

Press Release

TOPTICA Photonics AG
Lochhamer Schlag 19
D-82166 Graefelfing / Munich

Elke Marchthaler
Marketing Communication
Manager

Phone + 49 89 85837-123
Fax + 49 89 85837-200
elke.marchthaler@toptica.com

March 28, 2006

HUSKY reference drives for Blu-ray and HD DVD discs and stampers

TOPTICA presents HUSKY drives for Blu-ray and HD DVD reference measurements at MEDIA-TECH EXPO Frankfurt 2006.

HUSKY drives used by major media brand owners

The competing 3rd generation violet disc formats step by step enter into the replication factories of the major media brand and content owners. Therefore easy-to-use test systems are urgently required to adjust the production lines and to check the disc quality. TOPTICA offers the HUSKY test drives to all well-known manufacturers of electrical disc testers helping the industry to mature the industrial replication of the new disc formats. TOPTICA President Dr. Thomas Weber: "We are happy to report that meanwhile many of the media brand owners and drive manufacturers are successfully using the TOPTICA drives inside their test systems. Since MEDIA-TECH showcase 2005 in Frankfurt, where the first HUSKY drives showed their testing capabilities on Blu-ray and HD DVD discs, TOPTICA Photonics AG has ramped up its drive production to securely supply OEM customers."

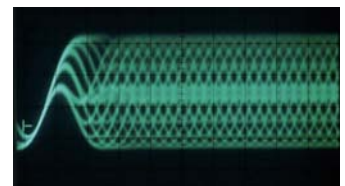
Based on test discs provided by the format leaders TOPTICA continuously improves the calibration procedures. Extensive tests in the drive production process are introduced to meet the high expectations of the optical disc industry. Here the open platform design of the drive as well as the fact that all components – even the pickup head – are manufactured by TOPTICA helps to introduce important modifications as soon as they appear.

Formats covered by the HUSKY drive

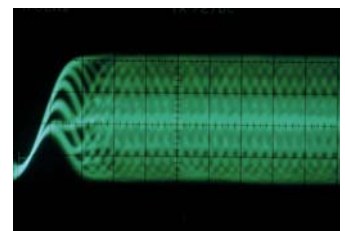
HUSKY-BD	Blu-ray	-RE -ROM -R -R (low-to-high)	SL/DL SL/DL SL/DL SL
HUSKY-HD	HD DVD	-ROM	SL/DL



HUSKY reference drive for Blu-ray and HD DVD discs



Raw eyepattern of Blu-ray disc (RE, 23 GB, SL)



Typical raw eyepattern of HD DVD disc (ROM, 15 GB, SL)

Author:

Dr. Thomas Renner, TOPTICA Photonics AG

Stamper player for Blu-ray

The major difference between a disc and a stamper tester is the different optical setup due to the missing substrate on top of the storage layer of the disc. Hence standard focusing lenses, which have included a correction factor for the substrate, would need to be modified accordingly – a modification that is too expensive for the small market.

In the HD DVD case a test drive with regular HD DVD optics can be converted into a stamper player by using compensation methods for the 0.6 mm substrate. This can be a small 0.6 mm glass window placed between the focusing lens and the disc and moved in crosstrack direction together with the pickup head. Alternatively a 0.6 mm dummy substrate with 120 mm diameter can be placed on top of the stamper spinning with the disc.

It is expected that test system providers will be able to use the same methods also with the geometrically identical HD DVD format. The modular setup of the HUSKY drive will allow to operate the drive without the loading tray and to apply the described methods for HD DVD stamper testing.

The situation is quite different for the Blu-ray format: the protective layer is only 100 µm thick and the working distance between the focusing lens and the disc surface is only 150 µm, 50 µm of that is used by a protective bumper around the lens. These geometrical conditions complicate the usage of the methods formerly applied with DVD: the tolerances for a compensation window or for the flatness of a 120 mm dummy substrate would be very tight!

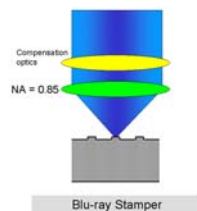
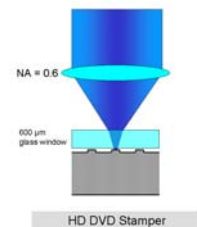
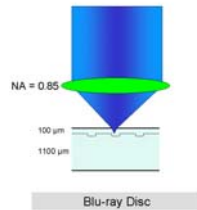
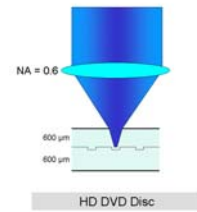
Since the protective layer for Blu-ray is relatively thin TOPTICA will implement compensation optics directly into the pickup head and will also present a drive capable to playback Blu-ray stampers at the MEDIA-TECH show. The concept will work without any kind of compensation windows or dummy substrates.

A Passion for Precision.

TOPTICA – historically a laser system manufacturer - has detailed experience in laser diode based systems with highest precision requirements. In the field of optical data storage a range of products has been developed and sold successfully since 1998: e.g. for R&D laboratories a static tester is available under the product name “MediaTest-I” (in cooperation with Prof. Masud Mansuripur, University of Tucson / Arizona). Recently, TOPTICA has successfully proven its reference capability having developed and manufactured the drive platform for the production testers for Microsoft’s Xbox360 discs.

TOPTICA is member of a range of technology cooperations, which are currently developing the laser base for the fourth generation of optical data storage media, based on holographic recording principles.

TOPTICA booth number at MEDIA-TECH Expo Frankfurt: Hall 3, Booth E 37



TOPTICA Photonics AG develops, manufactures, services and distributes technology-leading diode and fiber lasers and laser systems for scientific and industrial applications. Sales and service is offered worldwide through TOPTICA Germany and its subsidiary TOPTICA USA, as well as all through 12 distributors. A key point of the company philosophy is the close cooperation between development and research to meet our customers' demanding requirements for sophisticated customized system solutions and their subsequent commercialization.

Author:

Dr. Thomas Renner, TOPTICA Photonics AG