

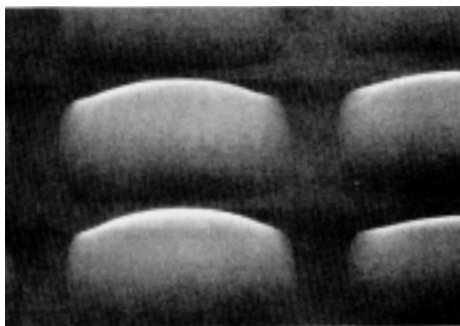
## CCD imager sensitivity improvement.....On-chip micro lens

CCD technology has been moving at a very fast pace and size reduction and high density pixel design is the name of the game. However, when pixel size decreases, the trade-off is sensitivity because the photosensitive diode size is smaller. In order to overcome this problem, the ON-CHIP LENS was developed.

PULNiX has been using these latest technology chips in various types of CCD cameras such as the TMC-514, TMC-516, TM-7, TM-6 series. The TMC-74, TMC-76, TM-745E, TM-765E series of cameras are in the process of being upgraded to the new technology.

CCD processing technology has improved the fill factor, anti-blooming characteristics, smearing, S/N ratio, dynamic range and sensitivity. Only the optical area remained with old fashioned technology. These CCD chips improve light-gathering efficiency on the pixel by using very small individual lenses on top of the silicon chip.

Clear resin is coated on the CCD surface. With thermal treatment it creates a lens by itself through surface tension. Such micro lenses provide 4 to 8 dB of sensitivity increase.



PULNiX cameras which use on-chip micro lens CCD's are called the "BL version".

TM-7CN/TM-6CN	All models (not marked as BL)
TM-7 / TM-6.....	All models (not marked as BL)
TMC514/TMC-516...	All models BL except prototypes
TM-745E/TM-765E..	Will be changed to BL models Oct.90
TMC-74/TMC-76	Will be changed to BL models.Oct.90

### Sensitivity comparison

TM-745E -AL( standard ) vs TM-745E-BL ( on-chip lens)

Camera body gain is exactly the same. F=5.6, AGC=OFF, GAMMA= 1

