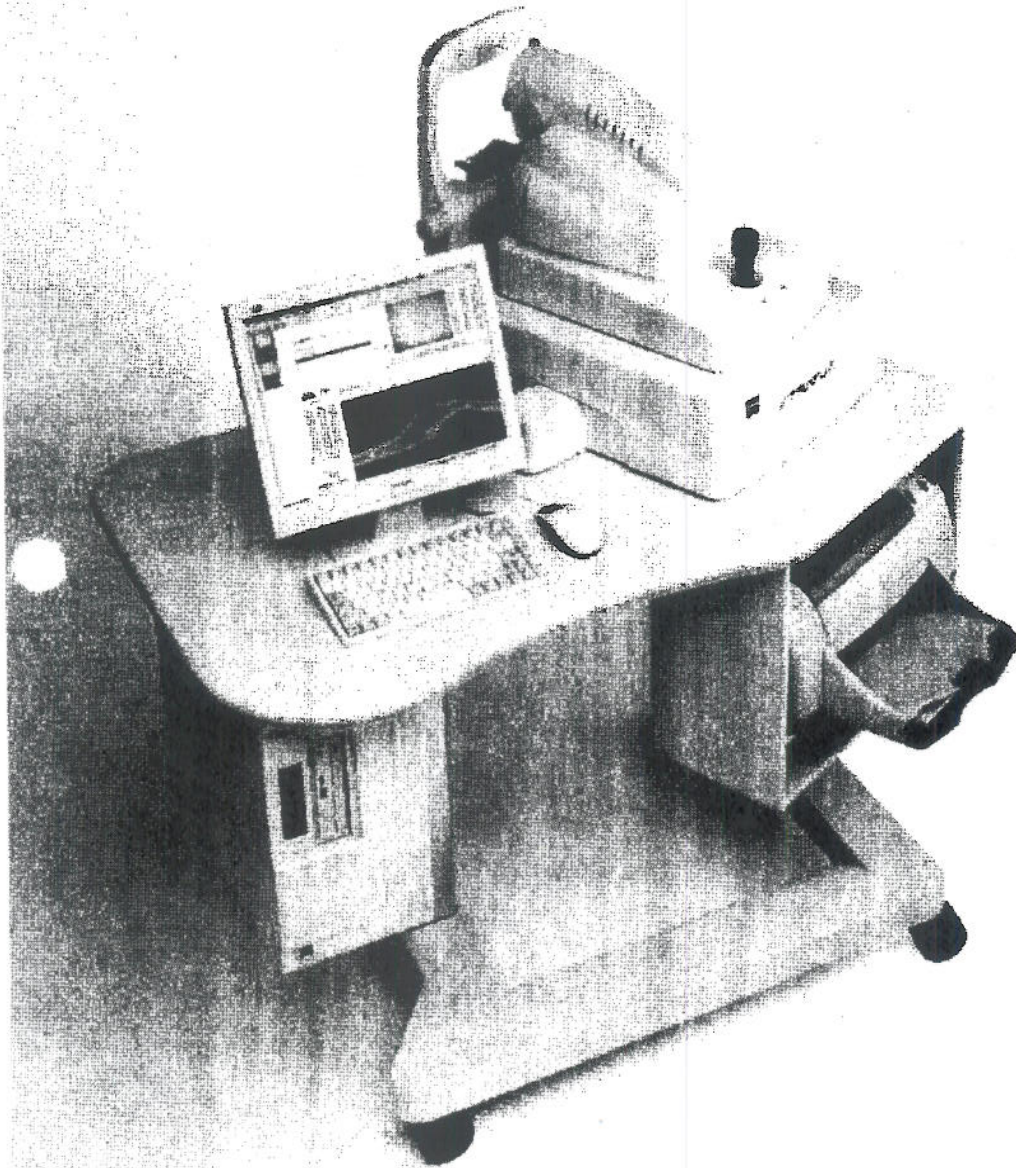


*Optical Coherence Tomography Imaging System*

**Stratus OCT™** with Software Version 5.0

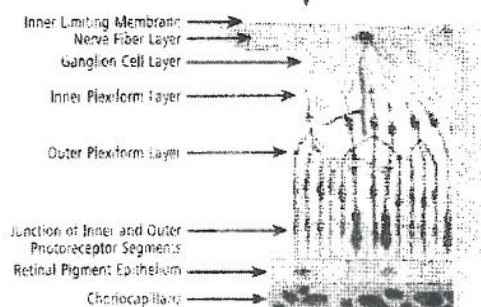
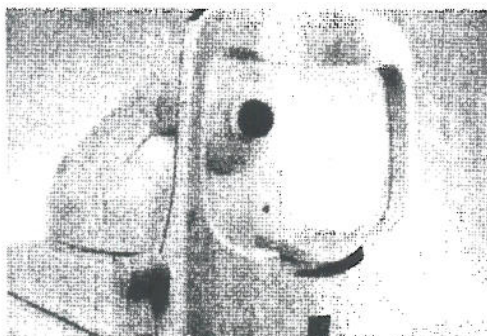
**Real Answers in Real Time**



