distinguish the specular highlights. Since most substrates become fairly dark in ultraviolet light, the use of an additional light source of ultraviolet light can be used to distinguish the spectral highlights. Similarly, since most substrates become very light in infrared light, an additional light source of infrared light can be used to distinguish shadows. Accordingly, different combinations of light sources can be used according to the present invention.

In addition, a mirror can be used as a light source by redirecting light from one or more other light sources. For example, FIG. **10** illustrates an embodiment with similar components to those in FIG. **1**, but that captures data from a substrate that is a reflective medium **12** using a mirror **27** as a second light source. Controller **48** directs light from a first light source **26** to mirror **27**. Two shutters **25** control the illumination from first light source **26** and mirror **27** to permit the capture of two digital images from different positions.

It will also be appreciated that more than two light sources can be used and will be preferred in accordance with certain applications and hardware configurations. With other applications and hardware configurations, more than two lights may be useful. For example, FIG. **11** illustrates an arrangement of three light sources **262**, **264**, and **266**, used with a drum scanner **268**. With such an arrangement, the present invention teaches the usefulness of placing the three light sources at angles of approximately 120° from each other. In this arrangement, the maxima and minima of all three light sources for a given pixel can be used to determine the difference that will be used for identification of a defect. FIG. **12** illustrates another arrangement of four light sources used in a flatbed scanner **22** configuration. In this embodiment, the present invention teaches the usefulness of placing the four light sources, **272**, **274**, **276** and **278**, at angles of substantially 90° from each other. In this arrangement, the maxima and minima of all four light sources for a given pixel can be used to determine the difference that will be used for identification of a defect. As will be appreciated, having light from different angles will increase the accuracy of the detected borders of a particular defect. Other light source configurations can also be used with still larger numbers of light sources.

It will also be appreciated that a single light source can also be used to provide illumination from multiple directions by relatively re-positioning scanner **16** elements (in FIG. **1**) and/or by adding one or more sensors. Moving the single light source to a different position in such a way makes it virtually a second light source.

It will be also appreciated that where a different image-capturing device or device configuration than line scanner **16** is utilized, relative repositioning of the device elements might be conducted in a substantially different manner consistent with the device and/or application. For example, a particular image-capturing device might operate more effectively through movement of a single element or a different element grouping, such as platen **22** and/or a source medium (e.g., document **12**). A given device might further utilize one light source or more than two light sources, as discussed above. A given application might further benefit from capturing a different image portion (e.g., pixel, grouping of pixels, lengthwise partial line, etc.), among other examples. Therefore, while reference might be made herein to "movement" of one or more specific system elements and/or in a particular manner, any such references includes any relative re-positioning of applicable elements whereby capturing is provided in a manner consistent with the teachings herein. Mechanisms for moving a document, platen, sensor, mirror or combination of elements in one or more directions, for example, are well known in the art of copiers, printers, scanners, facsimile machines and other devices.

It will be apparent to those skilled in the art that variations of data-processing system **18** (FIGS. **1** and **2**) can be made, and that the embodiments mentioned herein are considered representative. For example, many elements, such as data-processing system **18** (and/or its component elements), can be implemented in software, hardware or a combination of both. Another example is that such processing-system alternatives as multiple systems, CPUs, dedicated microprocessors, and/or digital signal processors ("DSPs") among others, might be used. A further example is that sources of image data other than or in addition to an image-capturing system (e.g., stored images, transferred images and/or processed data) can be utilized. Communications interface **70** (as seen in FIG. **2**) can still further comprise any number of wired and/or wireless connections to a local and/or wide area network, the Internet and/or other connectable devices and/or systems. Such connections enable a vast array of data transfer, sharing, workload distribution, downloadable code and/or data, and other capabilities, as are continuously being introduced, advanced and more widely adopted. Various input and output devices can also be used; however, output devices preferably include an image printer and at least one image viewing device, such as a CRT and/or flat panel display. Still further, various operating systems and data-processing systems can be utilized. In one embodiment, a conventional multitasking operating system such as Windows 95 or Windows NT running on a computer with a Pentium II processor, is presumed for the discussion herein.

Although the present invention has been described in detail with reference to the preferred embodiments thereof, those skilled in the art will appreciate that various other substitutions and modifications can be made to the examples described herein while remaining within the spirit and scope of the invention as defined in the appended claims.

What is claimed is:

1. An imaging system comprising:

a first light source operable to illuminate an image plane in a first direction;

a second light source operable to illuminate the image plane from a second direction;

a third light source operable to illuminate the image plane;

a sensing device operable to detect light from the first light source, the second light source, and the third light source that interacted with and impinges the image plane; and,

a processor operable to receive information from the sensing device and determine an image and image defects.

2. The system of claim **1**, wherein the first and second light source are fluorescent light sources.

3. The system of claim **1**, wherein one of the light sources is an infrared light source.

4. The system of claim **1**, wherein one of the light sources is an ultraviolet light source.

5. The system of claim **1**, wherein the first light source is set at a predetermined angle between 30 and 70 degrees from an image plane and the second light source is set at a predetermined angle between 110 and 150 degrees from an image plane.

6. The system of claim **1**, wherein the image plane comprises a document.