

Reflectivity and Ellipsometry Scatterometry Studies of Diffraction Gratings

Three grating were examined.

name	type	grooves/mm
r1440	reflection (metallic)	1440
r360	reflection (metallic)	360
t600	transmission (dielectric)	600

Measurement of the specular intensity reflectivities R_p and R_s for p and s polarized light were made as a function of angle of incidence, and compared with measurements of the corresponding specular ellipticity parameters (x, y) which are closely related to the $Re(r)$ and $Im(r)$.

The pattern-dependent scatterometry features show clear resonances when the angular variations are displayed as the locii of y versus x. R_p and R_s show less-obvious correlation. Ellipticity features usually occur with sizeable changes in x, y but with very small values of the intensity reflectivities.