*Handwritten signature or logo*



# Stratus OCT™ The standard of care system for comprehensive retina and glaucoma management.



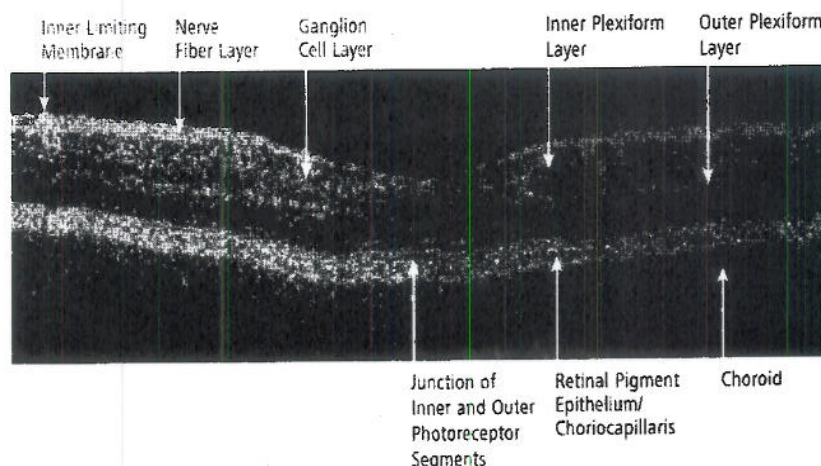
**Visualize virtual histology.** High resolution cross-sectional imaging for the comprehensive management of glaucoma and retinal disease.

**Assess RNFL change.** GPA Advanced Serial Analysis reports statistically significant change and rate of change in RNFL thickness.

**Expand your clinical confidence.** Most extensive library of clinical studies in the industry and over 8000 systems installed worldwide.

**Offer comprehensive care.** Valuable for pre- and post-op cataract patients to identify and illustrate cause of poor vision.

**Increase practice productivity.** Operate the full analysis capabilities from the lane, your office or a remote location.

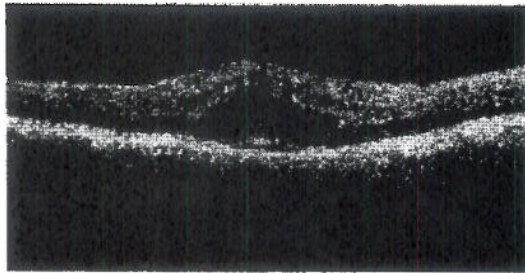


In the Stratus OCT image display, retinal layers with the highest reflectivity appear red. In a healthy retina, these include the nerve fiber layer, retinal pigment epithelium and choriocapillaris. The layers that exhibit minimal reflectivity appear blue or black, such as the photoreceptor layer, choroid, vitreous fluid or blood.

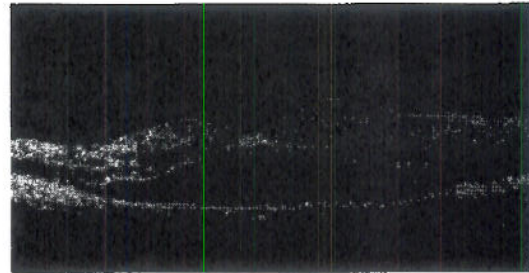


## Obtain real-time non-invasive histology of live tissue

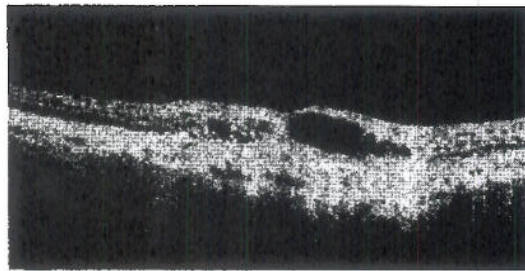
Stratus OCT reveals the retinal layers in high-resolution, cross-sectional views, offering insight for diagnosis, therapy and ongoing management of retinal disorders.



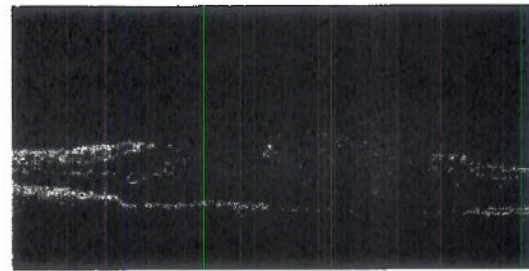
Cystoid Macular Edema



Central Serous Chorioretinopathy



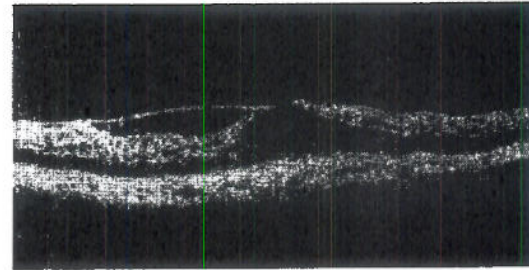
Age-related Macular Degeneration  
with Overlying Cystoid Macular Edema



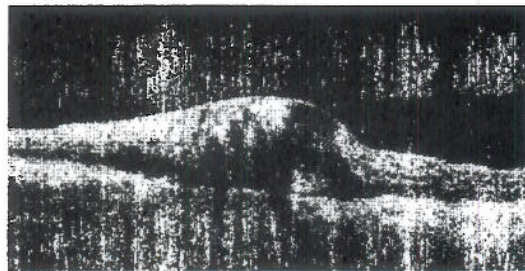
Macular Hole with Operculum



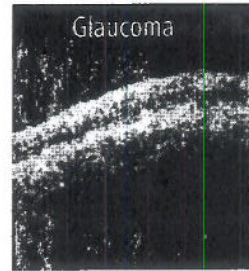
Diabetic Macular Edema



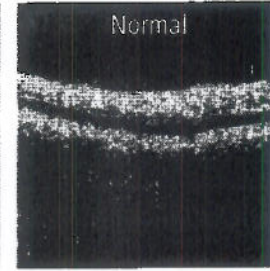
Epiretinal Membrane with Lamellar Hole  
and Cystoid Macular Edema



