

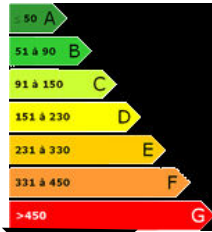
Big computer plus screen



Stand-by ??

Informatics

230V AC



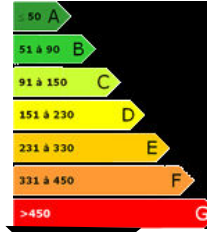
Laptop



Stand-by ??

Informatics

230V AC
12V DC*



* with special adaptor

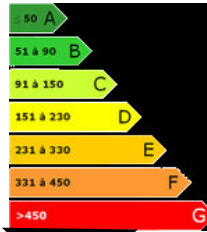
Printer



Stand-by ??

Informatics

230V AC



$$1 \times 5 \times 200 =$$

(number) h / day watts wh

$$1 \times 5 \times 40 =$$

(number) h / day watts wh

$$1 \times 5 \times \begin{matrix} \text{Inkjet:} \\ 20 \\ \text{Laser:} \\ 80 \end{matrix} =$$

(number) h / day watts wh

Router/modem

Informatics



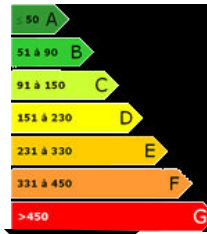
230V AC



Little gadgets for computer



230V AC



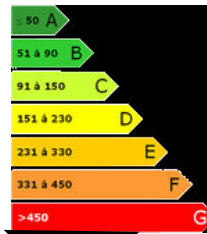
Copying machine



Stand-by ??

Office

230V AC



$$1 \times 24 \times 10 =$$

(number) h / day watts wh

$$1 \times 5 \times 5 =$$

(number) h / day watts wh

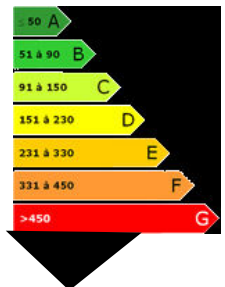
$$1 \times 8 \times 40 =$$

(number) h / day watts wh

Very old fridge
combined with freezer

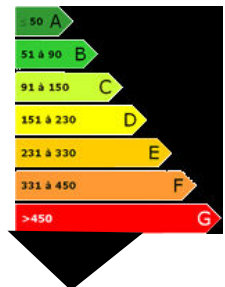
Kitchen

230V AC



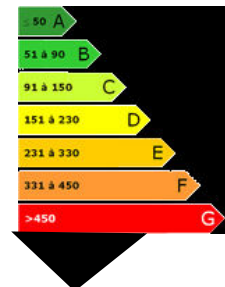
1 (number) x 1'500 Wh/day = Wh

230V AC



1 (number) x Wh/day = Wh

Fridge
(no freezer)



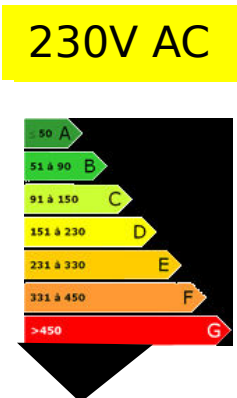
1 (number) x A: B: C: D: 350 E: 400 Wh/day = Wh (150 litres)

