		

Note. Type III Sum of Squares

Post Hoc Tests

Standard (HSD)

Post Hoc Comparisons - Algorithm

		Mean Difference	SE	df	t	p_{tukey}
(dynamosa-1337)	(dynamosa-42)	−0.004	0.046	78	−0.095	1.000
	(mio-1337)	−0.585	0.046	78	−12.654	< .001***
	(mio-42)	−0.599	0.046	78	−12.955	< .001***
	(mosa-1337)	0.011	0.046	78	0.229	1.000
	(mosa-42)	−0.051	0.046	78	−1.112	0.875
(dynamosa-42)	(mio-1337)	−0.581	0.046	78	−12.559	< .001***
	(mio-42)	−0.595	0.046	78	−12.861	< .001***
	(mosa-1337)	0.015	0.046	78	0.324	1.000
	(mosa-42)	−0.047	0.046	78	−1.018	0.911
(mio-1337)	(mio-42)	−0.014	0.046	78	−0.301	1.000
	(mosa-1337)	0.596	0.046	78	12.883	< .001***
	(mosa-42)	0.534	0.046	78	11.542	< .001***
(mio-42)	(mosa-1337)	0.610	0.046	78	13.185	< .001***
	(mosa-42)	0.547	0.046	78	11.843	< .001***
(mosa-1337)	(mosa-42)	−0.062	0.046	78	−1.342	0.761

*** p < .001

Note. P-value adjusted for comparing a family of 6 estimates.

Letter-Based Grouping - Algorithm

Algorithm	Letter
dynamosa-1337	a
dynamosa-42	a
mio-1337	b
mio-42	b
mosa-1337	a
mosa-42	a

Note. If two or more means share the same grouping symbol, then we cannot show them to be different, but we also did not show them to be the same.