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ABSTRACT

An ultraviolet laser apparatus according to the present invention comprises a laser generating portion having a single-wavelength oscillating laser for generating
5 laser light having a single wavelength falling within a wavelength range from an infrared band to a visible band, an optical amplifier having a fiber optical amplifier for amplifying the laser light generated by the laser generating portion, and a wavelength converting portion for
10 wavelength-converting the amplified laser light into ultraviolet light by using a non-linear optical crystal, whereby ultraviolet light having a single wavelength is generated.

Further, an exposure apparatus according to the
15 present invention serves to transfer a pattern image of a mask onto a substrate and comprises a light source including a laser apparatus for emitting a laser light having a single wavelength, a first fiber optical amplifier for amplifying the laser light, a light dividing device for
20 dividing or branching the amplified laser light into plural lights, and second fiber optical amplifiers for amplifying the plural divided or branched lights, respectively; and a transmission optical system for transmitting the laser light emitted from the light source to the exposure
25 apparatus.



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