1. An apparatus configured for inspecting component surfaces including component sidewalls, the apparatus comprising:

a set of sidewall illuminators configured to output sidewall illumination;

a set of sidewall beam splitters configured for:

(a) receiving the sidewall illumination output by the set of sidewall illuminators;

(b) transmitting said sidewall illumination output by the set of sidewall illuminators through the set of sidewall beam splitters, such that at least some the sidewall illumination is incident on component sidewalls when a component is positioned within a sidewall inspection area at a sidewall inspection position at which the component sidewalls obstruct at least some optical paths between individual sidewall beam splitters within the set of sidewall beam splitters;

(c) receiving reflected sidewall illumination from component sidewalls when the component is positioned at the sidewall inspection position;

(d) redirecting the reflected sidewall illumination along optical paths corresponding to a lens assembly and an image capture device; and

a processing unit to selectively activate at least one or a combination of

(i) a single or a pair of adjacent or opposing sidewall illuminators for capturing images of one or a pair of adjacent or opposing side walls while the other sidewall illuminators not selected, are in a non-activated state, and

(ii) a distinct and separate center wavelength or bandwidth illumination of individual ones of the sidewall illuminators for capturing

individual images of a selected side wall or simultaneously capturing images of more than one sidewalls of the component side walls.

2. The apparatus of claim 1, wherein the set of sidewall illuminators, the set of sidewall beam splitters and the image capture device is further configured for capturing images of a component bottom surface and/or images of component sidewalls.

3. The apparatus of claim 1, wherein the set of sidewall illuminators includes at least one pair of sidewall illuminators in which two sidewall illuminators are oppositely disposed relative to each other with respect to the sidewall inspection position.

4. The apparatus of claim 1, wherein the set of sidewall beam splitters includes at least one pair of sidewall beam splitters that are oppositely disposed on different sides of the sidewall inspection area relative to an axis defined through the sidewall inspection area.

5. The apparatus of claim 4, wherein the at least one pair of oppositely disposed sidewall beam splitters includes a first sidewall beam splitter and a second sidewall beam splitter, wherein the first sidewall beam splitter is configured for transmitting first sidewall illumination having a first optical wavelength or a first optical bandwidth therethrough and the second sidewall beam splitter is configured for transmitting second sidewall illumination having a distinct second optical wavelength or a second optical bandwidth therethrough, wherein the first sidewall beam splitter is configured for receiving and redirecting each of first reflected sidewall illumination from a first component sidewall and second extraneous sidewall illumination transmitted through the second sidewall beam splitter that has traveled

across the sidewall inspection area, and wherein the second sidewall beam splitter is configured for receiving and redirecting each of second reflected sidewall illumination from a second component sidewall and first extraneous sidewall illumination transmitted through the first sidewall beam splitter that has traveled across the sidewall inspection area.

6. The apparatus of claim 1, wherein

the image capture device configured for

(a) capturing in a single image capture operation a single image comprising a first image region corresponding to the first reflected sidewall illumination and the second extraneous sidewall illumination, and a second image region corresponding to the second reflected sidewall illumination and the first extraneous sidewall illumination, and

(b) generating image data corresponding to the single image; and

the processing unit is further configured for processing the image data such that pixel values corresponding to the second extraneous sidewall illumination are digitally filtered from image data corresponding to the first image region, and pixel values corresponding to the first extraneous sidewall illumination are digitally filtered from image data corresponding to the second image region.

7. The apparatus of claim 1, wherein the set of sidewall illuminators includes a plurality of sidewall illuminators in which

(a) each sidewall illuminator outputs illumination at the same optical center wavelength or bandwidth, or

(b) a first subset of sidewall illuminators outputs illumination having a distinct optical center wavelength or bandwidth relative to illumination output by a second subset of sidewall illuminators.

8. The apparatus of claim 1, wherein particular subsets of sidewall illuminators within the set of sidewall illuminators are selectively activatable for outputting sidewall illumination while other subsets of sidewall illuminators within the set of sidewall illuminators remain inactive.