Branch Retinal Vein Occlusion

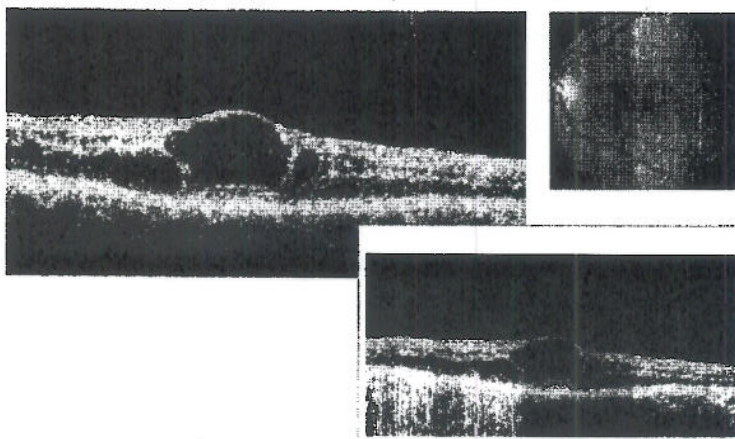


RNFL Loss



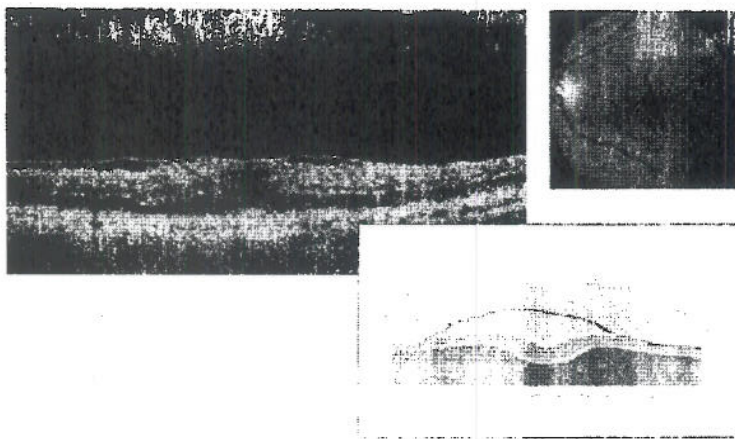
Normal

# Visualize and analyze retinal disorders



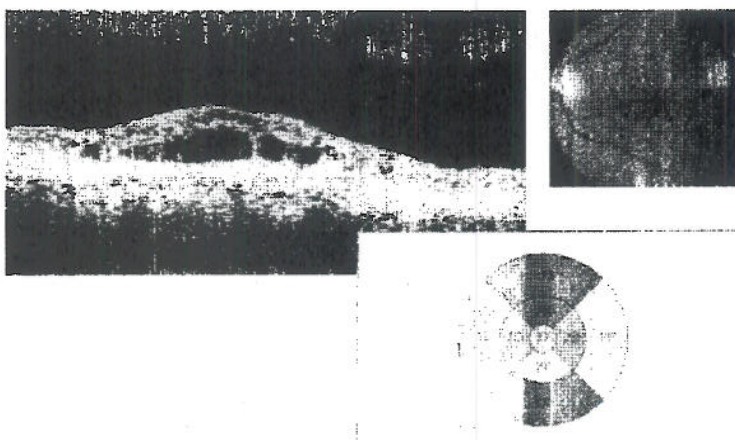
## Diabetic Retinopathy

- Stratus OCT reveals and measures diffuse macular thickening and loss of foveal contour
- Intraretinal cysts and fluid accumulation are identifiable as areas of low reflectivity in the cross-sectional scan
- Post-treatment resolution of retinal thickening can be quantified and monitored



## Epiretinal Membrane

- Stratus OCT scan shows the epiretinal membrane as a highly reflective band on the inner retinal surface
- Separation of the membrane from the retina is visible in areas
- Underlying retina is thickened, with loss of normal foveal contour

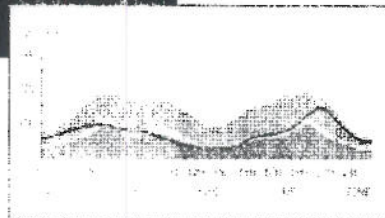
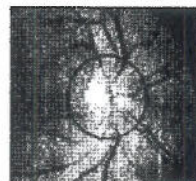
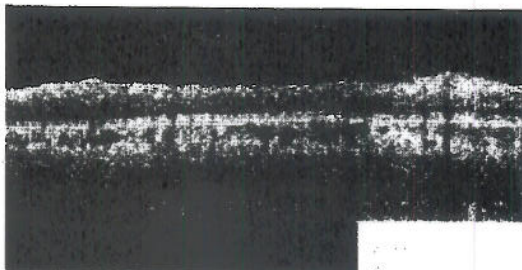


## Age-related Macular Degeneration

- Disruption of RPE, caused by neovascularization and drusen, can be visualized
- Pockets of interretinal fluid are visible as areas of reduced reflectivity
- Structural changes resulting from therapy can be quantified and monitored

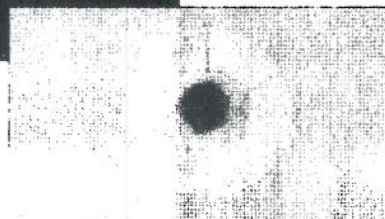
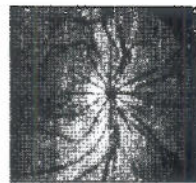