Kitchen

230V AC

Air conditioning

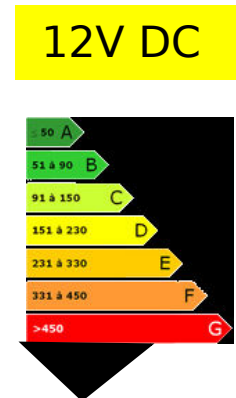
Household



1 (number) x 10 h / day x 2000 watts = Wh

Solar fridge

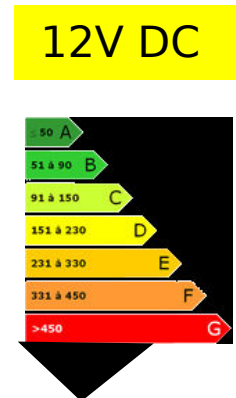
Kitchen



1 (number) x 250 Wh/day = Wh

Car cooling box

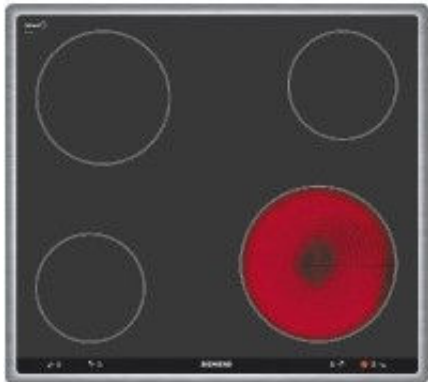
Kitchen



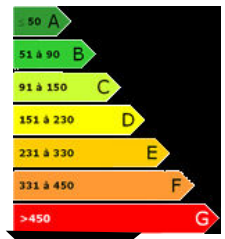
1 (number) x 1'300 Wh/day = Wh

Cooking plate

kitchen



230V AC
380V AC

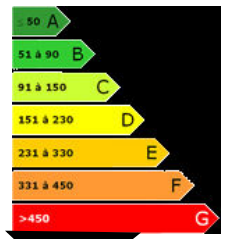


Electrical oven

kitchen



380V AC



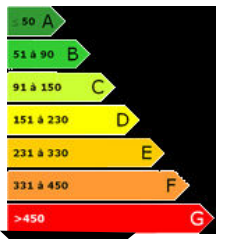
Stand-by ??

Water kettle

kitchen



230V AC



1 × **2** × 1200 =

(number) h / day watts Wh

(Standard dish, medium size oven)

1 × 1250 =

dish Wh Wh

3 × **1** × 120 =

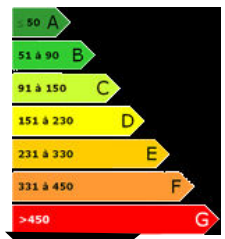
(times) litre Wh/l Wh

Toaster

kitchen



230V AC

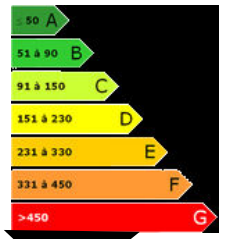


Microwave

kitchen



230V AC



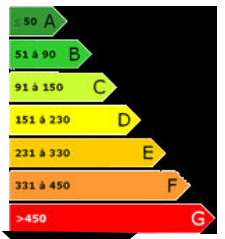
Stand-by ??

Blender

kitchen



230V AC



1 × 40 =

(runs) Wh/run Wh

1 × 0.1 × 800 =

(number) h / day watts Wh

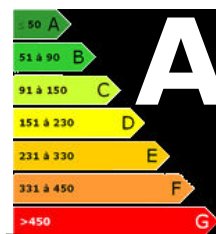
1 × 0.1 × 500 =

(number) h / day watts Wh

Neon tube

Illumination

230V AC



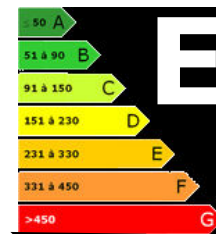
Incandescent lamp



(Halogen or 'regular')

Illumination

230V AC

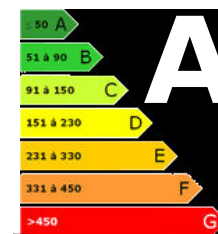


Compact fluorescent lamp



Illumination

230V AC
(12V DC)



1

x

5

x

25
(15-60)

=

1

x

5

x

60
(25-100)

=

1

x

5

x

11
(5-18W)