9. The apparatus of claim 1, wherein the brightfield illuminator and/or darkfield illuminator is configured for selectively directing illumination toward a bottom surface or the bottom surface and sidewalls of a component positioned at the sidewall inspection position, wherein the component sidewalls extend between the bottom surface and a top surface of the component.

10. The apparatus of claim 9, further comprising an image capture beam splitter configured for

(a) receiving illumination output by the brightfield illuminator and passing brightfield illumination therethrough;

(b) receiving reflected brightfield and/or darkfield illumination from the component bottom surface and/or component sidewalls;

(c) receiving reflected sidewall illumination from component sidewalls which has been redirected by the set of sidewall beam splitters; and

(d) redirecting received reflected illumination corresponding to (b) and (c) along optical paths toward a lens assembly.

11. The apparatus of claim 1, wherein the image capture device includes a monochrome image sensor or a color image sensor.

12. The apparatus of claim 11, further comprising a component holder configured for selectively positioning a component at the sidewall inspection position or a bottom-surface-only inspection position at which component obstruction of optical paths between each sidewall beam splitter is avoided.

13. The apparatus of claim 12, wherein the component holder is configured for selectively positioning a component held thereby at multiple sidewall inspection positions within the sidewall inspection area, including a first sidewall inspection position at which a component center point is positioned closer to a first subset of sidewall beam splitters than a distinct second subset of sidewall beam splitters, and a second sidewall inspection position at which the component center point is positioned closer to the second subset of sidewall beam splitters than the first set of sidewall beam splitters.

14. The apparatus of claim 1, wherein the processing unit is configured for selectively positioning the component at one or more inspection positions within the inspection area to capture one or more images of component surfaces by way of the image capture device.

15. A method for component inspection, comprising:

providing a set of sidewall illuminators configured for outputting sidewall illumination at one or more center wavelengths or wavelength ranges;

providing a set of sidewall beam splitters configured for receiving the sidewall illumination output by the set of sidewall illuminators;

disposing a component at a first sidewall inspection position such that component sidewalls at least partially obstruct at least some optical paths between individual sidewall beam splitters within the set of sidewall beam splitters;

directing sidewall illumination output by the set of sidewall illuminators toward component sidewalls by way of passing sidewall illumination received by the set of sidewall beam splitters therethrough;

receiving sidewall illumination output by the set of sidewall beam splitters at a plurality of component sidewalls while the component resides at the first sidewall inspection position;

receiving reflected sidewall illumination from the plurality of component sidewalls at the plurality of sidewall beam splitters;

redirecting reflected sidewall illumination received by the plurality of sidewall beam splitters along optical paths corresponding to a single image capture device; and

selectively activating at least one or a combination of

(i) a single or a pair of adjacent or opposing sidewall illuminators for capturing images of one or a pair of adjacent or opposing side walls while the other sidewall illuminators not selected, are in a non-activated state, and

(ii) a distinct and separate center wavelength or bandwidth illumination of individual ones of the sidewall illuminators for capturing

individual images of a selected side wall or simultaneously capturing images of more than one sidewalls of the component side walls.

16. The method of claim 15, further comprising selectively directing sidewall illumination toward a first subset of component sidewalls while avoiding directing sidewall illumination toward a second subset of component sidewalls during a first image capture operation.

17. The method of claim 16, further comprising selectively directing sidewall illumination toward the second subset of component sidewalls while avoiding directing sidewall illumination toward the first subset of component sidewalls during a second image capture operation.

18. The method of claim 15, further comprising:

capturing a first image including pixel regions corresponding to a first subset of component sidewalls; and

capturing a second image including pixel regions corresponding to a second subset of component sidewalls.

19. The method of claim 18, further comprising creating a composite image by way of digitally stitching together portions of the first image corresponding to the first subset of component sidewalls and portions of the second image corresponding to the second subset of component sidewalls.

