$$H_z = A\cos\left(\frac{m\pi}{a}x\right)\cos\left(\frac{n\pi}{b}y\right) \quad z_{TE} = \frac{\mu}{\sqrt{1-\frac{k^2}{k_c^2}}}$$

$$E_z = A\,\mathrm{sen}\left(\frac{m\pi}{a}x\right)\mathrm{sen}\left(\frac{n\pi}{b}y\right) \quad z_{TM} = \mu\sqrt{1-\frac{k_c^2}{k^2}}$$