# Detect glaucoma damage at an earlier stage



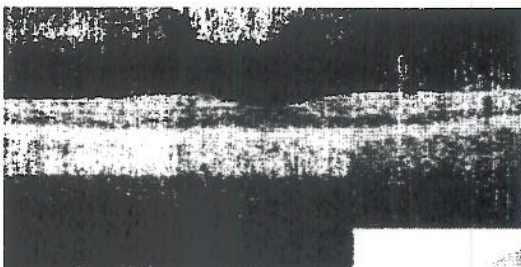
## Retinal Nerve Fiber Layer Analysis

- Analysis of RNFL aids in identification of early glaucomatous loss
- Circular scans of 3.4 mm diameter around optic nerve head provide measurement of RNFL in the peripapillary region
- RNFL thickness measurement is graphed in a TSNIT orientation and compared to age-matched normative data



## Optic Nerve Head Analysis

- Radial line scans through optic disc provide cross-sectional information on cupping and neuroretinal rim area
- Disc margins are objectively identified using signal from end of RPE
- Key parameters include cup-to-disc ratio and horizontal integrated rim volume<sup>1</sup>



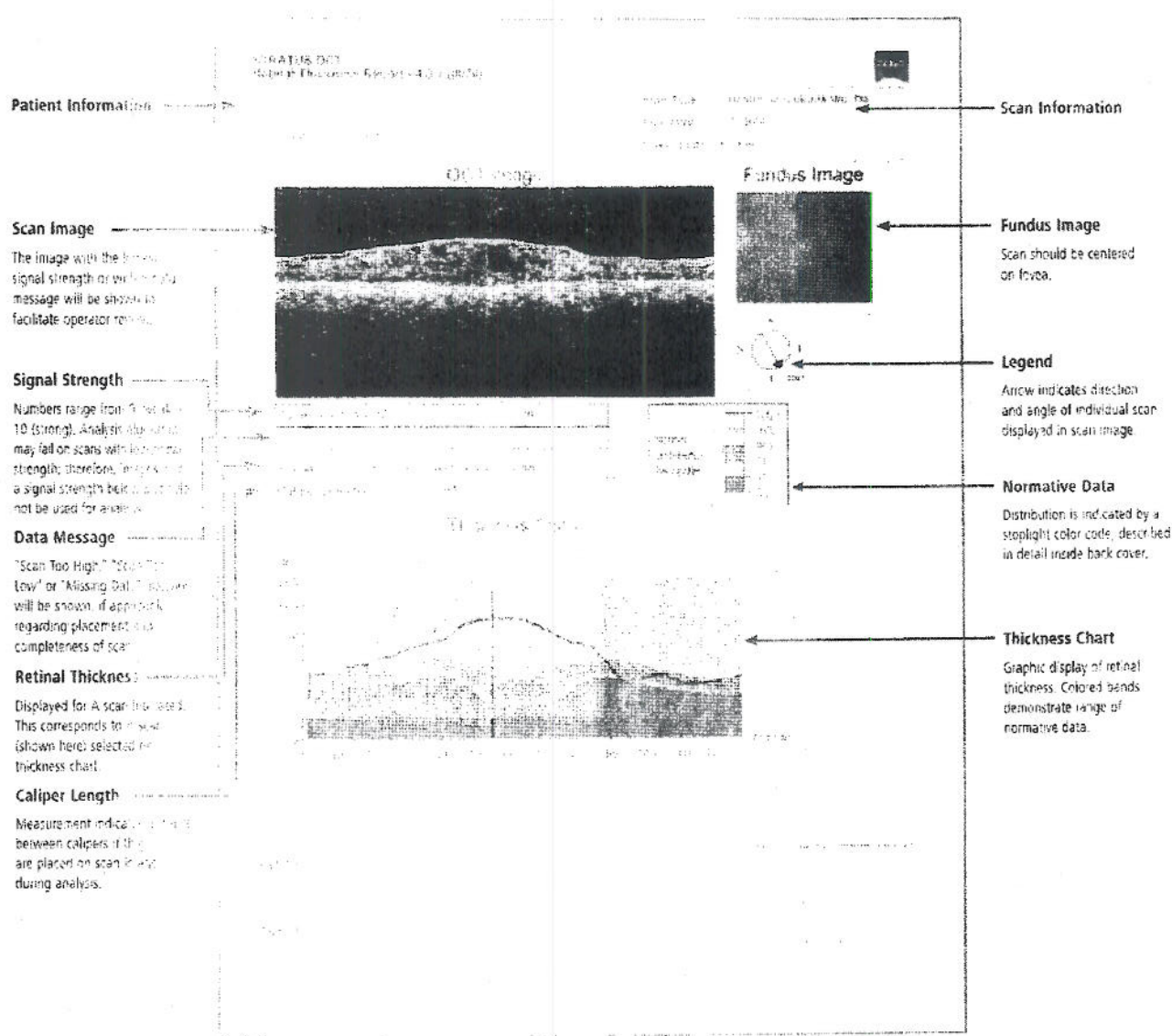
## Macular Thickness Analysis

- Thinning of the macula may reflect glaucomatous loss
- Structural analysis of retinal sublayers reveals macular complications
- Cross-sectional view provides visualization and measurement of retinal layers