=

(number)

h / day

watts

Wh

(number)

h / day

watts

Wh

(number)

h / day

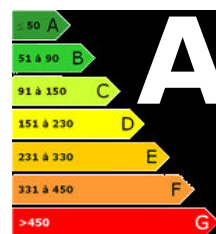
watts

Wh

LED spot

Illumination

12V AC/DC

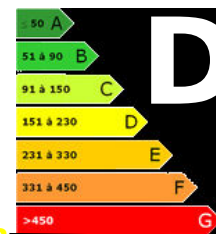


Strong halogen spot



Illumination

230V AC

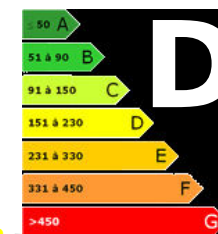


Small halogen spot



Illumination

12V AC/DC



1

x

5

x

5
(3-9)

=

1

x

5

x

150
(-300)

=

1

x

5

x

25
(-40)

=

(number)

h / day

watts

Wh

(number)

h / day

watts

Wh

(number)

h / day

watts

Wh

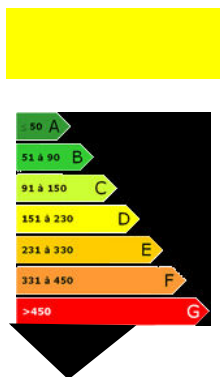
Stand-by ??

Stand-by ??

Solar cooker



Kitchen



Electrical household water heater



Hot water

230/360V



Coffee machine



Kitchen

230V AC



$$1 \times 5 \times 0 = \text{Wh}$$

(number) h / day watts

$$150 \times 60 = \text{Wh}$$

(litres) Wh/litre

$$1 \times 200 = \text{Wh}$$

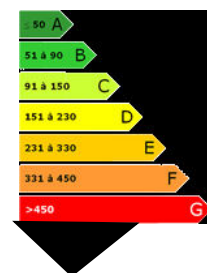
(standard values) (150-550) Wh/day

Vacuum cleaner



Household

230V AC



Solar collector (stand alone)



Hot water

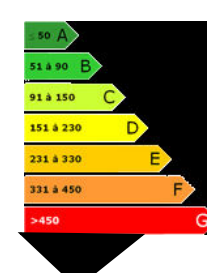


Smart phone



Communication

230V AC



$$1 \times 1/4 \times 800 = \text{Wh}$$

(number) h / day watts

$$1 \times 24 \times 0 = \text{Wh}$$

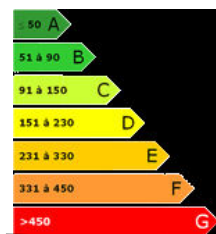
(number) h / day watts

$$1 \times 15 = \text{Wh/day}$$

(EU: max. 900W)

Solar torch

Illumination

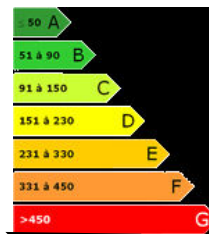


Fan



Household

230V AC

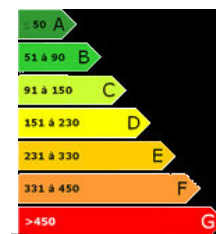


Solar collector (with pump)



Hot water

230V AC



1

x

1/2

x

0

=

1

x

8

x

40

=

1

x

10

x

30

=

(number)

h / day

watts

Wh

(number)

h / day

watts

Wh

(number)

h / day

watts

Tesla car

Transport

Bicycle

Transport

Playstation (etc.)

Communication

230V/400V

230V AC

Stand-by ?

