Photocells

When exposed to light, photocells create an electric charge that is proportional to the amount of incident light. After an exposure, these electric charges are read out and passed on as brightness values in an electronic raster image.

While a photodiode is often referred to as a pixel (short form of 'picture element'), this can easily lead to confusion, as a pixel on the sensor is not the same as a pixel in the output image. Cameras with a 3-chip imager create one pixel from the combined output of three photocells. The Panavision Genesis, a single-chip camera, creates its pixel from a group of 3x2 photocells (see image, macro cell). The D-21 uses 2880x1620 photocells to create an HD image with 1920x1080 pixel, which means one pixel is created from the output of 1.5 photocells.