



FACE RECOGNITION AND 3D IMAGING

Thin film production solutions for
mass market consumer applications

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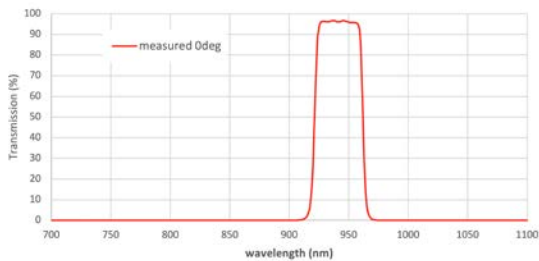
Combining thin film process know how and control capabilities from the high precision optics industry with precise wafer handling and system automation technology from the semiconductor industry brings the perfect mass production solution for consumer applications.

OUR SMART DEVICES ARE GETTING EVEN SMARTER

Thin film manufacturing technologies for the cameras, proximity and ambient light sensor technologies in our smart phones are already well established. However, Face Recognition and 3D Imaging pose greater challenges for optical thin film technology due to their even higher film specifications, more demanding yield requirements and all at ever decreasing production costs.

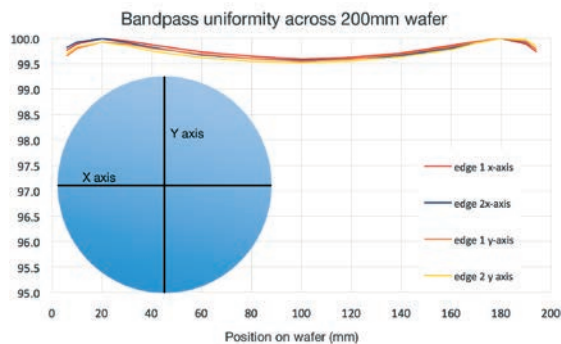
THE THIN FILM PROCESS REQUIREMENTS ARE CHALLENGING

Typical bandpass filter with backside AR coating



Typical production requirements

1. Wafer in wafer uniformity performance on 8 inch substrates $< \pm 0.25\%$
2. Edge repeatability $< \pm 0.25\%$

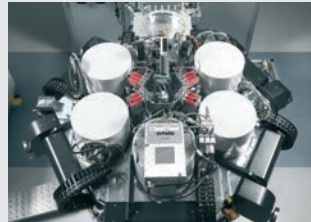


CLUSTERLINE® RAD IS THE SOLUTION

Evatec's CLUSTERLINE® RAD platform and process know how delivers the spectral accuracy and repeatabilities required for deposition of typical NIR bandpass filters for 6 and 8 inch substrates in a fully automated cassette to cassette production platform.



Twin cassette front end for best production performance



Up to 4 sputter sources plus plasma source for high rate deposition



Simultaneous processing of 15 x 8 inch wafers for enhanced throughput

CLUSTERLINE® RAD KEY CAPABILITIES

Rotating Cathode Sources

Shaperless uniformity adjustment avoids particles

PEM: Plasma Emission Monitoring

Best stoichiometry for reactive processes at the highest rate

GSM optical monitoring + re-optimization

Outstanding thickness reproducibility and accuracy

Automatic substrate loading

Maximum tool usage, low operator interaction

Automatic flip mechanism

Seamless deposition of coatings on front and backside without vacuum break



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