20. The method of claim 18, wherein capturing the first image occurs while the component is disposed at the first sidewall inspection position within a sidewall inspection area definable between the set of sidewall beam splitters, and capturing the second image occurs while the component is disposed at a distinct second sidewall inspection position within the sidewall inspection area.

21. The method of claim 20, wherein a center point of the component is closer to a first subset of sidewall beam splitters when the component is disposed at the first sidewall inspection position, and the center point of the component is closer to a distinct second subset of sidewall beam splitters when the component is disposed at the second sidewall inspection position.

22. The method of claim 15, wherein the sidewall illumination comprises first sidewall illumination and second sidewall illumination, and the reflected sidewall illumination comprises first reflected sidewall illumination and second reflected sidewall illumination, and wherein the first sidewall illumination and the second sidewall illumination exhibit different bandwidth limited optical wavelength ranges, and/or the first reflected sidewall illumination and the second reflected sidewall illumination exhibit different bandwidth limited optical wavelength ranges.

23. The method of claim 22, further comprising capturing as a single view an image including a plurality of distinct pixel regions, each pixel region corresponding to a distinct component sidewall, each pixel region corresponding to one of at least two distinct bandwidth limited optical wavelength ranges.

24. The method of claim 23, further comprising performing a wavelength segregated calibration procedure prior to capturing the image, the wavelength segregated calibration procedure determining at least one calibration factor that can be applied to a pixel region corresponding to a particular component sidewall to effectively eliminate an effect of extraneous sidewall illumination in the captured image.

25. The method of claim 15, further comprising:

capturing at least one image including pixel regions corresponding to at least two component sidewalls while the component resides at the sidewall inspection position;

displacing the component to a bottom-surface-only inspection position at which component obstruction of optical paths between each sidewall beam splitter is avoided;

directing brightfield and/or darkfield illumination toward a bottom surface of the component while the component resides at the bottom-surface-only inspection position; and

capturing an image corresponding to the bottom surface of the component.

26. A method for inspecting a component having a plurality of sidewalls including a first component sidewall and a second component sidewall that face an opposite direction relative to each other along a first axis, the method comprising:

positioning the component at a sidewall inspection position within a sidewall inspection area between a plurality of sidewall beam splitters including a first sidewall beam splitter and a second sidewall beam splitter that are disposed on opposite sides of the sidewall inspection area along the first axis;

simultaneously transmitting sidewall illumination through the plurality of sidewall beam splitters such that the first component sidewall and the second component sidewall receive first incident sidewall illumination and second incident sidewall illumination thereon, respectively, at different optical center wavelengths or different optical bandwidths;

receiving at the first sidewall beam splitter

(a) first reflected sidewall illumination traveling away from the first component sidewall after first incident sidewall illumination arrival thereon and reflection therefrom, and

(b) second extraneous sidewall illumination that has been transmitted through the second sidewall beam splitter across the sidewall inspection area;

receiving at the second sidewall beam splitter

(c) second reflected sidewall illumination traveling away from the second component sidewall after second incident sidewall illumination arrival upon and reflection therefrom, and

(d) first extraneous sidewall illumination that has been transmitted through the first sidewall beam splitter across the sidewall inspection area;

redirecting each of the first reflected sidewall illumination, the second extraneous sidewall illumination, the second reflected sidewall illumination, and the first extraneous sidewall illumination toward a single image capture device;

capturing in a single image capture operation as a single image the first reflected sidewall illumination and the second extraneous sidewall illumination as a first region of the single image, and the second reflected sidewall illumination and the first extraneous sidewall illumination as a second region of the single image;

generating image data corresponding to the single image; and

processing the image data to digitally filter pixel values corresponding to the second extraneous sidewall illumination from the first region of the single image, and the first extraneous sidewall illumination from the second region of the single image.

27. The apparatus of claim 1, wherein the captured images of the selected individual illuminated side walls or images of more than one sidewalls are compared relative to each other to eliminate the effects of extraneous sidewall illumination.

28. The apparatus of claim 27, wherein comparing the captured images relative to each other comprising detecting and/or determining the magnitude of an effect for defect and/or image compensation.