12. The inspection apparatus of claim 1, further comprising at least two mirrors configured to reduce field curvature induced by the catadioptric objective.

13. The inspection apparatus of claim 12, wherein the at least two mirrors comprises four mirrors.

14. The inspection apparatus of claim 12, wherein each mirror of the at least two mirrors has an anamorphic aspheric reflective surface.

15. The inspection apparatus of claim 12, further comprising a refractive element in an optical path between two mirrors of the at least two mirrors.

16. A refractive objective comprising:

a front lens group having front and back meniscus lenses;

a middle lens group having a first doublet, a second doublet, a triplet, and a doublet in order from a front to a back of the refractive objective; and

a back lens group having a negative doublet.

17. The refractive objective of claim 16, wherein:

the triplet of the middle lens group comprises a front positive lens, a middle negative lens, and a back positive lens; and

the back positive lens comprises a heavy flint.

18. An objective system comprising:

a catadioptric objective; and

at least two mirrors configured to reduce field curvature induced by the catadioptric objective.

19. The objective system of claim 18, further comprising a refractive element in an optical path between two mirrors of the at least two mirrors.

20. A lithographic apparatus, comprising:

an illumination optical system arranged to illuminate a pattern;

a projection optical system arranged to project an image of the pattern onto a substrate; and

an inspection apparatus arranged to optically determine dimensional parameters of the substrate, the inspection apparatus comprising,

an illumination system configured to receive a first beam and to produce second and third beams therefrom;

a catadioptric objective configured to direct the second beam to reflect from the substrate;

a first sensor configured to detect a first image created by the reflected second beam;

a refractive objective configured to direct the third beam to reflect from the substrate; and

a second sensor configured to detect a second image created by the reflected third beam.

21. A method of determining substrate parameters, the method comprising:

directing a first beam through a catadioptric objective onto the substrate such that the first beam reflects from the substrate;

forming a first image of the substrate using the reflected first beam;

determining a first parameter of the substrate using the first image;

directing a second beam through a refractive objective onto the substrate such that the second beam reflects from the substrate;

forming a second image of the substrate using the reflected second beam; and

determining a second parameter of the substrate using the second image.

22. The method of claim 21, wherein:

the first parameter is a first critical dimension measurement; and

the second parameter is a second critical dimension measurement.

23. The method of claim 28, further comprising:

forming a third image of the substrate using the reflected second beam; and

determining a third parameter of the substrate using the third image.

24. The method of claim 21, further comprising producing the first and second beams from a third beam.

25. The method of claim 24, wherein producing the first and second beams from the third beam comprises splitting the third beam into the first and second beams using a beam splitter.

12. The inspection apparatus of claim 1, further comprising at least two mirrors configured to reduce field curvature induced by the catadioptric objective.

13. The inspection apparatus of claim 12, wherein the at least two mirrors comprises four mirrors.

14. The inspection apparatus of claim 12, wherein each mirror of the at least two mirrors has an anamorphic aspheric reflective surface.

15. The inspection apparatus of claim 12, further comprising a refractive element in an optical path between two mirrors of the at least two mirrors.

16. A method of optically determining dimensional parameters of a wafer, the method comprising:

directing a first beam through a catadioptric objective onto the wafer such that the first beam reflects from the wafer;

forming a first image of the wafer using the reflected first beam;

determining a first parameter of the wafer using the first image;

directing a second beam through a refractive objective onto the wafer such that the second beam reflects from the wafer;

forming a second image of the wafer using the reflected second beam; and

determining a second parameter of the wafer using the second image.

17. The method of claim 16, wherein:

the first parameter is a first critical dimension measurement; and

the second parameter is a second critical dimension measurement.

18. The method of claim 16, further comprising:

forming a third image of the wafer using the reflected second beam; and

determining a third parameter of the wafer using the third image.

19. The method of claim 16, further comprising producing the first and second beams from a third beam.

20. The method of claim 19, wherein producing the first and second beams from the third beam comprises splitting the third beam into the first and second beams using a beam splitter.