fract a particular spectral component of light to a particular diffraction order, and the one or more further diffraction gratings are configured to diffract the particular spectral component of light to a diffraction order that is opposite to the particular diffraction order.

5. An apparatus as claimed in claim **1**, wherein the at least one color separation diffraction grating is configured to direct a first spectral component of light to a zeroth order, a second spectral component of light to a positive first order and a third spectral component of light to a negative first order.

6. An apparatus as claimed in claim **5**, wherein the one or more further diffraction gratings are configured to direct the second spectral component of light to a negative first order and the third spectral component of light to a positive first order.

7. An apparatus as claimed in claim **1**, wherein each dispersion compensated spectral component of light consists of light from the same image capture region.

8. An apparatus as claimed in claim **1**, wherein the at least one color separation diffraction grating is at least one in-coupling grating of a body and at least one of the one or more further diffraction gratings is an out-coupling grating of the body.

9. An apparatus as claimed in claim **8**, wherein the body is a light guide configured to cause at least one spectral component of light to reflect internally within the body.

10. An apparatus as claimed in claim **1**, wherein the one or more further diffraction gratings consists of a single color separation diffraction grating.

11. An apparatus as claimed in claim **1**, wherein the one or more further diffraction gratings comprise one or more blazed gratings and/or one or more slanted gratings.

12. An apparatus as claimed in claim **1**, further comprising optics configured to collimate light towards the at least one color separation diffraction grating.

13. An apparatus as claimed in claim **1**, wherein the one or more image sensors is a plurality of image sensors.

14. An apparatus as claimed in claim **13**, further comprising: optics configured to focus light onto each image sensor.

15. An apparatus as claimed in claim **13**, wherein at least two image sensors are positioned to detect at least two different dispersion compensated spectral components of light.

16. An electronic device comprising a display and the apparatus as claimed in claim **1**.

17. A method, comprising:

diffracting different spectral components of incident light in different directions;

at least partially compensating for dispersion in one or more of the different spectral components of light; and

detecting the one or more dispersion compensated spectral components of light.

18. A method as claimed in claim **17**, wherein different spectral components of incident light are diffracted to different diffraction orders.

19. An apparatus as claimed in claim **18**, wherein a particular spectral component of light is diffracted to a particular diffraction order, and subsequently the particular spectral component of light is diffracted to a diffraction order that is opposite to the particular diffraction order.

20. A method as claimed in claim **17**, wherein at least one color separation diffraction grating is used to diffract the different spectral components of incident light in different directions.

21. A method as claimed in claim **20**, wherein the at least one color separation diffraction grating is configured to change the propagation direction of at least one spectral component of light in at least a first dimension.

22. A method as claimed in claim **20**, wherein the at least one color separation diffraction grating is configured to direct a first spectral component of light to a zeroth order, a second spectral component of light to a positive first order, and a third spectral component of light to a negative first order.

23. A method as claimed in claim **17**, wherein one or more further diffraction gratings is used to at least partially compensate for dispersion in one or more of the different spectral components of light.

24. A method as claimed in claim **23**, wherein the one or more further diffraction gratings changes the propagation direction of at least one spectral component of light.

25. A method as claimed in claim **23**, wherein the one or more further diffraction gratings consists of a single color separation diffraction grating.

26. A method as claimed in claim **23**, wherein the one or more further diffraction gratings comprise one or more blazed gratings and/or one or more slanted gratings.

27. A method as claimed in claim **17**, wherein each dispersion compensated spectral component of light consists of light from the same image capture region.

28. A method as claimed in claim **17**, wherein the one or more dispersion compensated spectral components of light are detected by one or more image sensors.

29. A method as claimed in claim **28**, wherein the one or more image sensors is a plurality of image sensors.

30. A method as claimed in claim **29**, wherein at least two image sensors are positioned to detect at least two different dispersion compensated spectral components of light.

31. An apparatus comprising means for performing the method as claimed in claim **17**.

32. An apparatus, comprising:

means for diffracting different spectral components of incident light in different directions; means for at least partially compensating for dispersion in one or more of the different spectral components of light; and

means for detecting the one or more dispersion compensated spectral components of light.

33. An apparatus as claimed in claim **32**, wherein the means for diffracting different spectral components of incident light in different directions is at least one color separation diffraction grating, the means for at least partially compensating for dispersion in one or more of the different spectral components of light is one or more further diffraction gratings; and the means for detecting the one or more dispersion compensated spectral components of light is one or more image sensors.

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