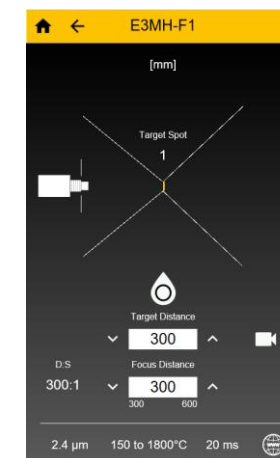
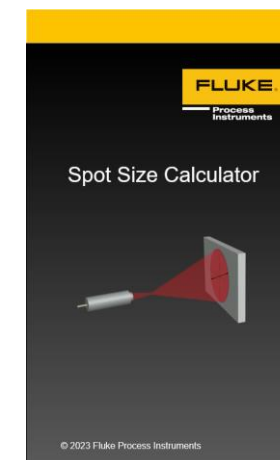


How to Draw a Basic Pyrometer Optical Diagram

For creating an optical diagram based on the written 90% optical specification

Approximate “cone of vision” when the Spot Size Calculator does not include a specific model or special build model

July 2023



Start with a centre line

Add the lens diameter (quoted spot size at 0mm distance)



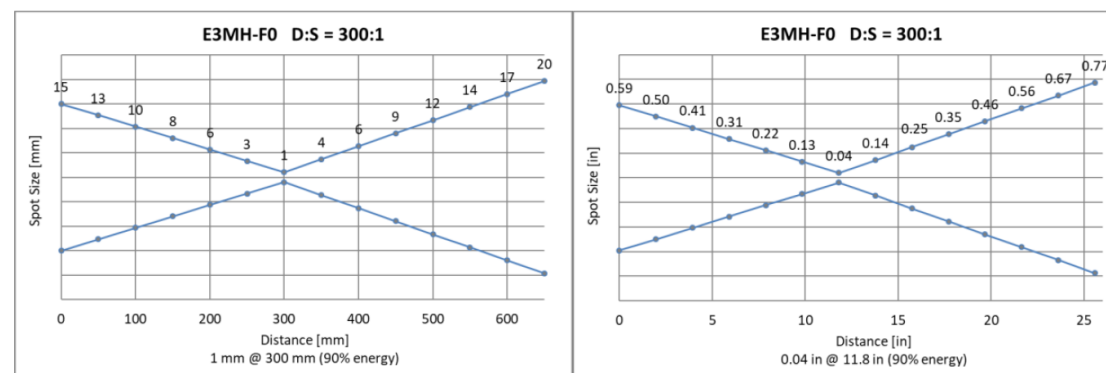
MM = 30mm @ 0mm distance

TX= 18mm @ 0mm distance

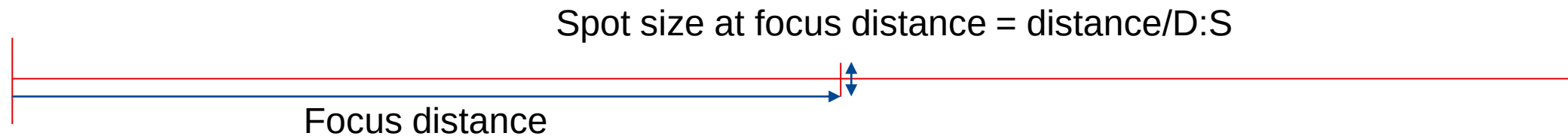
T4.0 (LT, G5 etc) = 22.5 @ 0mm distance

Mi3 = 6mm @ 0mm distance

Endurance = 15mm @ 0mm distance



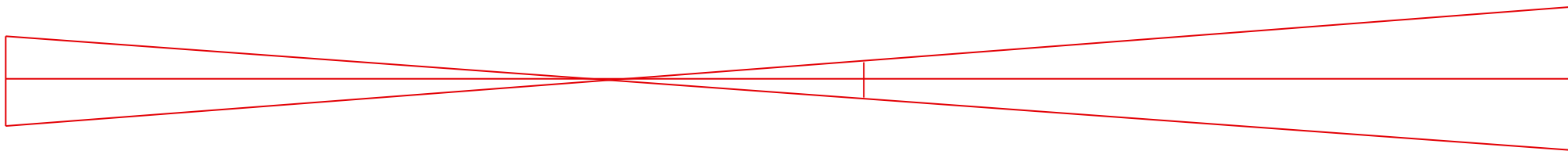
Add the spot size diameter (quoted spot size at focus distance) at a distance (relative scale)



