



Value of the EM fields generated by the electro-domestic appliances at power frequency (50 Hz)

Prepared by Belgian BioElectroMagnetics Group (BBEMG)

	Electric field (V/m)	Magnetic induction (μT) *	Distance of measurement (cm)
In the kitchen			
Toaster	<150	0,06 à 0,7	30
Dishwasher	<150	0,6 à 3	30
Coffee maker	<150	0,08 à 0,15	30
Stove hotplate	<150	0,35 à 0,1	30
Refrigerator	<150	0,01 à 0,25	30
In the living room			
High fidelity stereo system	<150	0,19	30
Television	<150	0,04 à 0,2	30
In the laundry/workshop			
Iron	<150	0,12 à 0,3	30
Drilling machine	<150	2 à 3,5	30
Washing machine	<150	0,15 à 3	30
Saw	<150	1 à 25	30
Dryer	<150	0,08 à 0,3	30
In the bathroom			
Electric shaver	<150	15 à 1500	3
Hair dryer	<150	6 à 2000	3
In the bedroom			
Heating cover	250	0,3 à 5	3
Bedside lamp	<150	2	30
Electric alarm-clock	<150	0,5 à 1	30
Other			
Lamp bulb	<150	2	30
Vacuum cleaner	<150	2 à 20	30
Underfloor heating system	<150	8 à 12	30
Electricity meter	<150	0,6 à 3,5	30
Halogen lamp	<150	0,17	30
Electric heater	<150	0,15 à 5	30
Fuse box	<150	4 à 5	30
Fan	<150	0,03 à 4	30

Sources : Gauger, 1984 - Rollier, 1988 - Bernhardt, 1986 - Schiffman et al, 1998 - CEI, 1998 - Lilien, 2000

Comment: the list is not exhaustive and we are willing to extend it according to your interests. Do not hesitate to ask for new entries.

(*) The term "Magnetic field" is often used instead of "Magnetic induction" (or "Magnetic flux density"). That is why you can find magnetic field (H in Ampere/meter) expressed in Tesla (or Gauss with $10^{-4} \text{ T} = 1 \text{ G}$), which is the unit of magnetic induction (B).

Magnetic field H and magnetic induction field B are linked, in a given material, by the equation:

$$\mathbf{B} = \mu * \mathbf{H}$$

where μ is the magnetic permeability of the material (in Henry/meter).

The magnetic permeability of a material is the capability of this material to channel magnetic induction, in other words, to concentrate magnetic flux lines and thus to increase the value of magnetic induction. It means that this value depends on the material in which it is produced.

The channelling of the magnetic field in a material which is also a conductor is especially reduced, because of contact current (lien...) when frequency of field variation, permeability and conductivity are high.