# Stratus OCT Printout

## Retinal Thickness Report

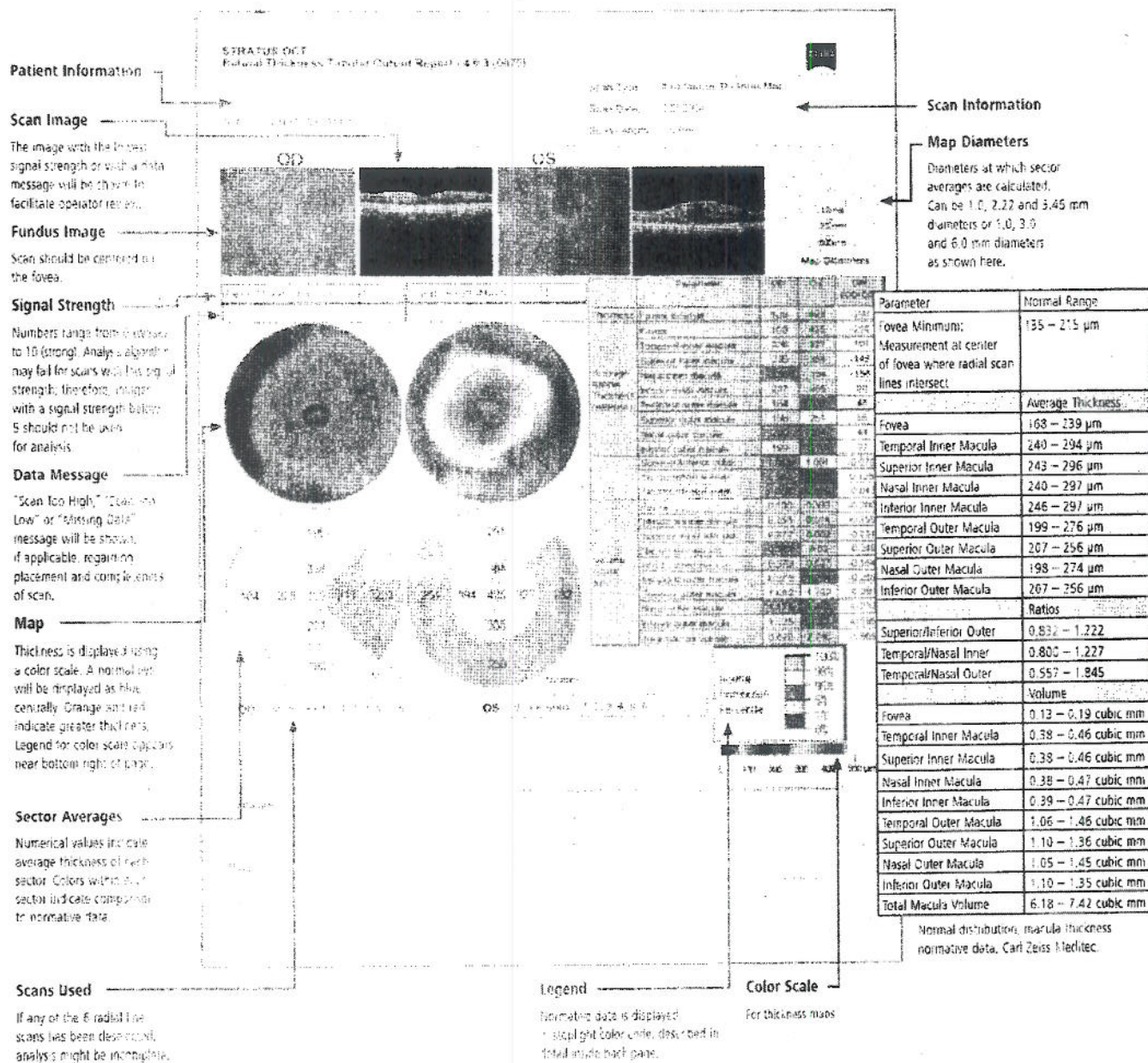
Scan Protocol: Fast Macular Thickness, Macular Thickness, Line, Cross Hair  
Used for: Assessment of overall macular region or specific areas of interest





# Retinal Thickness Tabular Output

Scan Protocol: Radial Lines, Fast Macula Thickness, Macular Thickness  
Used for: Imaging and measurement of macular pathology



# Stratus OCT Printout

## Optic Nerve Head Analysis Report

Scan Protocol: Optic Disc, Fast Optic Disc  
Used for: Evaluation of the optic disc

### Patient Information

#### Cup Markers

The edge of the cup is indicated with a green dot on the scan image and a green x on the composite diagram.

#### RPE Markers

The end of the RPE is indicated shown blue on the scan image, red on the composite diagram.

#### Signal Strength

Numbers range from 0 (weakest) to 10 (strongest). Analysis algorithm fails on scans with low signal strength; therefore, images with a signal strength below 5 should not be used for analysis.

#### Optic Nerve Head Results

Data are derived from 12 individual line scans.

#### Vertical Integrated Rim Area

Total volume of RNFL tissue in the rim is obtained by multiplying the average of the 6 individual rim widths by the circumference of the disc. Normal values are 0.25 - 0.35 mm<sup>2</sup>.

#### Horizontal Integrated Rim Width

Total rim area is obtained by multiplying the average of the 6 individual nerve widths by the circumference of the disc.

#### Disc Area

The area within the scan outline on the composite diagram.

#### Cup Area

The area within the green outline on the composite diagram.

#### Rim Area

Disc area minus cup area.

#### Cup/Disc Area Ratio

Ratio of cup area to disc area.

#### Cup/Disc Horizontal Ratio

Ratio of the longest horizontal line across the cup to the longest horizontal line across the disc.

#### Cup/Disc Vertical Ratio

Ratio of the longest vertical line across the cup to the longest vertical line across the disc.

STRATUS OCT  
Optic Nerve Head Analysis Report (5.0.3 (2070))

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#### Fundus Image

Can be used to verify scan placement.

