

Light Diffusing Devices for Use in Photoimmunotherapy

ABSTRACT

The present invention provides a cylindrical light diffusing device
5 comprising a non-circular core fiber having (i) a fiber core that provides a “top
hat” core irradiance distribution; optionally (ii) light blocking means that prevent
frontal light emission from distal end of the non-circular core fiber; and (iii) a light
diffusing section having a diffusing proximal end, a diffusing distal end, and
internal scattering features distributed within the fiber core of the light diffusing
10 section along central axis of the fiber core, wherein the light diffusion section
emits irradiance in a radially symmetric longitudinally “top hat” diffusing
irradiance distribution. The disclosure also provides a device comprising an
optical fiber and a collimation lens assembly that includes a variable aperture
that blocks portions of light outcoupled from the optical fiber thereby allowing
15 only a central portion of the light to exit from the variable aperture resulting in a
flat irradiance distribution.

FIG. 1