

This paper presents a flexible printed circuit board (FPCB) actuator-driven micromirror (referred to as FPCB micromirror hereafter)-based laser projection indicator. The device integrates two FPCB micromirrors, one red laser, one green laser, a dichroic laser combiner, and driving/control circuit. It generates and projects red or green static or rotating laser pattern on a remote translucent film to indicate availability, which well solves the wiring problem associated with traditional availability indicators. The FPCB micromirror consists of an FPCB electrostatic rotation parallel plate actuator with a silicon mirror plate bonded on its top. The FPCB micromirror is of much lower cost with much higher surface quality and larger aperture than conventional microelectromechanical systems (MEMS) micromirrors. The model of controlling the FPCB micromirrors to generate a rotating ellipse is derived and the prototype is fabricated and tested.