1

x

40

x

250

=

1

x

1

x

0

=

1

x

2

x

150

=

(number)

km/ day

Wh/
km

Wh

(number)

h / day

watts

Wh

(number)

h / day

watts

Dishwasher

Kitchen

Any freezer
(frontload)

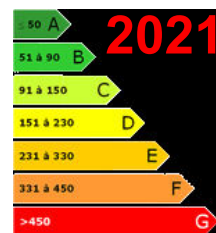
Kitchen

Any freezer
(topload)

Kitchen



230V AC



230V AC



230V AC



1

x

A: 900
C: 1200
F: 1600

=

run(s)

Wh/run

Wh

(200 litres)

1

x

A:
B:
C:
D: 500
E: 600

=

Wh/day

Wh

(190 litres)

1

x

A:
B:
C:
D: 450
E: 550

=

Wh/day

Wh

Any fridge
combined with freezer

Kitchen

Waterbed

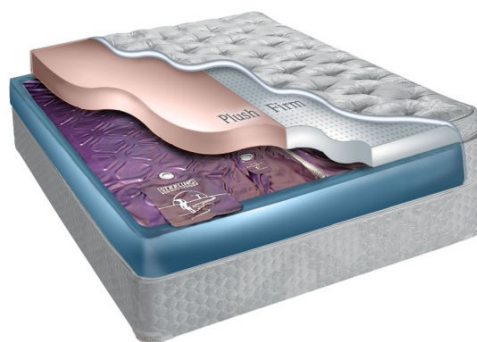
Household

Portable
electric radiator

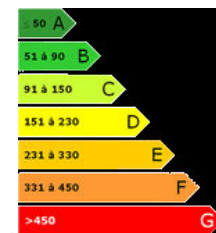
Household



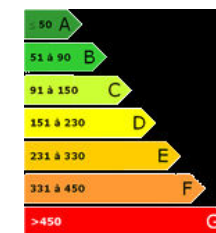
230V AC



230V AC



230V AC



1

x

A:
B:
C: 450
D: 550
E: 600

=

Wh/day

Wh

(190 + 60
litres)

1

x

600

=

Wh/day

Wh

1

x

8

x

2000
(500
-2500)

=

watts

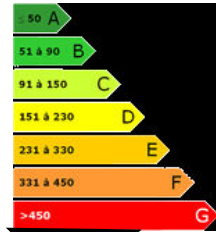
Wh

Big hi-fi stereo

sound



230V AC



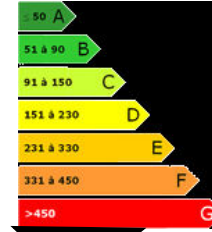
Stand-by ??

Car hi-fi

sound



12V DC



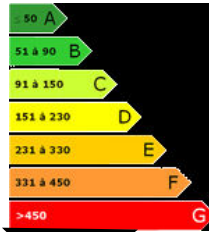
Stand-by ??

Portable radio / hi-fi

sound



230V AC
12V DC*



Stand-by ??

* with adaptor

1

x

8

x

40

(30-200)

=

1

x

8

x

10

(-100W)

=

1

x

8

x

5

=

(number)

h / day

watts

Wh

(number)

h / day

watts

wh

(number)

h / day

watts

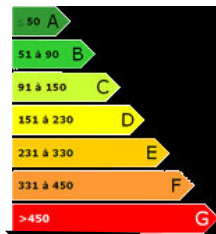
wh

Cordless phone

communication



230V AC

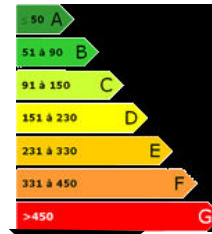


mobile phone charger

communication



230V AC
12V DC*



Stand-by ??

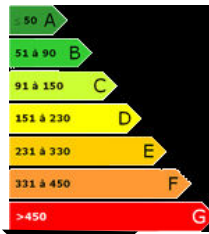
* car phone charger

ipod with base station

sound



230V AC
12V DC*



Stand-by ??

