



Fresnel zone plates

A suitable circular absorbing or phase grating is called Fresnel zone plate (FZP) [Fre 1866]. A FZP focuses the incoming beam to a point focus (fig. 1). The minimum diameter of the focus reached is 15 nm for X-rays in 2008. There are also zone plates reflecting the incoming light.

These types of Fresnel zone plates can be distinguished:

Fresnel zone plates	Reflecting Fresnel zone plates	Condenser zone plates
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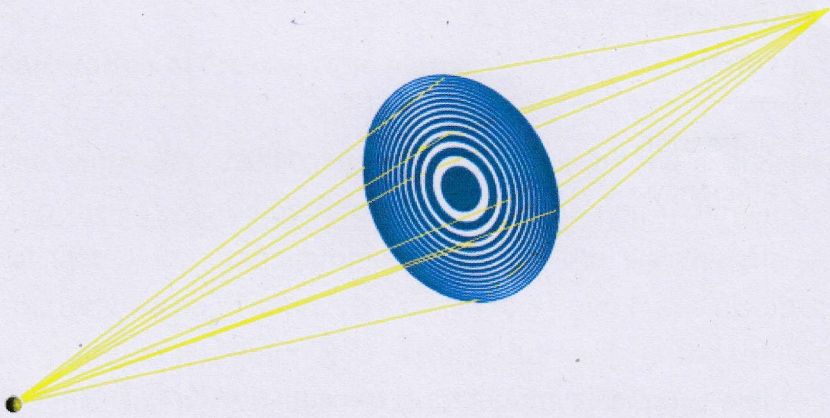


Fig. 1: Focusing X-rays with a diffracting zone plate

As for visible light, Fresnel zone plates for X-rays can be absorbing or phase shifting. Absorbing zone plates are more common in the X-ray range. They are made of an X-ray absorbing material, e. g. some micrometers gold, on a membrane transparent for X-rays, e. g. Si_3N_4 .