

LITHOGRAPHIC APPARATUS HAVING AN ACTIVE DAMPING SUBASSEMBLY

ABSTRACT

A lithographic apparatus includes a projection system to project a patterned radiation beam onto a substrate, and a damping system to dampen a vibration of at least part of the projection system, the damping system including an interface damping mass and an active damping subsystem to dampen a vibration of at least part of the interface damping mass, the interface damping mass connected to the projection system, and the active damping subsystem connected to the interface damping mass, the active damping subsystem including a sensor to measure a position quantity of the interface damping mass and an actuator to exert a force on the interface damping mass based on a signal provided by the sensor. The damping system further includes an interface damping device connected to the interface damping mass and configured to damp a movement of the interface damping mass at an eigenfrequency of the interface damping mass.

Figure 1