



Positioning your IR Inspection Port:

Once you have decided on the viewing material that best suits your requirements and operating environment, the next step is to decide where you want to position your IR inspection port. The thermographer must first identify the target components that he wishes to measure during his inspection program; once this has been completed the following areas will need investigating prior to finalizing the IR inspection port specifications:

A common mistake made during new installations is calculating the position of the IR windows prior to the final installation of the equipment and the fitting of all associated cables, etc.

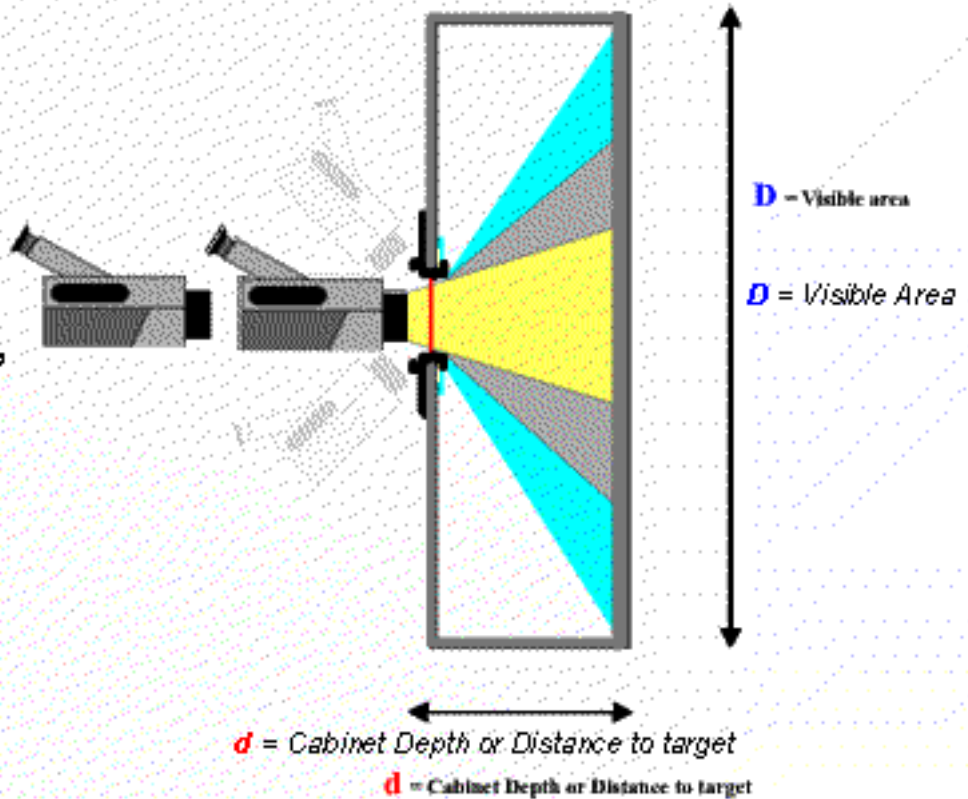
BEWARE DO NOT try to calculate FOV or install your IR windows unless you know exactly where the new cable runs and cable positions are in the new installation, this will save you time and expense by ensuring you only purchase the correct size and quantity of IR windows to fulfill your requirements.

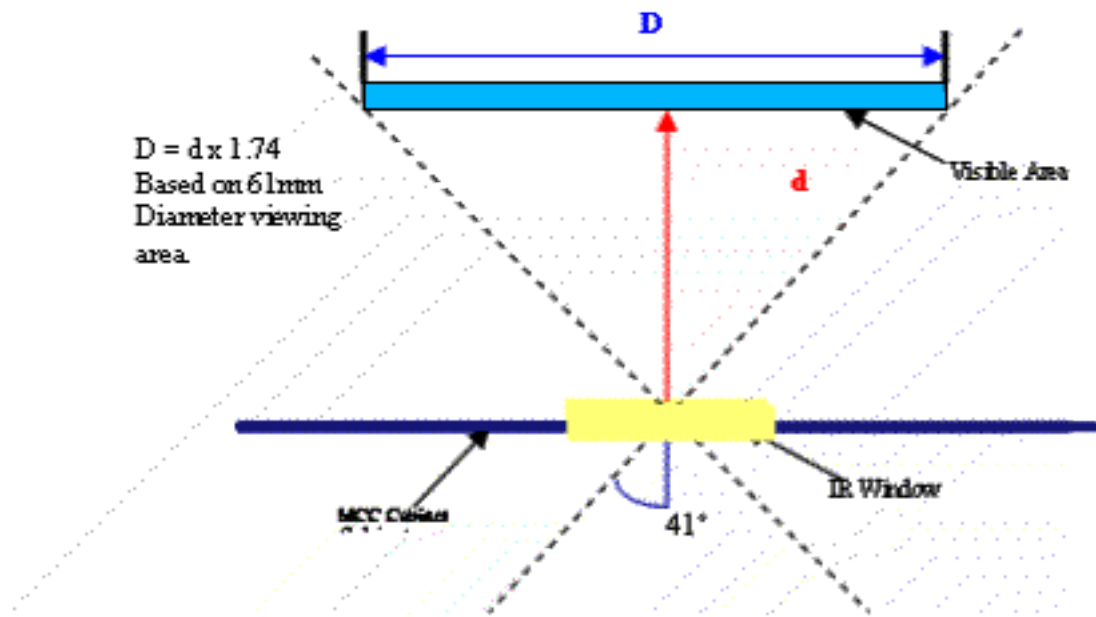
Field of View

The inspection port diameter needed is a function of the lens field of view and the distance from the inspection port to the component in which the thermographer needs to see. Traditionally the total field of view is calculated by multiplying

Two times the distance by the tangent of one half the angle.

Equal to six times cabinet depth or target distance
 $D = d \times 1.74 \times 6$
 $D = 20 \times 1.74 \times 6 = 208.8''$
 $D = 17.4 \text{ feet}$
 $D = 302.76 \text{ square feet}$





Some manufacturers advocate increasing the FOV by a multiplication factor of 6, this is however impractical. A good practice for thermographers is to not have too extreme an angle of incidence from a perpendicular target, this should not exceed 30° were possible.

We therefore recommend that thermographers never use a multiplication factor in excess of 3, exceeding this can cause problems and give poor results due to extreme angles, internal obstructions, etc. We also recommend that a maximum multiplication factor of 2 is used during your calculations to maintain the image integrity and identifying any fault locations, and you may increase this to a multiplication factor of 3 if there are no internal obstructions, etc. Finally we advise that if you need to work to extreme angles that you consider using wider angled lenses if possible.

[Click here to enter Field of View calculation page.](#)

Note: The distance units will be in local units i.e. if you input inches it will calculate in inches, input cm it will calculate cm, etc.