

ABSTRACT

A projection optical system has eight reflecting mirrors and is adapted to form a reduced image of a first surface on a second surface. The projection optical system has a first imaging catoptric system (G1) for forming an intermediate image of the first surface, and a second imaging catoptric system (G2) for forming an image of the intermediate image on the second surface. The first imaging catoptric system has a first reflecting mirror (M1), a second reflecting mirror (M2), a third reflecting mirror (M3), and a fourth reflecting mirror (M4) in an order of incidence of light from the first surface side. The second imaging catoptric system has a fifth reflecting mirror (M5), a sixth reflecting mirror (M6), a seventh reflecting mirror (M7), and an eighth reflecting mirror (M8) in an order of incidence of light from the first surface side. At least one reflecting surface among the eight reflecting mirrors is comprised of a spherical surface.