#### Scan List

For each of the 6 radial line scans (1-6) and later the 6 horizontal scans (7-12) when the scan was lost (marked).

#### Composite Diagram

Yellow line (vertical) is marked on the diagram and displayed on the diagram.

#### Cup Area

The area within the green outline on the composite diagram.

#### Cup Volume

Volume of cup area on the topographic display.

#### Cup Offset for Topo

Default is 150  $\mu$ m anterior to disc. Represents edge of blue shading on topographic display—the surface of the cup as if it were filled with water.

### Scan Information

#### Individual Radial Scan Analysis

Data relates only to the individual scan image displayed.

#### Rim Area

Indicated with red shading on scan image, this area is bounded by the cup diameter line and a line from the RPE marker to the anterior surface of the disc, at a 90-degree angle to the cup diameter line.

#### Average Nerve Width @ Disc

The average of the nerve bundle widths at the disc on each side. Nerve bundle width indicated by yellow line from RPE marker to anterior surface.

#### Disc Diameter

Illustrated and measured on a straight line between the 2 RPE markers. Blue line on scan image.

#### Cup Diameter

Illustrated and measured on a straight line parallel to, and 150  $\mu$ m anterior to, the disc diameter line. Red on image, green on diagram, this line is adjustable.

#### Horizontal Rim Length

Disc diameter minus the cup diameter.

#### Legend

Arrow indicates direction and angle of individual scan displayed in scan image.

#### Cup Offset

Point at which cup diameter is measured. Default placement is 150  $\mu$ m anterior to the RPE markers; this point is adjustable.

#### Plot Background

There are 3 optional backgrounds; two are similar to a topographic map. **Aligned and Shaded** (default) provides a shaded relief topographic map and corrects for patient motion. **Absolute** provides a non-shaded topographic map with no correction for movement. **None** shows a solid gray background with no appearance of depth.

#### Individual Radial Scan Analysis

Disc Diameter: 0.000 mm  
Cup Diameter: 0.000 mm  
Cup Area: 0.000 mm<sup>2</sup>  
Cup Volume: 0.000 mm<sup>3</sup>  
Cup Offset: 0.000 mm  
Cup/Disc Area Ratio: 0.000  
Cup/Disc Horizontal Ratio: 0.000  
Cup/Disc Vertical Ratio: 0.000

#### Optic Nerve Head Analysis Results

Vertical Integrated Rim Area: 0.000 mm<sup>2</sup>  
Horizontal Integrated Rim Width: 0.000 mm  
Disc Area: 0.000 mm<sup>2</sup>  
Cup Area: 0.000 mm<sup>2</sup>  
Rim Area: 0.000 mm<sup>2</sup>  
Cup/Disc Area Ratio: 0.000  
Cup/Disc Horizontal Ratio: 0.000  
Cup/Disc Vertical Ratio: 0.000

#### Composite Diagram

Aligned and Shaded

Disc Diameter: 0.000 mm

Cup Diameter: 0.000 mm

Cup Area: 0.000 mm<sup>2</sup>

Cup Volume: 0.000 mm<sup>3</sup>

Cup Offset: 0.000 mm

Cup/Disc Area Ratio: 0.000

Cup/Disc Horizontal Ratio: 0.000

Cup/Disc Vertical Ratio: 0.000

Disc Area: 0.000 mm<sup>2</sup>

Rim Area: 0.000 mm<sup>2</sup>

Cup Area: 0.000 mm<sup>2</sup>

Cup Volume: 0.000 mm<sup>3</sup>

Cup Offset: 0.000 mm

Cup/Disc Area Ratio: 0.000

Cup/Disc Horizontal Ratio: 0.000

Cup/Disc Vertical Ratio: 0.000

Disc Area: 0.000 mm<sup>2</sup>

Rim Area: 0.000 mm<sup>2</sup>

Cup Area: 0.000 mm<sup>2</sup>

Cup Volume: 0.000 mm<sup>3</sup>

Cup Offset: 0.000 mm

Cup/Disc Area Ratio: 0.000

Cup/Disc Horizontal Ratio: 0.000

Cup/Disc Vertical Ratio: 0.000

Disc Area: 0.000 mm<sup>2</sup>

Rim Area: 0.000 mm<sup>2</sup>

Cup Area: 0.000 mm<sup>2</sup>

Cup Volume: 0.000 mm<sup>3</sup>

Cup Offset: 0.000 mm

Cup/Disc Area Ratio: 0.000

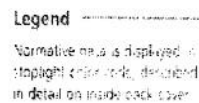
Cup/Disc Horizontal Ratio: 0.000

Cup/Disc Vertical Ratio: 0.000



Scan Protocol: RNFL 3.4 mm, Fast RNFL 3.4 mm

Used for: Retinal nerve fiber layer thickness assessment and comparison to normative database



| Comparison   | Average Ratios | Measurement   | Average Values    |
|--|----------------|---|-------------------|
| <b>Imax/Smax</b><br>Thickest points in inferior and superior quadrants         | 0.83 – 1.25    | <b>Min-Max</b><br>Difference between minimum and maximum measurements | 96 – 154 $\mu$ m  |
| <b>Smax/Imax</b><br>Thickest points in superior and inferior quadrants         | 0.77 – 1.25    | <b>Smax</b><br>Thickest measurement in superior quadrant              | 124 – 189 $\mu$ m |
| <b>Smax/Iavg</b><br>Thickest point in superior quadrant to average in temporal | 1.76 – 3.06    | <b>Imax</b><br>Thickest measurement in inferior quadrant              | 125 – 194 $\mu$ m |
| <b>Imax/Iavg</b><br>Thickest point in inferior quadrant to average in temporal | 1.69 – 3.12    | <b>Savg</b><br>Average measurement in superior quadrant               | 97 – 152 $\mu$ m  |
| <b>Smax/Iavg</b><br>Thickest point in superior quadrant to average in nasal    | 1.37 – 2.93    | <b>Iavg</b><br>Average thickness in inferior quadrant                 | 98 – 156 $\mu$ m  |
|  |                | <b>Average Thickness</b>  | 82 – 118 $\mu$ m  |

