

Keratometry OD 41.50/41.75 x 107 clear mires, OS 42.25/42.62 x 90 clear mires

Pupil diameter in dark room with pupilscan OD 6.4mm OS 6.5 mm

Pachymetry OD .46 mm OS .48 mm

Slit lamp examination—clear corneas with well-healed LASIK flaps OU, normal pupils, no afferent pupil defect, lens shows faint trace nuclear sclerosis in the posterior half of the lens nucleus while the anterior half is clear

Fundus examination with pupils dilated, both direct and indirect reveals hypoplastic optic nerves with essentially no cup and no obvious pallor OU, prominent temporal peripapillary atrophy and temporal displacement of macula OU

Humphrey Topography shows relatively small but well centered ablations in both eyes with the lower end of the ablation at the edge of the photopic pupil of about 3 mm. The corneal irregularity measurements are increased to 2.63 OD and 2.49 OS (normal up to 1.5) copy enclosed

Wavescan readings with the Alcon Humphrey System are included. These were performed with normal lighting with pupils of 4.59 mmOD and 4.23mm OS and again with pupils dilated to more closely simulate night conditions when the pupils were 7.6mm OD and 7.4mm OS. The defocus and astigmatism readings with the smaller pupil are quite normal and agree with the minor residual refractive error in both eyes. Both of these values increase with larger pupils because the unablated area of the cornea is measured and this simply reflects the relatively small ablation diameters. The most common aberrations following LASIK are Coma and Spherical Aberration and these values are acceptably low with pupils of about 4.5 mm. For example the spherical aberration for OD is 0.38 OD and 0.16 OS. When the pupils are dilated simulating night conditions, spherical aberration increases to 2.33 OD and 1.72 OS. This represents almost a six-fold increase for OD and a tenfold increase for OS.

Comment: Mr. Morgan has been examined by several highly qualified experts since his LASIK surgery in an attempt to explain the decrease in his best-corrected visual acuity. The possible mechanisms include retinal damage, optic nerve damage, a combination of both; optical problems related to positive angle kappa and an ablation centered over the pupil, and early cataract changes. Based on my examination, I attribute his loss of vision to a combination of all except the cataract. I do not feel the minimal lens opacity is sufficient to explain his loss of vision. This would not explain why his vision became worse immediately after the surgery in both eyes. Dr. Guyton suggested the minimal cataracts as a possible explanation in June of 2000 and suggested that if the cataracts were at fault we would expect to see progression in the lens changes and further decrease in his visual acuity. It is almost 2 years since that exam and today, his visual acuity was better than the 20/125 recorded by Dr. Guyton and the lens changes are still minimal so this goes against the thought that the cataracts are at fault.