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MULTIPLE DATA LAYER OPTICAL DISK DRIVE SYSTEM WITH FIXED ABERRATION CORRECTION AND OPTIMUM INTERLAYER SPACING

ABSTRACT

A multiple data layer optical disk drive system (10) has fixed aberration correction and uses a disk (12) with maximum interlayer spacing for reduced interlayer crosstalk. The disk (12) is designed to operate with a lens (210) that has spherical aberration correction to compensate for the larger thickness of a conventional single data layer disk. This allows the system (10) to be backward compatible and thus handle both multiple and conventional single data layer disks. The focused light spot with minimum spherical aberration is thus located at the middle of the spacer layer (44) rather than on the first data layer (52). The spacer layer (44) thickness is selected so that when the focused spot is located on either the first (42) or last (62) data layer there is some deliberately designed spherical aberration. Thus the thickness of the spacer layer can be increased and interlayer crosstalk reduced.

Fig. 2.