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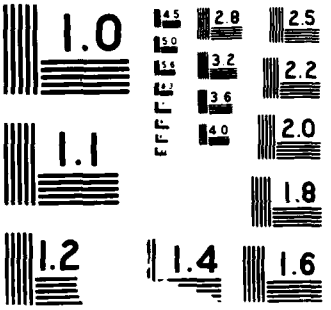
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The operational characteristics of several new solid state array detectors investigat in our laboratories have shown themselves to be highly suitable for application in analyti spectroscopy. The devices investigated to date are selected charge-coupled devices (CCDs) and charge injection devices (CIDs), each of which has certain unique capabilities which c be exploited for solving a variety of spectroscopic problems. Readout speed consideration when using sequential, pseudo-random, random, binning, and rapid scanning readout modes wi be discussed. Optoelectronic characteristics of these devices including dynamic range, quantum efficiency, noise, resistance to blooming and lag will be contrasted to photodiode arrays, vidicons, and photomultiplier tubes.

Several optical configurations for array detector spectrometers which effectively uti ize the various device geometries including the latest generation echelle configuration wi be presented. Design considerations including resolution, spectral coverage, detector element size, stray light, and image reduction will be discussed.

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by

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