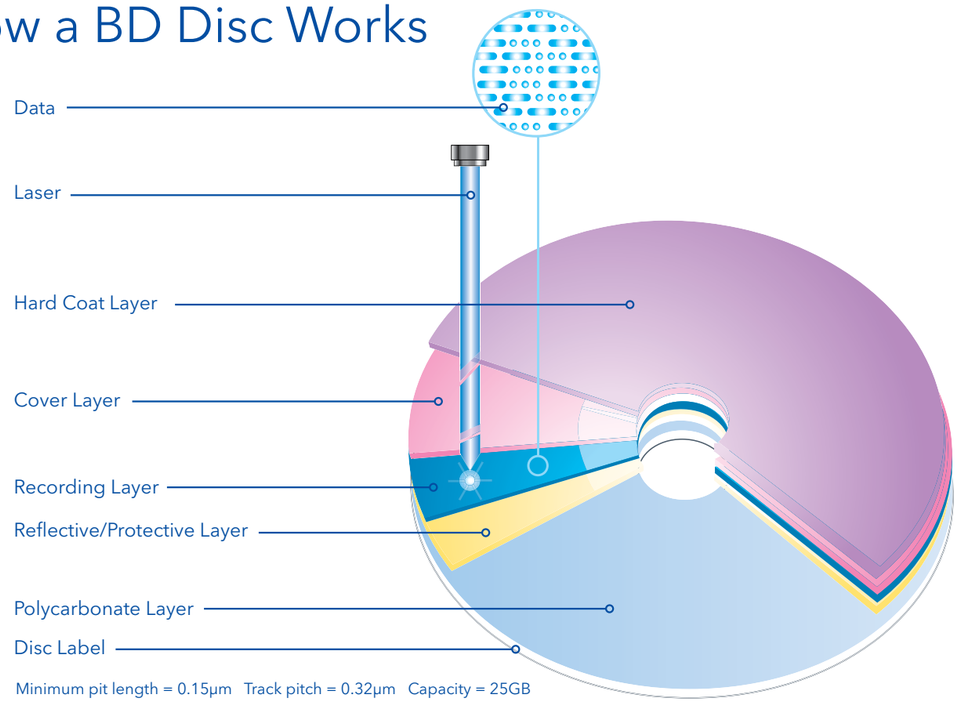
How a BD Disc Works



Minimum pit length = 0.15µm Track pitch = 0.32µm Capacity = 25GB

Blu-ray Specifications

Disc Type	BD-R (Write-once)		BD-RE (Re-writable)	
Recording Layer	Single layer	Dual layer	Single layer	Dual layer
Recording capacity	25GB	50GB	25GB	50GB
Recording layer	Inorganic material		Phase-change material	
Laser wavelength	405 nm		405 nm	
Lens numerical aperture (NA)	0.85		0.85	
Standard data transfer rate	36 Mbps		36 Mbps	
Disc diameter	120 mm		120 mm	
Disc thickness	1.2 mm		1.2 mm	
Cover Layer	0.1mm		0.1mm	
Tracking	Groove recording		Groove recording	
Track pitch	0.32 µm		0.32 µm	
Shortest mark length	0.149 µm		0.149 µm	

The Range

BD-R	Capacity	Speed	Pack Style	Part No
BD-R	25GB	6x	5 Pack Jewel Case	43715
BD-R	25GB	6x	10 Pack Spindle	43742
BD-R	25GB	4x	10 Pack Slim Case	43721
BD-R	25GB	4x	3 Pack Slim Case	43716
BD-R AZO LTH Type	25GB	6x	5 Pack Jewel Case	43753
BD-R Printable	**Capacity**	**Speed**	**Pack Style**	**Part No**
BD-R Wide Printable	25GB	6x	10 Pack Jewel Case	43713
BD-R Wide Printable	25GB	6x	25 Pack Spindle	43738
BD-R Wide Thermal Printable No-ID	25GB	6x	25 Pack Spindle	43743
BD-R AZO LTH Type Wide Printable No-ID	25GB	6x	10 Pack Spindle	43751
BD-R Dual Layer	**Capacity**	**Speed**	**Pack Style**	**Part No**
BD-R DL	50GB	6x	10 Pack Spindle	43746
BD-R DL	50GB	6x	5 Pack Jewel Case	43748
BD-R Dual Layer Printable	**Capacity**	**Speed**	**Pack Style**	**Part No**
BD-R DL Wide Printable No-ID	50GB	6x	25 Pack Spindle	43749
BD-R DL Wide Thermal Printable No-ID	50GB	6x	25 Pack Spindle	43750
BD-RE	**Capacity**	**Speed**	**Pack Style**	**Part No**
BD-RE	25GB	2x	10pk Spindle	43694
BD-RE	25GB	2x	5 Pack Jewel Case	43615
BD-RE Dual Layer	**Capacity**	**Speed**	**Pack Style**	**Part No**
BD-RE DL	50GB	2x	5 Pack Jewel Case	43760

LTH = Verbatim's BD-R LTH Type uses our proven AZO technology, which ensures perfect recording quality and long term reliability. As with all our Blu-ray media, our BD-R LTH Type discs feature Hardcoat protection which is superbly resistant to harmful scratches and fingerprints.

