2. Photographing

Let us notice that at the lower part of the photo, there are few brighter spots of regular circular shape and clear edges — unlike all the rest at the smudged (out of focus) part of the image. This can be only due to the point sources in that far area. Let the distance of the linear from the lens be l, and the distance between the sensor and the focus — x. Then, according to the Newton formula, $x(l-f) = f^2$, where f is the focal distance; hence $\frac{l-f}{f} = \frac{f}{x}$. Let the spot diameter be δ. Then the lens diameter $d = \delta\frac{f}{x} = \delta\frac{l-f}{f}$. Let the size of the image of the linear be a, and the size of the linear itself — A. Then $A = a\frac{l}{x+f}$. From the lens formula, $\frac{1}{x+f} = \frac{l-f}{fl}$, hence $A = a\frac{l-f}{f}$. Comparing with the previous result we obtain $d = \delta A/a$, i.e. the lens diameter equals to the spot diameter, using the scale of the linear. From the figure, we find $d = 17\,\text{mm}$.