

IMAGE IS EVERYTHING[®] **RAYVEL[®]** HOLOGRAPHICS

HOLOGRAPHIC PRODUCTS AND SERVICES

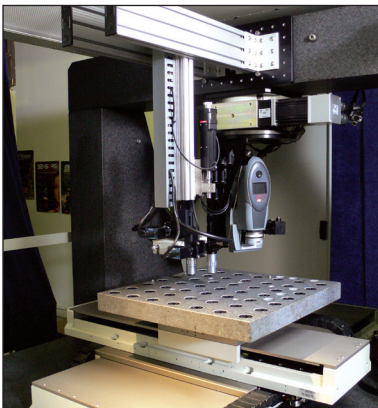
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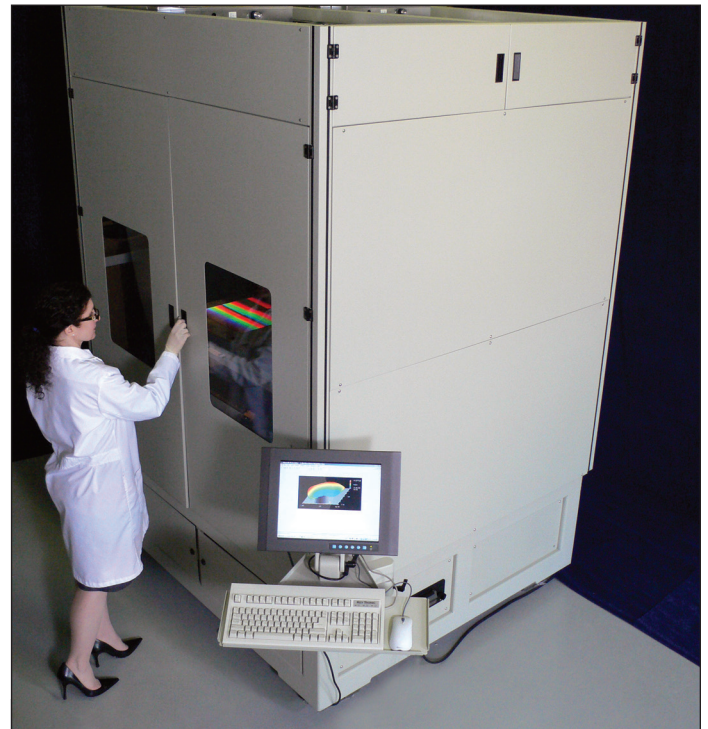
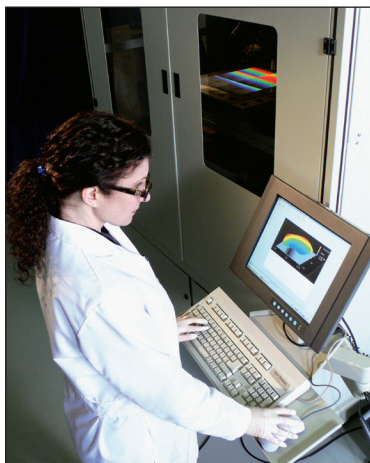
Rayvel Proudly Introduces the OTS 2000 Universal Automated Optical Test Station



and optic's quality. The software is designed to be run by a technician with minimal training. Its modular design allows for adding tests in the future or modification of existing tests. This system is customizable to meet the exacting requirements of related applications, such as photonic crystal generation.



This system fully characterizes the performance of large optical flats, such as TV and computer screens, in a fully automated manner. Numerous safety features were incorporated that prevent damage to the optic during measurement process. A report is generated at the end of the test that provides a map of any defects on the optic and numerous other quantitative data that fully characterizes it. High accuracy servo driven translation stages allow for years of continuous use in a production environment with intuitive user friendly software. Defects as small as 10 microns can be detected (the diameter of human hair is about 100 microns). The system includes a motorized XY stage with dual cameras. One camera inspects for defects. The other camera is used at the operator's discretion for close up views of the defects



Used to test and measure large optical flats, such as:

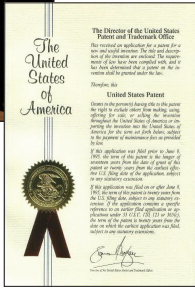
- Flat screen panels for TV, computers, etc.
- Holographic Optical Elements
- Solar panels

Tests all physical and optical properties, including:

- Reflection and diffraction efficiency
- Wave front analysis
- Flatness
- Defects

Standard configuration includes:

- XY stage with dual cameras, dual frame grabbers, auto-focus, XY stage driver/controller
- Image processing software and software to automatically run the test set
- Objectives, optics mount, and fiber optic illuminator
- Granite isolation table
- Computers and monitor
- NBS traceable power meter and detector
- Thermally stabilized laser diode
- Fizeau interferometer with automated pan and tilt



Patent # 7,259,899 Approved:

Narrow Angle Hologram Device and Method for Manufacturing Same

We are extremely pleased to announce that Rayvel has earned a patent for our narrow angle hologram technology. This technology illuminates a hologram from a perpendicular (rather than an overhead) light source, such as a headlight from an on-coming vehicle. This aids visitors and emergency vehicles to find your house in dark suburban and rural homes. No battery or other powering is required. This technology can also be used for critical, angular alignment of objects moving towards each other, such as a space shuttle trying to dock squarely to a space station. Joe Ciaudelli, President, comments, "We knew we had something unique; it is gratifying that the government also recognizes it"

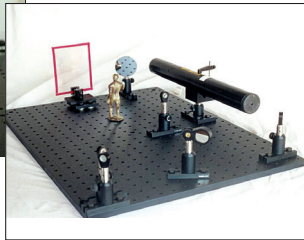


Actual size is 1.125" diameter



Neumann Celebrates 80th Anniversary with a Hologram

What do the Beatles, Tony Bennett, Kelly Clarkson (and virtually all recording artists) have in common? They record their hit records with Neumann microphones. Based in Berlin Germany, Neumann is the most revered brand in the audio industry. Their accolades include a Grammy, multiple TEC awards (Technical Excellence & Creativity) and induction into Mix Magazine's Hall of Fame. So of course they wanted to do something special to commemorate eighty years in business. Rayvel is providing a two-channel holographic sticker that will be affixed to the packaging of Neumann products worldwide. The two-channel design (different images seen depending on the viewing angle) emulates the head and tail of a German coin.



HoloLab 1.X

Originally custom designed for the physics lab at the University of California, this holography demonstration kit is now available as a standard product. The beam splitter on a flipper mount offers a convenient means of instructing how master transmission holograms are made and viewed. Its compact size of only 18" x 24" makes it easy to fit on any lab table and it can be hand carried between classrooms. It is also cost effective for schools, with options ranging from \$1995-\$2995.



Rayvel Awarded

Joe and Rose Ciaudelli accepted the prestigious Gold award from the Connecticut Quality Improvement Partnership. This growing group of active business people, educators, health care executives and government officials concerned with improving the economic vitality of Connecticut, uses the Malcolm Baldrige National Quality Award Criteria for Performance Excellence. Joe Ciaudelli remarks, "We were truly proud to join the ranks of other Gold level winners, such as Pfizer Global R&D, Pratt & Whitney and Yale University."

Joe Ciaudelli and Terry May