* with adaptor

1

x

24

x

5

=

1

x

3

x

5

=

1

x

8

x

5

=

(number)

h / day

watts

wh

(number)

h / day

watts

wh

(number)

h / day

watts

wh

Nespresso

Kitchen

Electric
fruit dryer

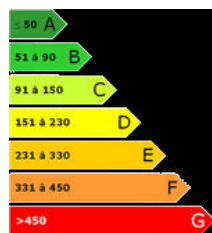
Kitchen

Handheld electric
mixer

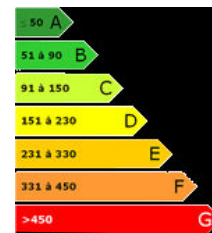
Kitchen



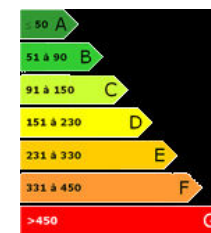
230V AC



230V AC



230V AC



1

x

100

(80-180)
Wh/day

=

(1.5 kg fresh
fruit)

1

x

7000

(4500-
9000)
Wh/charge

=

1

x

1/5

Hours/day

x

250

(150-500)
Watt

=

Wh

(standard
values)Portable
loudspeakers

Sound

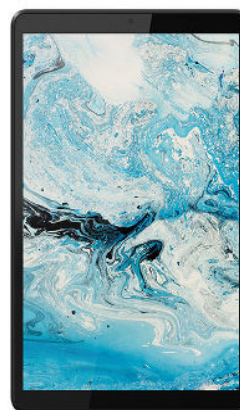
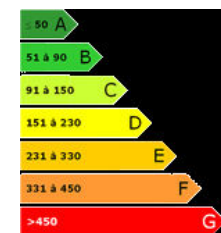
Tablet

Informatics

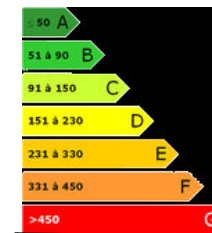
Video projector

Entertainment

USB

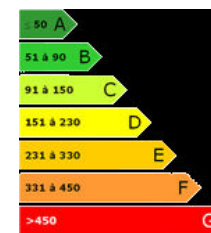


USB



(LED)

230V AC



1

x

4

x

5

Watt

=

Wh

1

x

5

Hours/day

x

5

Watt

=

Wh

1

x

2

x

150

(20-400)
Watt

=

Wh

Tube TV

TV

Flat screen TV

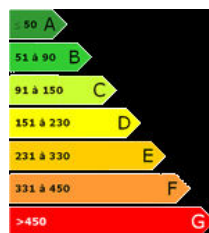
TV

Set top box

TV



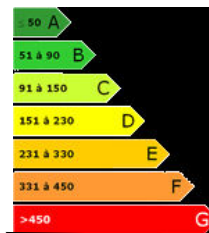
230V AC



Stand-by ??



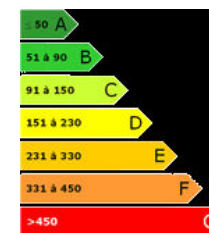
230V



Stand-by ??



230V



$$1 \times 4 \times \begin{matrix} \text{Small:} \\ 35 \\ \text{Medium:} \\ 100 \end{matrix} \text{ watts} = \text{Wh}$$

DVD / VHF

TV

Stand-by:
old devices

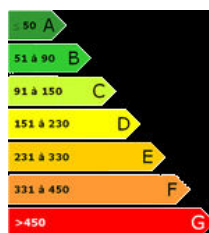
All household

Stand-by:
new devices

All household

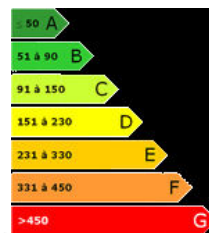


230V AC



Stand-by !!

230V AC



Stand-by !!

