

# D5FARECTS    The diffraction pattern of a rectangular aperture.

The width in the x-direction is d, in y-direction a.  
One may look at the plot from different angles, change colors  
and make a "Contour Plot".

$$i := 0..N \qquad j := 0..N$$

$$x_i := (-4) + .20001 \cdot i \qquad y_j := -4 + .20001 \cdot j$$

$$\lambda \equiv 4$$

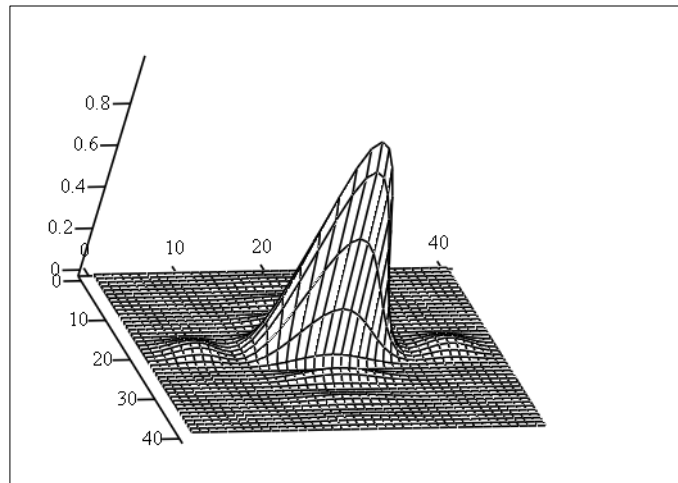
$$f(x,y) := \left[ \frac{\sin\left(2 \cdot \pi \cdot d \cdot \frac{x}{2 \cdot \lambda}\right)}{\left(2 \cdot \pi \cdot d \cdot \frac{x}{2 \cdot \lambda}\right)} \right]^2 \cdot \left[ \frac{\sin\left(2 \cdot \pi \cdot a \cdot \frac{y}{2 \cdot \lambda}\right)}{\left(2 \cdot \pi \cdot a \cdot \frac{y}{2 \cdot \lambda}\right)} \right]^2$$

$$M_{i,j} := f(x_i, y_j)$$

$$N \equiv 40$$

$$d \equiv 4$$

$$a \equiv 2$$



M