

Augustin Fresnel:

And the Advance of Lighthouse Technology

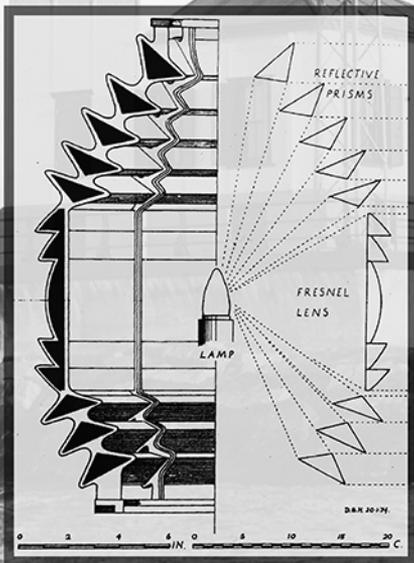


Augustin-Jean Fresnel (1755-1827) was a French physicist who made significant contributions to the science of light and optics. Best known for the lens that bears his name, he served as the Commissioner of French Lighthouses from 1819 until his death.

He studied the theory of light both mathematically and experimentally and was a member of the French Academy of Sciences and the Royal Society of London, but received little public recognition for his work during his lifetime.

The Fresnel Lens, actually a series of standardized lens sizes, is said to be the most significant contribution to lighthouse technology ever made. Today, Fresnel Lens technology is used in everything from illumination to photography, solar power, projection and much, much more.

So, how does it work?



Fresnel's design was based on refraction, or the bending of light through glass. Through a series of circular reflective glass prisms, getting smaller in size as they move toward the center of the lens, light is captured and reflected seaward in a single horizontal direction.

For example, an open flame loses nearly 97% of its light. By placing a refractor behind it, it can project upwards of 17% of the light produced. Placing that same light inside of a Fresnel lens can capture upwards of 83%, making it visible for many miles out to sea.