230V AC



$$1 \times 3 \times 10 \text{ watts} = \text{Wh}$$

$$5 \times 24 \times 10 \text{ watts} = \text{Wh}$$

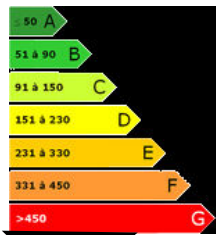
$$8 \times 24 \times 3 \text{ watts} = \text{Wh}$$

Washing machine



washing

230V AC



1

(loads)

x

cold: 250
40°C: 600
60°C: 800
95°C: 1200

=

Wh

Wh(4kg load)

1

(loads)

x

3000

=

Wh

Wh(4kg load)

1

(loads)

x

1500

=

Wh

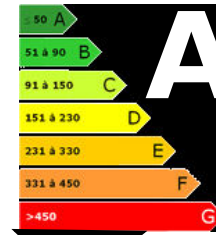
Wh

Condensing clothdryer



washing

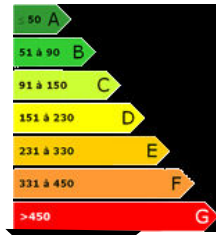
230V AC



A

washing

230V AC

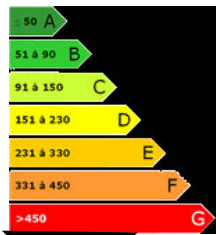


Clothdryer



washing

230V AC

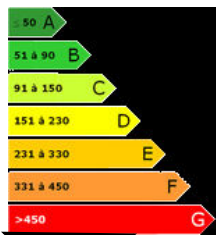


Iron



washing

230V AC

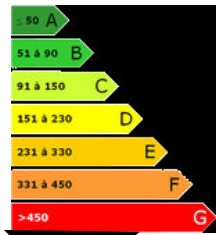


Hairdryer

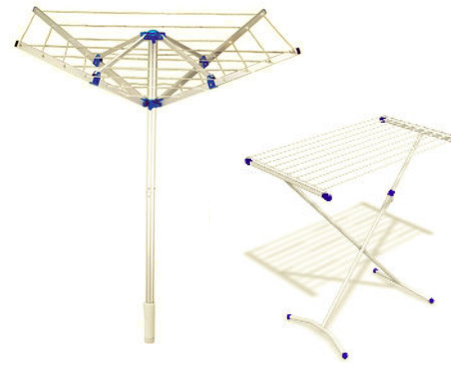


bathroom

230V AC



Air/sun drying



washing

1

x

0.5

x

700

=

watts

Wh

1

x

0.2

x

1000

=

watts

Wh

1

x

0

=

(loads)

Wh

Wh

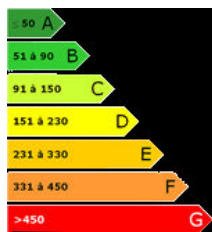
(5kg load)

Drone



Entertainment

230V AC



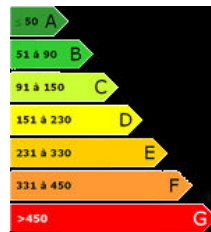
Internet via satellite



(Starlink)

Informatics

230V AC



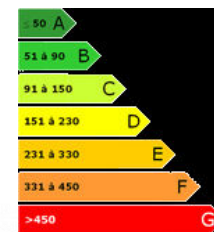
Electric bicycle



(peddle assist mode)

Mobility

230V AC



1

x

1/4

x

50

(10-80)

Watt

=

1

x

24

Hours/day

x

100

Watt

=

1

x

20

km/ day

x

7

Wh/
km

=

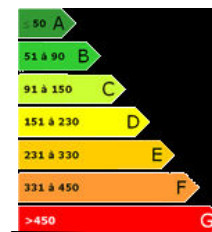
Wh

Micro scooter



Mobility

230V AC



Small electric car



Mobility

230V/400V

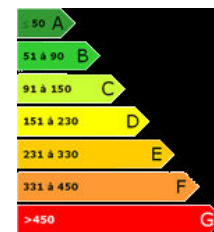


Travel by train



(per person)

Mobility



1

x

10

x

7

(5-10)

