

【ABSTRACT】

The present disclosure discloses a flat-substrate heating apparatus including a module supporting plate having a plurality of unit module regions formed on an upper surface thereof; a plurality of VCSEL modules having a plurality of VCSEL devices and seated on the unit module regions of the module support plate, respectively; an electric power supplying board placed below the module support plate and configured to supply an electric power to the VCSEL module; and an electrode terminal electrically connecting the VCSEL module and the electric power supplying board while detachably securing them to upper and lower surfaces of the module support plate, wherein the module support plate has a coolant supplying unit formed therein and configured to supply coolant to the VCSEL module.