

Title (en)
REFLECTING PHOTONIC CONCENTRATOR

Title (de)
REFLEKTIERENDER PHOTONISCHER KONZENTRATOR

Title (fr)
MIROIR PHOTONIQUE REFLECHISSANT

Publication
EP 1886073 A2 20080213 (EN)

Application
EP 06752035 A 20060502

Priority
• US 2006016682 W 20060502
• US 12461505 A 20050506

Abstract (en)
[origin: US2006249143A1] A linearly reflecting trough concentrator that receives spectral energy, preferably visible and near-infrared solar energy spectra, and linearly reflects that energy onto a smaller area on one side of the device, thereby concentrating the energy. The linearly reflecting trough concentrator has the geometry of a single slope-relief interval in a Fresnel lens, and in preferred embodiment comprises an array of heliostatic facets connected continuously to form the base of the trough, a non-imaging focal point where a photonic receiver is located, and a relief surface to connect the heliostatic array to the receiver location. When spectral energy enters the trough at an angle normal to the array's horizontal reference, the concentrator linearly reflects energy to one side of the device where an energy receiver is mounted. The concentrator comprises an array of heliostats oriented according to the negative profile of two interleaved linear Fresnel lens, where the slope of one is the relief of the other. The concentrator reflects energy above and to each side of the device. Optionally using a reflecting projector on one side of the device, energy is then doubly concentrated to the other side. The device offers higher concentration ratios with an equivalent trough depth than prior art reflective trough concentrators. The device requires less depth and offers a lower-profile than prior art reflecting concentrators with the same degree of concentration.

IPC 8 full level
F24S 23/71 (2018.01); **F24S 23/79** (2018.01); **F24S 50/20** (2018.01)

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F24S 23/74 (2018.04 - EP US); **F24S 23/80** (2018.04 - EP US); **G02B 19/0019** (2013.01 - EP US); **G02B 19/0033** (2013.01 - EP US); **G02B 19/0042** (2013.01 - EP US); **F24S 2023/874** (2018.04 - EP US); **Y02E 10/40** (2013.01 - EP US)

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