

A Review of the Maxico KWE-PMB01 Power Meter by David Bartlett

The Power Meter can be used to test electrical appliances to determine the power consumption and the cost of electricity consumed. It is only suitable for an appliance whose plug and associated electrical socket is readily accessible.

The meter has 7 operating modes, but in this review it was generally only used in Mode 1 (Time/Watt/Cost) and Mode 2 (Time/Cumulative Electrical Quantity). Mode 1 will give the energy consumed of any appliance in Watts, in order to compare actual with published load, and the Mode 2 will calculate the KWh, the amount of energy used by the appliance over the test period. As the price of electricity will vary for different suppliers, this study has calculated costs by using my own supplied value of 17.19p/KWh.

I - Light Bulbs

It has been calculated that lighting can account for approximately 20% of overall energy consumption, both in the home and the office environment. The replacement of Incandescent Filament (IF) bulbs by LED bulbs is one of the easiest ways of reducing energy consumption. The lifetime of IF bulbs has been given as 750-2000 hours and for LED bulbs 35,000-50,000 hours. For the purposes of this investigation the lifetime of an IF bulb will be 1,000 hours and for an LED bulb 25,000 hours. The Energy Efficiency Class of an LED bulbs is typically A/A+ and E for an IF bulb.

Generally LED bulbs are more expensive than IF bulbs, but prices can vary (see Test 2)

Test 1 40W IF bulb vs equivalent LED bulb (6W)

IF bulb 0.70p/ hour.

LED bulb 0.09p/hour

The lifetime (1000 hours) operating cost of the IF bulb is 700p, equivalent operating cost of the LED bulb in this time 90p, both assuming no increase in

electricity price, i.e. a difference 610p. The LED bulb cost 250p (giving a pay-back time of some 400 hours) from Boyes, Ilkley. Cheaper bulbs can be sourced.

Test 2 60W IF bulb vs equivalent LED bulb (9W)

IF bulb 1.05p/hour

LED bulb 0.15p/hour

The lifetime (1000 hours) operating cost of IF bulb is 1050p, equivalent operating cost of LED in this time 150p, both assuming no increase in electricity price, i.e. a difference of 900p. The LED bulb cost 70p (giving a pay-back period of some 80 hours) from Home Bargains, Keighley.

Test 3 100W IF bulb vs equivalent LED bulb (15W)

IF bulb 1.80p/hour

LED bulb 0.26p/hour

The lifetime (1000 hours) operating cost of IF bulb is 1805p, equivalent operating cost of LED in this time 258p, both assuming no increase in electricity price, i.e. a difference of 1547p. The LED bulb cost 241p (giving a pay-back period of some 160 hours) from Amazon.

II - Washing Machine, Beko pro smart inverter

Test 1 Synthetics programme

1 hour 50 mins, 40 degrees C., spin 1200 rpm

Electricity usage 0.788 KWh, cost 13.5

Test 2 Daily Quick programme + Rinse & Spin

28 mins + 12 mins , 30 degrees + 0 degrees, 800 rpm + 1500 rpm.

Electricity usage 0.335 KWh, cost 5.8 p

Test 3 Tumble Dryer – White Knight Condensing

Electricity usage 1.678 KW/ hour, cost 28.84 p/hour

NB. Typical time used 2 hours.

III – Kettle, Hotpoint

Test 1

0.5 litres (2 cup) , electricity usage 0.064 KWh, cost 1.1p

Test 2

1.0 litres (4cup) , electricity usage 0.108 KWh, cost 1.9p

IV – Television, (Blaupunkt 32 inch) + Humax box

Operating Mode - Load 35 W. cost 0.60 p/hour

Standby Mode - Load 0.4 W, cost 0.007 p/hour (i.e. 61.32 p/annum)

V – Radio, Intempo Digital

The load registered as 0.6W but the meter would not register, possibly as this load would only cost 0.01p/hour or 0.25p/day.

VI – Computer, Hewlett Packard

Email Mode – Load 6 W, cost 0.10 p /hour

Screensaver Mode - Load 5W, cost 0.09 p/hour

VII - George Foreman Grill

19mins 54 secs (including warm up)

Electricity usage 0.190 KWh, cost 3.27p

VIII - Breadmaking Machine, Russell Hobbs

Small white loaf, medium crust – estimated cost of ingredients 60p

The time reading was 46:08. This represents some 24% of the total cycle of 3:10:00

Electricity usage 0.243 KWh , cost 4.18p

Medium light wholemeal loaf, dark crust – estimated cost of ingredients 80p

Time recorded 52:29

Electricity usage 0.311, cost 5.35p

IX – Conclusion

The Maxico Power Meter was easy to use and provided useful information. All our light bulbs have been changed to LED bulbs, we are no longer concerned about leaving the TV on standby and we are delighted that our loaves do cost substantially less than bought equivalents.