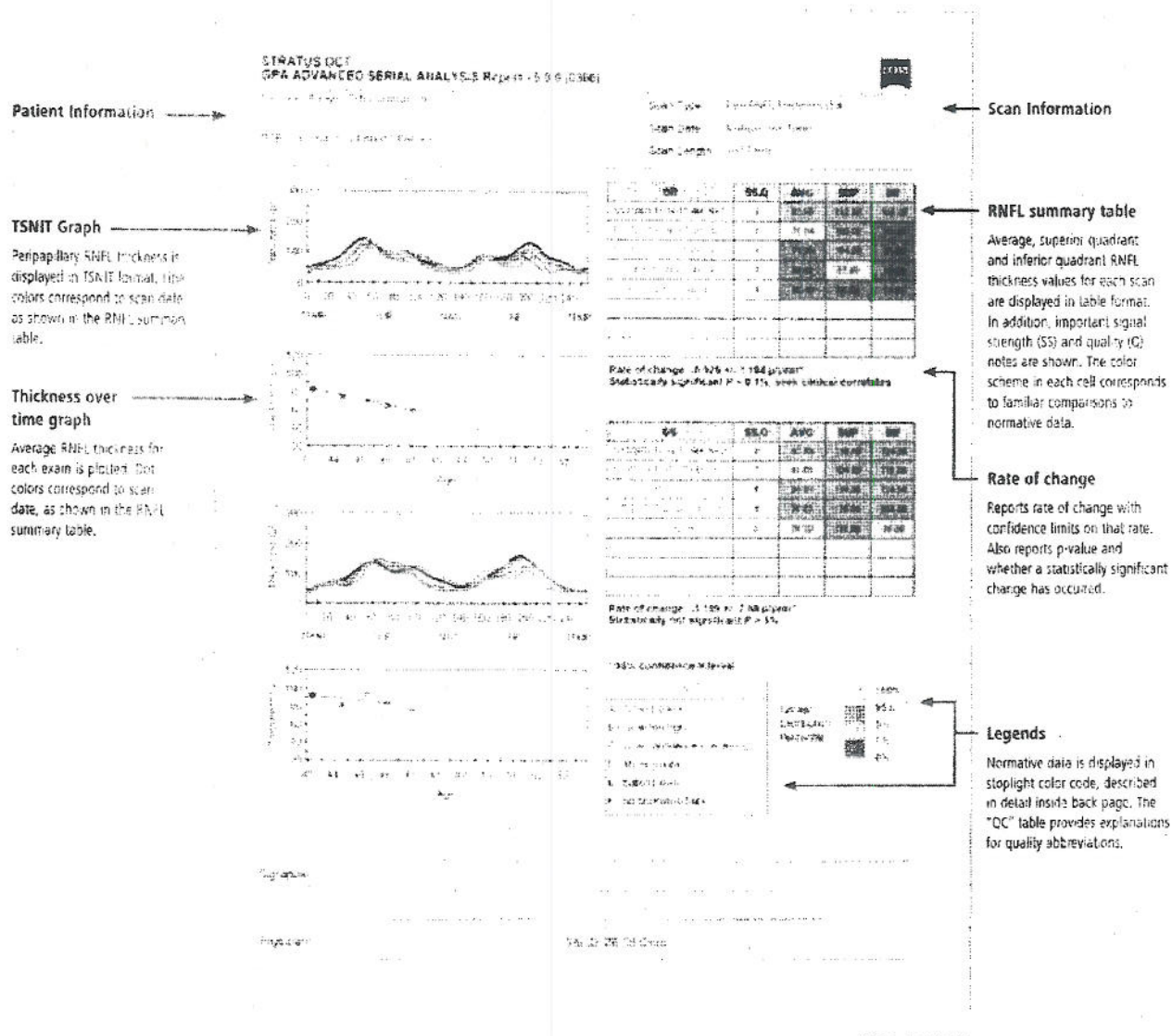
Journal des Érudits, 30<sup>e</sup> novembre 1866, Carl Louis Mertens.

# Stratus OCT Printout

## GPA™ Advanced Serial Analysis

Scan Protocol: Fast RNFL Thickness (3.4), RNFL Thickness (2.27 x disc)

Used for: Statistical analysis of RNFL thickness change over time. Can be applied to up to 8 OD and/or 8 OS scan groups

