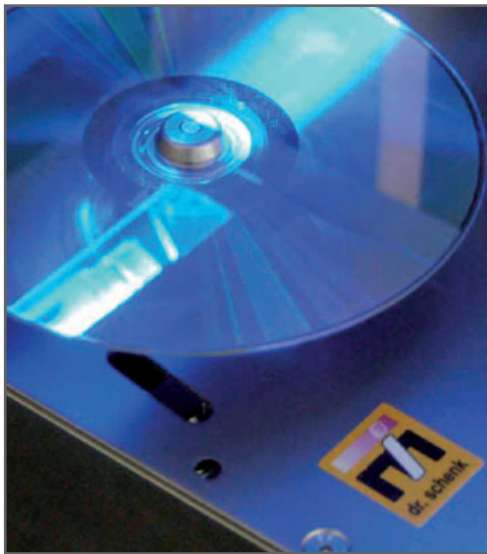


Quality Assurance & Process Control with the In-Line Scanner ISM.blue+



Inspection and Measurement for all Blu-ray Media Formats

**Blu-ray Discs SL and DL: BD ROM,
BD R, BD R 6x (LTH) and BD RE**

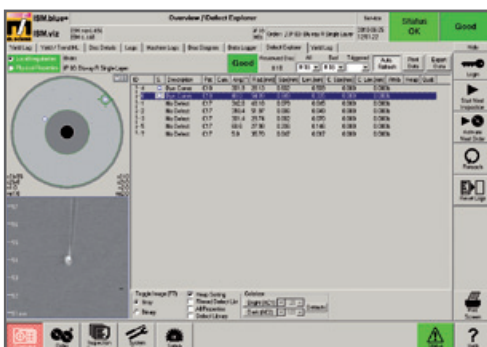
New high-definition disc formats are based on blue-violet laser technology, enabling a strong increase in recording density. The challenging needs of higher density prerecorded and rewritable discs set stricter demands on inspection and measurement systems. The unique optical design and the precise analysis software of the In-Line scanner ISM.blue+ enable a reliable inspection and process control that meet the strict quality standards of Blu-ray disc production at an optimized yield.

Key Features at a Glance

- High resolution optical set-up for reliable inspection and analysis
- Absolutely stable systems based on embedded LINUX™ OS
- Easy integration into replication and manufacturing lines
- 100 per cent coating topography within split seconds
- Advanced defect classification specific to Blu-ray discs
- Precise identification of core and deflecting size of a defect
- User friendly and industry suitable visualization software ISM.viz
- Optimized view on all data needed for fast process alignment
- High speed data processing

Valuable Options

- Top side inspection of the clamping area
- Reflectivity measurement
- Barcode reader for tracing of disc
- BCA code inspection and reading
- Crack sensor to detect cracks caused by molding or handling



*The visualization software
with SEMI Standard:
ISM.viz - clear information
arrangement and fast access
to all functions*

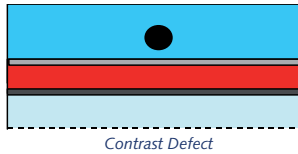


**Now also
available for
BD R 6x
Organic Dye**

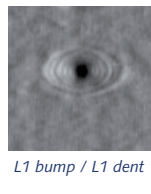
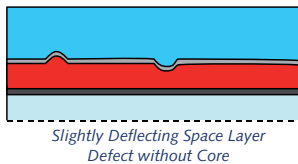
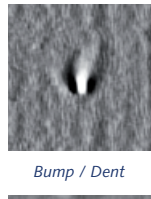
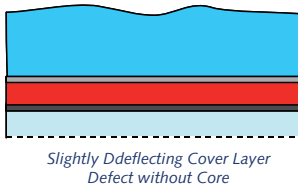
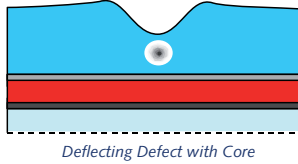
ISM.blue+

Prepared for the Blu-ray Challenges of Today and Tomorrow

Well Known from CD/DVD



New Defect Types of Blu-ray Discs



Typical Blu-ray Disc Defect Types

High-Speed In-Line Inspection for Local Disc Irregularities

- **Layer thickness visualized on 100 % of the disc area:** The thickness analysis creates a coating topography on 2048 radii covering the entire disc.
- **New processes cause new defect types:** ISM.blue+ detects defects specific to BD's cover and space layer via 4 inspection channels using 2 individual cameras. The elaborate classification enables an even more reliable replication process analysis.
 - Cover layer defects such as bubbles, inclusions, bumps/dents, spin coating spots
 - Sputtering defects, e.g. metallization flaws, pinholes, oil stains
 - Handling defects e.g. surface defects, scratches
- **High resolution 0° camera channel:** Innovative optical set-up for the determination of the true defect size.
- **Unique inspection channel for edge defects:** Even the outer disc area can be checked for coating layer irregularities.

High-Precision Measurement of Physical Properties

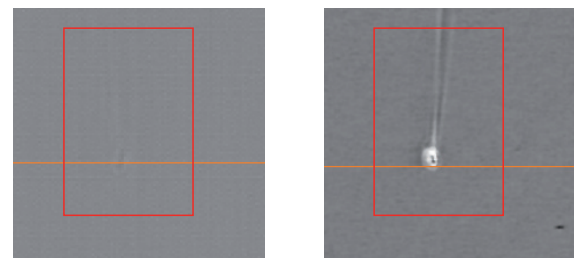
The ISM.blue+ precisely measures geometrical disc parameters for an optimized process control:

- Disc Deformation
- Cover Layer Thickness
- Space Layer Thickness
- Cover + Space Layer Thickness

ISM.blue+ Advanced Version for BD R 6x Organic Dye

For the latest BD technology BD R 6x (LTH - Organic Dye), Dr. Schenk now offers an advanced version of the ISM.blue+ . These high speed recordable discs are manufactured applying a dye coating that is characterized by an absorption spectrum different to the (dye) coating of BD R and BD R 2x. While the standard BD scanners use an optimized wavelength in the Blue/IR range, the organic dye coating of a 6x high speed disc requires UV light for highest inspection sensitivity.

In addition to the adapted wavelength, the new ISM version is further equipped with an innovative camera, enabling highest sensitivity. Layer coating defects like dye comets or voids can now be detected with a higher contrast and, thus, more reliable (see comparison on the right). Moreover, the innovative image acquisition technology even enables a fast inspection time (1 second). Dr. Schenk's ISM.blue+ for BD R 6x (LTH - Organic Dye) perfectly meets the inspection demands of tomorrow's high-speed BD formats.



Dye comet in organic dye coating layer of a BD R 6x (LTH): clear enhancement of sensitivity thanks to the new optical set-up (right)

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