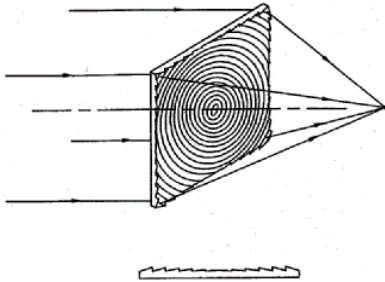
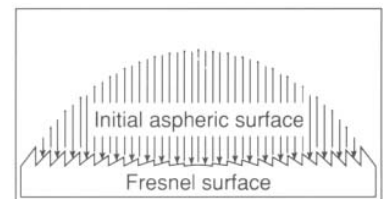
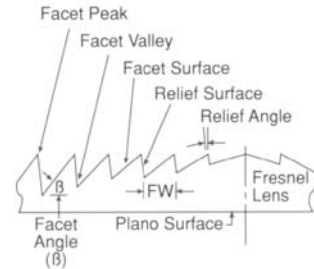


Optical Microstructured Surfaces

Optical microstructured products are composed of a series of structured surfaces. These surfaces may have straight or curved profiles with constant or random spacing and may even vary from submicrons to millimeters in dimension. Patterns may be circular, linear or have no uniform pattern.

A Fresnel lens has a microstructured surface, which consists of a series of grooves with changing slope angles as the distance from the optical axis increases. The relief or draft facets located between the slop facets usually do not affect the optical performance of the Fresnel lens.

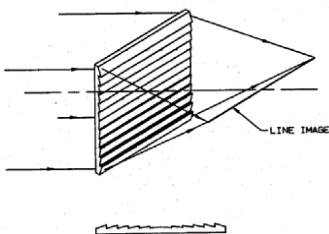
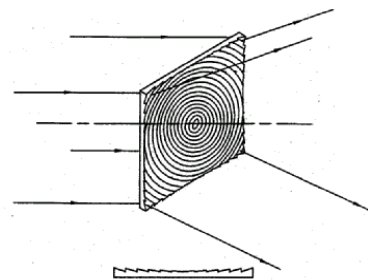


Positive Fresnel Lens

A positive Fresnel lens can be designed as a collimator, collector or with finite conjugates. Fresnel lenses are usually corrected for spherical aberration. They can also be metalized for use as a second surface reflector.

Negative Fresnel Lens

A negative Fresnel lens is the opposite of a positive Fresnel lens with diverging light rays. They can be coated for use as a first surface reflector

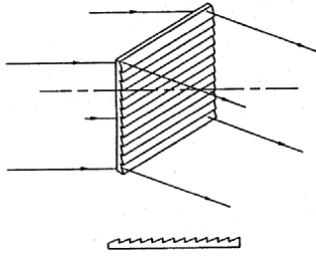


Fresnel Cylindrical Lens

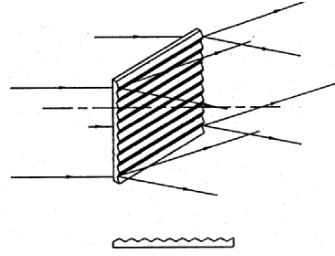
A Fresnel cylindrical lens, also referred to as a linear Fresnel lens, has a linear structure, which can be used to collimate a row of light sources or to focus light in one direction only resulting in a line image.

Fresnel Prisms & Beamsplitters

A Fresnel prism has a linear structure with constant prism and draft angles. It deflects collimated light with a constant deflection angle. A Fresnel beamsplitter also has a linear structure with constant prism and draft angles; however, the two facets of each prism are equal. The light is split into two beams and the included angle between the two beams is referred to as the separation angle.



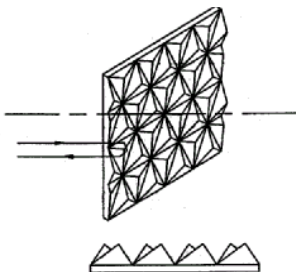
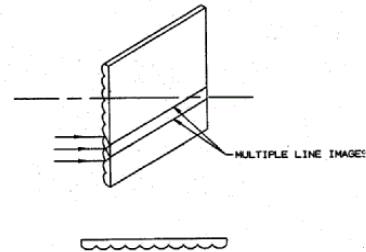
Prism



Beamsplitter

Lenticulars

Lenticulars, also known as linear lens arrays or cylindrical lens arrays, have linear structures where every groove is the same and has a small radius of curvature, thus creating multiple line images.



Corner Cube Retroreflectors

Corner cube retroreflectors are very small, efficient prism reflectors that return light rays toward their source parallel to the incident rays.