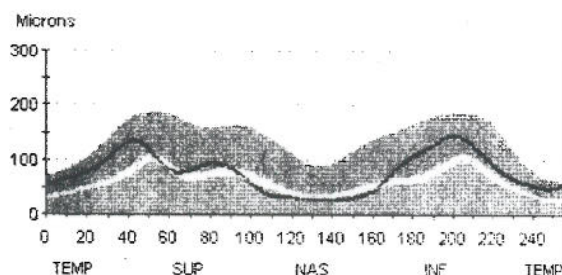




# Stratus OCT Normative Data

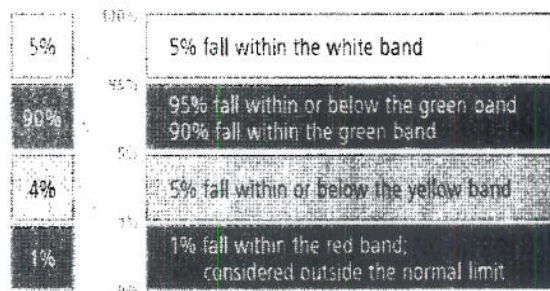
## Stoplight Color Scheme

RNFL Normative Data Display

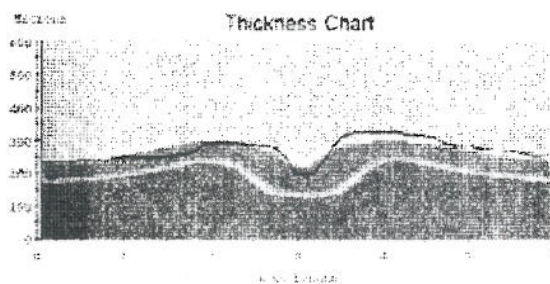


RNFL Normative Distribution

Of the normal population:

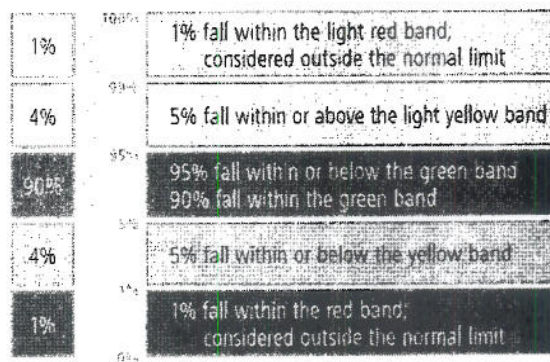


Macula Normative Data Display



Macula Normative Distribution

Of the normal population:



At Carl Zeiss Meditec, we are committed to expanding clinical potential with innovative, precise and clinically advanced instruments that contribute to the enhancement of vision worldwide. And, through lifetime customer care and a serving technology approach, we are also dedicated to ensuring your success now and throughout the future. For more information on the Stratus OCT system or to learn, contact your Carl Zeiss Meditec representative today, or visit our website at [www.meditec.zeiss.com/stratus](http://www.meditec.zeiss.com/stratus).

1. Wellstein G, Ishikawa H, Wang J, Braxton SA, Schuman JS. Comparison of three optical coherence tomography scanning areas for detection of glaucomatous damage. *Am J Ophthalmol*. 2003;135(1):32-43.
2. Schuman JS, Wellstein G, Farra E, et al. Comparison of optic nerve head measurements obtained by optical coherence tomography and confocal scanning laser ophthalmoscopy. *Am J Ophthalmol*. 2003;135(4):594-612.

Pentium is a registered trademark of Intel Corp.  
Windows is a registered trademark of Microsoft Corp.



| Tomographic Imaging           |  |
|-------------------------------|--|
| Purpose                       | Cross-sectional imaging of retina  |
| Signal type                   | Optical scattering from tissue   |
| Signal source                 | Superluminescent diode, 820 nm   |
| Optical power                 | ≤750 microwatts at cornea  |
| Longitudinal/Axial resolution | ≤10 µm in tissue   |
| Transverse sample size        | 20 µm in tissue  |
| Scanners                      | Galvanometric mirror   |
| Scan patterns                 | Line, circle, concentric rings, radial lines   |
| Scan pixels                   | Adjustable from (1024 axial x 128 transverse) to (1024 axial x 768 transverse)   |
| Longitudinal (depth) range    | 2 mm in tissue   |
| Scan rate                     | 400 A scan/sec   |
| Fundus Imaging                |  |
| Purpose                       | Fundus alignment, documentation  |
| Signal type                   | CCD image  |
| Field of view                 | 26° x 20.5°  |
| Viewing method                | Flat panel display   |
| Illumination                  | Near IR/red-free   |
| Internal fixation             | 32 x 16 LED dot matrix   |
| External fixation             | Slit lamp type adjustable blinking LED   |
| Minimum pupil diameter        | 3.2 mm   |
| Electrical                    |  |
| Power consumption             | 100 V approx. (±10%), 50/60 Hz, 6.0 A<br>115 V approx. (±10%), 60 Hz, 6.0 A<br>230 V approx. (±10%), 50/60 Hz, 3.0 A<br>700 VA |
| Footprint                     |  |
| Patient module                | 48 inches x 34 inches, 120 cm x 85 cm  |
| User Features                 |  |
| Processor                     | 2.4 GHz Pentium® IV  |
| Operating system              | Windows® 2000  |
| Memory                        | 512 MB   |
| Standards and Approvals       |  |
| UL                            | 2601-1   |
| CSA                           | 22.2 No. 601.1   |
| MDD                           |  |

Note: All technical specifications are subject to change without notice.

#### Carl Zeiss Meditec AG

Goeschewitzer Str. 51-52  
07745 Jena  
Germany  
Telephone: +49 (0)36 41 / 2 20-3 33  
Telefax: +49 (0)36 41 / 2 20-2 82  
[info@meditec.zeiss.com](mailto:info@meditec.zeiss.com)  
[www.meditec.zeiss.com](http://www.meditec.zeiss.com)

#### Carl Zeiss Meditec, Inc.

5160 Hacienda Drive  
Dublin, CA 94568  
USA  
Tel: 1-925-557-4100  
Toll free: 1-800-242-9821  
Fax: 1-925-557-4101  
[info@meditec.zeiss.com](mailto:info@meditec.zeiss.com)  
[www.meditec.zeiss.com](http://www.meditec.zeiss.com)