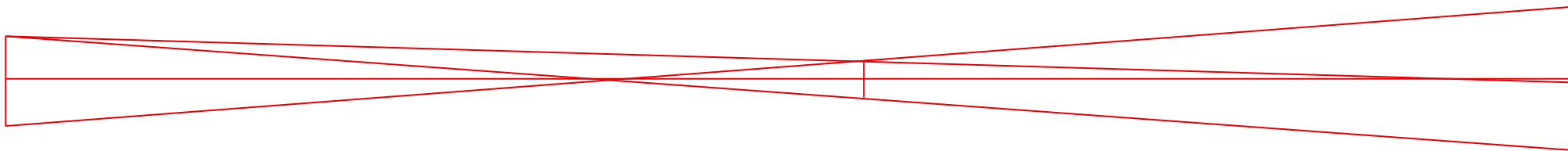
Draw the 1st line (ray)



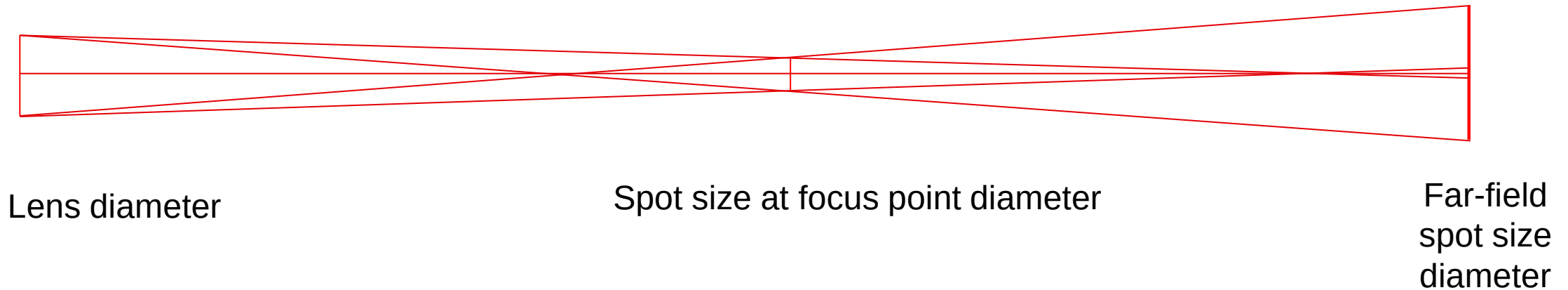
Draw the 2nd line (ray)



Draw the 3rd line (ray)

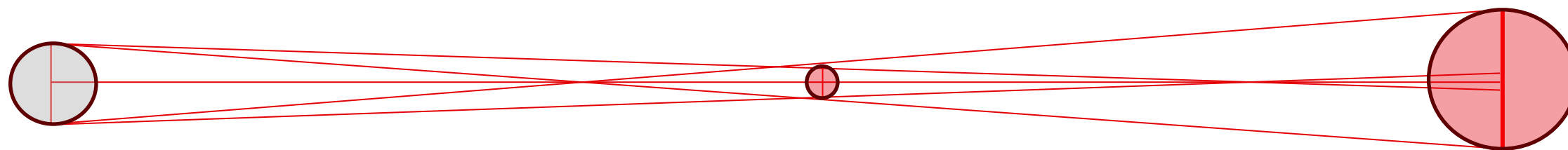


Measure (using scale) to determine spot size at any distance



Measure (using scale) to determine spot size at any distance

Remember that this is the 90% spot size



Lens diameter

Spot size at focus point diameter

Far-field
spot size
diameter

90% spot size = 10% of the energy for the measurement comes from outside the stated spot size
The diameter of this “practical” 100% spot size (90% spot size $\times n > 1$) is a function of optical quality (Endurance is better than Mi3)

Measure (using scale) to determine spot size at any distance

Remember that this is the 90% spot size

100% spot size will always be larger