Wh/
km

=

1

x

40

km/ day

x

150

Wh/
km

=

1

x

40

km/ day

x

100

Wh/
km

=

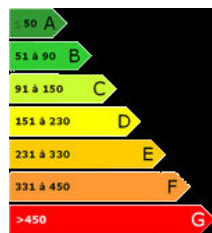
Wh

Satellite TV



TV

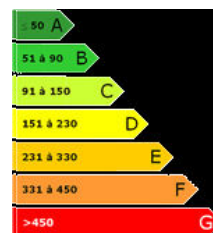
230V AC



Bycicle driven blender



Kitchen

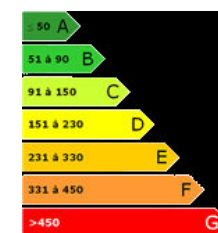


Elektric motorbike



Mobility

230V/400V



$$1 \times 24 \times 20 = \text{Wh}$$

Hours/day

Watt

$$1 \times 0.1 \times 0 = \text{Wh}$$

Hours/day

Watt

$$1 \times 30 \times 80 = \text{Wh}$$

km/ day

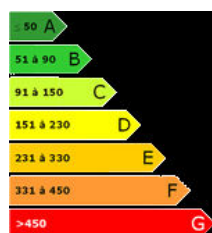
Wh/ km

Electric scooter



Mobility

230V AC



Heat pump Single family home



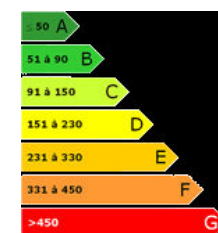
House heating



Travel by tramway



Mobility



$$1 \times 20 \times 30 = \text{Wh}$$

km/ day

Wh/ km

$$1 \times 6'000 = \text{Wh}$$

(Mingergie: 2'750)

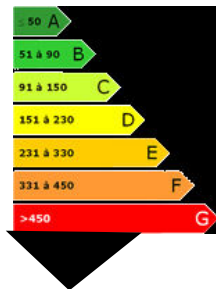
$$1 \times 40 \times 125 = \text{Wh}$$

km/ day

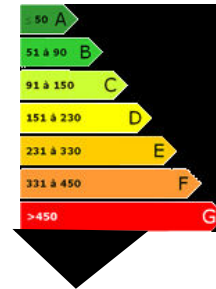
Wh/ km

(Complete house, daily average, heating and hot water)

(per person)



$$\begin{matrix} 1 \\ \text{(number)} \end{matrix} \times \begin{matrix} \text{h / day} \end{matrix} \times \begin{matrix} \text{watts} \\ \text{Wh} \end{matrix} =$$



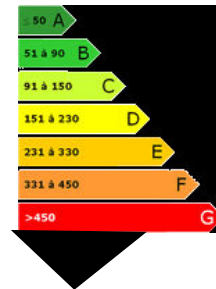
$$\begin{matrix} 1 \\ \text{(number)} \end{matrix} \times \begin{matrix} \text{h / day} \end{matrix} \times \begin{matrix} \text{watts} \\ \text{Wh} \end{matrix} =$$



$$\begin{matrix} 1 \\ \text{(number)} \end{matrix} \times \begin{matrix} \text{h / day} \end{matrix} \times \begin{matrix} \text{watts} \\ \text{Wh} \end{matrix} =$$



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$$\begin{matrix} 1 \\ \text{(number)} \end{matrix} \times \begin{matrix} \text{h / day} \end{matrix} \times \begin{matrix} \text{watts} \\ \text{Wh} \end{matrix} =$$

1	1	1	1	1	1	A	A
2	2	2	2	2	2	B	B
3	3	3	3	3	3	C	C
4	4	4	4	4	4	D	D
5	5	5	5	5	5	E	E
6	6	6	6	6	6	F	F
7	7	7	7	7	7	G	G
8	8	8	8	8	8	A+	A+
9	9	9	9	9	9	A++	A++
10	10	10	10	10	10	A+	A+
12	12	12	12	12	12	A++	A++