

Infrared Heater Guidance (page 1 of 2)

Infrared heaters offer a clean, safe, easy to install, energy efficient and weatherproof method of heating yards and stables. There is a wide range of infrared heaters and accessories, so you can be confident they will work indoors and outdoors without problem.

In many cases, it is better to install a number of smaller heaters, rather than one or two larger ones, as it is possible to get a better and more even spread of heat. However, you may want to install a 'spot heating' system, for drying for example, which you may be able to do by installing just one heater. The first step to designing your new heating system is to calculate the total power output required (in kW).



Calculating the power output required with infrared heaters:

The absolute calculation for determining the total size of a heating system is very complicated, as it needs to take into account so many different factors, such as the construction material of the area, the insulation levels and the external and internal temperatures. The calculations below give an approximate power output figures, but you should always bear in mind that the only true way to get the correct size of system is by experimentation.

Step One

Calculate the area to be heated in square meters.

Area (m²) = Length (m) x Width (m)

Step Two

From the table below, select the factor that most closely matches the building type.

Heat load (kW) = Area (m²) x factor

Building type	Multiplying factor
Small building with good insulation or suspended ceiling	0.08
Large room or area with good insulation, up to 3 meter ceiling height	0.1
Poorly insulated area with high ceiling and concrete floor	0.15
Uninsulated building where reasonable levels of comfort are required	0.2
General heating in a large building or workshop	0.25
Zone heating for an area with little or no heating	0.45

Examples:

A. Small Stable / Tack Room, uninsulated

Size: 3.5m x 3.5m = 12.25m²

Minimum heater output required (factor : 0.15) = **1.8kW**

B. Workshop in an uninsulated out-building

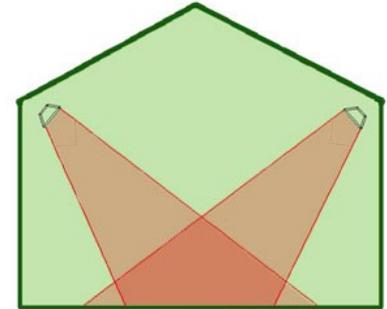
Size: 5m x 5m = 25m²

Minimum heater output required (factor : 0.2) = **5.0kW**

Infrared Heater Guidance (page 2 of 2)

Positioning the Heaters:

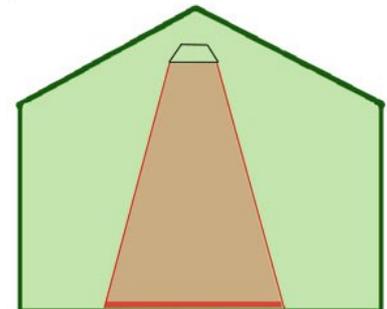
Infrared heaters are basically a form of spotlight, so the energy they produce can be directed in the same way. Carefully positioning the heaters, we are able to effectively eliminate 'shadows' from our setup, which would be unheated areas. These can be caused by beams, joists, etc. The greatest benefit is felt when an area is heated from two sides and the beams overlap. For zone heating infrared radiant heaters should be mounted overhead, angled at 30 to 45 degrees, distributed evenly.



The exact mounting height for the heaters may need to be determined through trial and error due to the multitude of different factors affecting it. However, we recommend that heaters not be mounted lower than 1m or higher than 75cm per 500W plus 100cm, i.e. a 1500W heater should be 2.25m or less and a 2000W heater less than 3m. When mounted at 45-degrees, the spread from a 500W heater will cover approximately 5m² and each additional 500W a further 3m² (eg a 1500W heater will cover about 11m²).

Spot heating with infrared heaters:

Infrared heaters are well suited to drying water, making them ideal for tack rooms or even drying horses after washing. When using wall mounted infrared heaters for spot heating, the heater can be placed as close as 1m from the surface or animal being heated.



For spot heating, where the heater is mounted directly above the area to be heated, the heated surface is about half the area when mounted at 45-degrees. For spot heating, the minimum power output calculated previously should be multiplied by 2, e.g. if you wish to spot heat an area of 5m² in an uninsulated stable, we should use a 1.5kW heater: 5m² x insulation factor of 0.15 x 2 = 1.5

Safety precautions for infrared heaters

- Unless IP55 rated, or higher, infrared heaters should not be installed where they will be splashed or exposed to rain. In all cases, try to mount the heater so that the heating elements are facing downwards to prevent build-up of dust or dirt.
- To prevent overheating an air gap must be left between the top of the heater and the ceiling. We recommend 45cm as a minimum.
- All installations involving 3kW or more must be undertaken by a qualified electrician.