

Abstract

A coaxial mask alignment device, photolithography apparatus and alignment method. The coaxial mask alignment device comprises: illumination modules (A, B) providing alignment beams; a projection objective (8) located below a mask (5); a reference plate (9) located on a workpiece table (12) and used for carrying a datum reference mark (10); and an image detection and processing module (11) located below the reference plate (9) and moving with the workpiece table (12), and the datum reference mark (10) being located within the field of view of the image detection and processing module (11). The detection and processing module (11) is used to receive an alignment beam which sequentially passes through mask alignment marks (6, 7), the projection objective (8) and the datum reference mark (10), so as to obtain images of the mask alignment marks (6, 7) and the datum reference mark (10), and to obtain relative position information of the mask alignment marks (6, 7) and the datum reference mark (10) by processing said images, thus aligning the mask (5) and the workpiece table (12). The coaxial mask alignment device adopts independent lighting, a simple structure and convenient operations, thereby improving alignment efficiency.