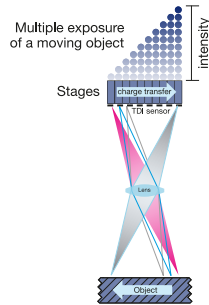


## TDI LINE SCAN CAMERAS

Time Delayed Integration line scan cameras are designed for applications where faster line rates and higher sensitivity are critical, e.g. in low light conditions. With high speed (100 kHz line rates) and high sensitivity (up to 256×), this TDI technology is ideal for demanding applications such as flat panel display inspection, wafer inspection, printed circuit board inspection and high-performance document scanning.



### TDI WORKING PRINCIPLE

The principle of TDI technology is based on the time-shifted multiple exposure of a moving object. The sensor is composed of up to 256 line sensors arranged in parallel.

At the end of one exposure period, the accumulated charges in that line sensor are shifted to the next line. During the next exposure period, new charges are acquired, added to the already existing shifted charges and the new sum is again shifted to the next line. Finally, after 256 exposures, the accumulated sum of all lines is output from line 256 as a video signal.

By synchronous transport of a scanned object across the field of the camera, a 256-fold multiple exposure is produced. For each exposure period, the object has moved far enough that the next sensor line is not only ready for exposure but has also already been filled with the accumulated charges from the previous sensor lines

This is a printout of the page <https://sukhamburg.com/support/technotes/linescancamera/tdi.html> from 7/8/2025

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