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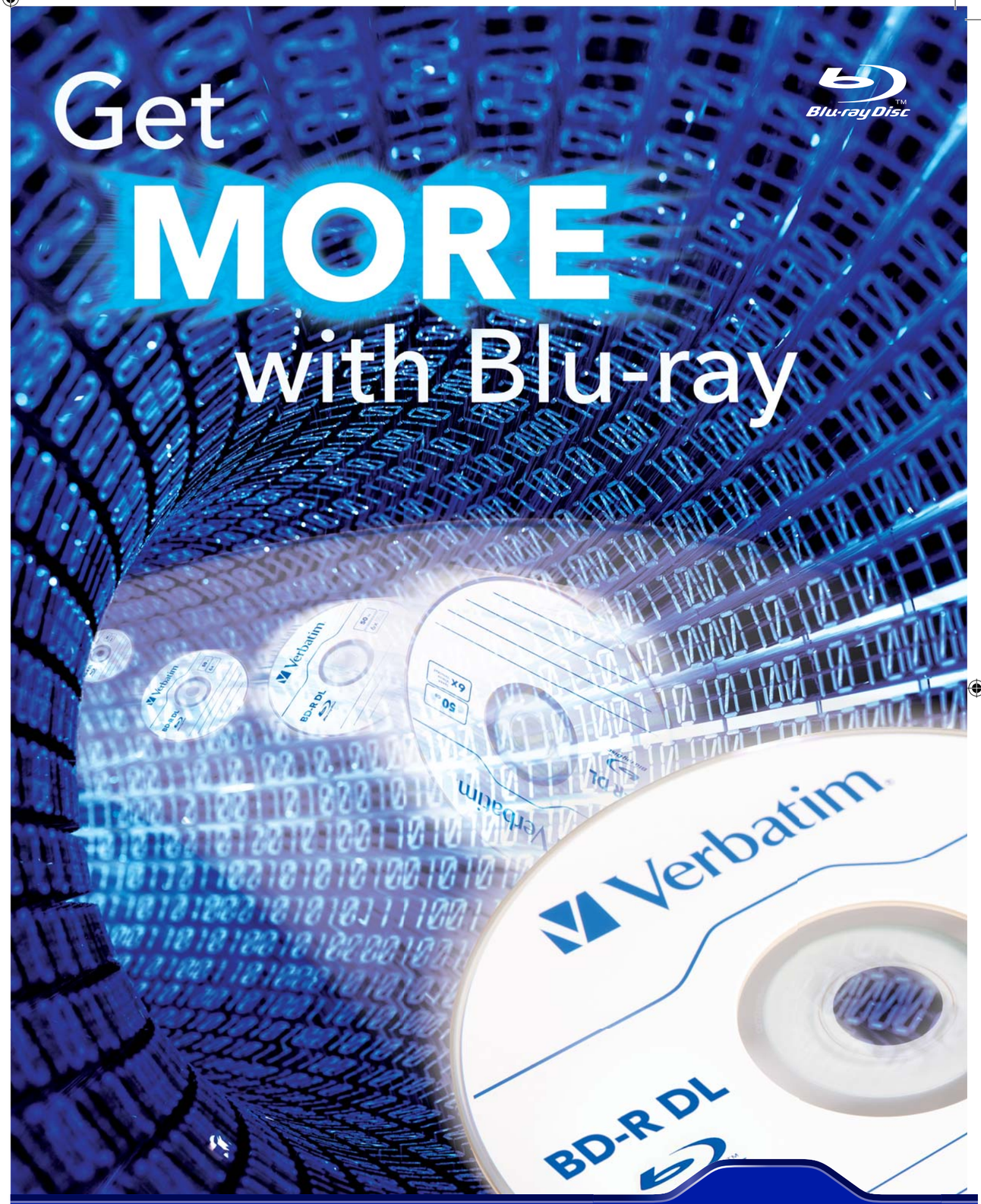

www.verbatim-europe.com

Verbatim
Technology you can trust

Why Verbatim?

Verbatim offers the complete solution for all your needs. From optical media and memory cards to printable photo paper and batteries, Verbatim is the right choice for future technology, today.

Verbatim ensures that all of our products carrying the Verbatim brand meet the exact high quality standards that our customers have come to expect.

Our research and development teams are continually creating new products and enhancements on current products. This results in early launches of new products like Blu-ray plus latest speed generations in DVD, whilst improving printable surfaces and establishing features like Hard Coat.

Our business model and dedicated employees have earned us our sought after leadership position and the top market share in Europe for recordable Blu-ray, DVD and CD media. It is a position we have worked hard to achieve, and we will work even harder to maintain it.

About Verbatim

Verbatim is a subsidiary of Mitsubishi Kagaku Media, based in Japan. Mitsubishi Kagaku Media's wide-range of operations makes it one of the leading chemical companies in the world.



