

Title (en)

OPTICAL FIBER LIGHT DISTRIBUTION SYSTEM AND METHOD OF MANUFACTURE AND ILLUMINATION

Title (de)

FASEROPTISCHES LICHTVERTEILUNGSSYSTEM UND HERSTELLUNGSVERFAHREN UND BELICHTUNG

Title (fr)

SYSTEME DE DISTRIBUTION DE LUMIERE A FIBRES OPTIQUES ET PROCEDE DE FABRICATION ET D'ILLUMINATION

Publication

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Application

**EP 99904441 A 19990129**

Priority

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Abstract (en)

[origin: WO9939225A1] An optical fiber light distribution system (10) has a first optical fiber and a second optical fiber. The first optical fiber has a side surface, an axis, and a length. The second optical fiber is wrapped about the side surface such that the second optical fiber defines a plurality of wraps (18) about the first optical fiber. The plurality of wraps (18) have a pitch (20a). Pitch (20a) is the distance between corresponding points of adjacent wraps (18) measured parallel to the first optical fiber axis. When light (24) is directed through the first optical fiber, portions of the light are extracted by portions of the second optical fiber that contact the first optical fiber. The lower the pitch of the plurality of wraps (18), the greater the percentage of light extracted into the second optical fiber from the first optical fiber. Further, softer first optical fibers which incur more deformation have increased contact surface with the second optical fiber. The increased contact surface results in an increased percentage of light being extracted into the second optical fiber. Cladding or potting may be used to inhibit light extraction. A process for making the optical fiber distribution system has the step of wrapping the second optical fiber about the first optical fiber. A process for illumination has the step of directing light through the optical fiber light distribution system.

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