Mizushima Research Centre

Mitsubishi Kagaku Media's pioneering strength is visible in its products, for which the research and development is carried out in the Mizushima Research Centre. The company also has strong relationships with the major hardware manufacturers in the market. These two strengths benefit Verbatim by ensuring not only the latest technologies and products first to market, but also that optical discs bearing our brand are the standard that many hardware companies test their recorders on, making our discs superbly compatible.

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High Definition Media

With less than 15 years since the debut of the DVD format, the 'Next Generation' of optical media is already here and the demand for High Definition (HD) home entertainment is on the rise.



High Definition Television provides an unsurpassed picture quality and a remarkable high-end surround sound. With the superb resolution, dynamic contrast, vivid colours and remarkably clear sound effects, high definition brings an additional dimension to your visual entertainment.

With the growth in HDTV, there is a consequential need for media to record HD programmes. Recording 2 hours of standard definition television in standard DVD quality requires a full 4.7GB DVD disc. High Definition content – with its increased resolution and digital sound tracks requires an ever greater amount of storage capacity. Verbatim's Blu-ray discs range from 25GB to a massive 50GB which is more than enough HD storage space.

What is Blu-ray?

Blu-ray discs (BD) get their name from a combination of the words blue and optical ray. The format was developed by the Blu-ray Discs Association (BDA), which is made up of a group of leading consumer electronics, major film studios and PC companies, including our parent company, Mitsubishi Kagaku Media. Verbatim, as a subsidiary of MKM, has therefore, first hand access to the latest in Blu-ray technology.

Our Research and Development team enables us to be at the forefront of Blue Laser Technology and we are producing 6x speed discs and are looking into triple-layer 100GB capacity discs.

The Blu-ray disc's higher storage capacity is enabled by a blue laser that has a shorter wavelength than the standard red laser used in CD (780nm) and DVD (650nm) technology. Blu-ray disc utilises a blue laser with a wavelength of only 405nm combined with a strong lens system with a numerical aperture of 0.85. This results in an ultra-small laser spot which enables smaller data pits to be written, increasing the amount of data on the disc. Due to the small data entry spot on the disc surface hard coating is needed on Blu-ray discs.

Features and Benefits

- Mitsubishi Kagaku Media, Verbatim's parent company, has perfected the Blu-ray technology with on-going research and development to deliver the best products on the market.
- Verbatim's BD-R LTH Type uses our proven AZO technology, which ensures perfect recording quality and long term reliability. As with all our Blu-ray media, our BD-R LTH Type discs feature Hardcoat protection which is superbly resistant to harmful scratches and fingerprints. (Please note that some older drives may encounter issues when reading or writing to LTH Type discs. New firmware has been released by the drive manufacturers to solve these issues. Please contact your drive manufacturer for the latest firmware.)
- Verbatim's BD-R 6x and BD-R DL discs use a newly developed inorganic recording layer called MABL; a patented technology that ensures superb quality recording, long archival lifetime and excellent "playback" performance.
- Verbatim's proven production technology and experience ensures perfect recording on every Blu-ray disc supplied to our customers. We are so confident in the quality of our technology that we offer a lifetime warrantee with all our optical media - Blu-ray, DVD and CD.
- Blu-ray disc usage:
  - Data Storage & Backup: 5 movies DVD quality, 4800 Photos of 5MB, 7200 MP3 files (3.3MB)
  - Video / HDTV Recording
  - Development of video games and software
  - Premastering for Film and TV Studios
  - Data / Software distribution

Hard Coat surface

Some discs are handled extensively, for example, 8cm discs that are constantly placed in and out of the Camcorder in external environments. To protect from potential damage, all Verbatim Blu-ray discs benefit from the Hard Coat protective layer, which was developed originally by Verbatim. This layer protects from fingerprints, dust, scratches, static and water.

See below 2 examples. The left hand image shows a disc comparison for typical scratch resistance. The right hand image shows how Verbatim's Hard Coat prevents from fingerprint smudging, an essential feature for Blu-ray recording.

After Steel-wool Test

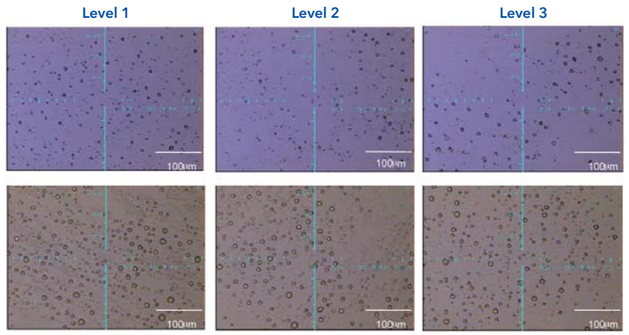


Without Hard Coat



With Hard Coat

Artificial Fingerprint Test - No fingerprint smudging



HARD COAT



Finger print proof



Static proof



Scratch proof



Dust proof



Water proof

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