



POSSIBLU

Making Blu-ray Discs a Reality





PURE

Recording Perfection

TDK Blu-ray Discs are breakthrough recording technology from the only media company that's a founding member of the Blu-ray Disc Association. 25GB single-layer and 50GB dual-layer write-once and rewritable versions enable massive data backups and the highest resolution HD recording. TDK's exclusive DURABIS hard coating formulation protects the media surface against scratches and other contaminants that would destroy lesser discs, while the company's advanced spin coating manufacturing process and ultra-precise recording materials ensure pure recording perfection.

TDK: We're making Blu-ray Discs a reality.



TDK BLU-RAY DISCS

TDK Blu-ray Discs deliver next-generation storage capacities in write-once and rewritable versions.

25GB



BD-R 25GB
RECORDABLE
SINGLE-SIDED
SINGLE-LAYER



BD-RE 25GB
REWRITABLE
SINGLE-SIDED
SINGLE-LAYER



ALWAYS AT THE FOREFRONT

1969

One small step: Selected by NASA for the Apollo 11 mission, TDK audio tape records first words ever spoken by mankind on the moon.



1978

TDK launches its first VHS videocassette. Company begins R&D for optical recording technology.

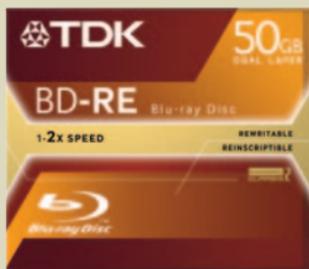


1989

TDK introduces the first recordable CD with 550MB capacity.



50GB



BD-R 50GB
RECORDABLE
SINGLE-SIDED
DUAL-LAYER



BD-RE 50GB
REWRITABLE
SINGLE-SIDED
DUAL-LAYER



1998

TDK launches the first recordable DVD with 3.95GB capacity on a single-sided, single-layer disc.



2003

TDK launches the first 25GB Blu-ray Discs in Japan; the discs are cartridge-based.



2006

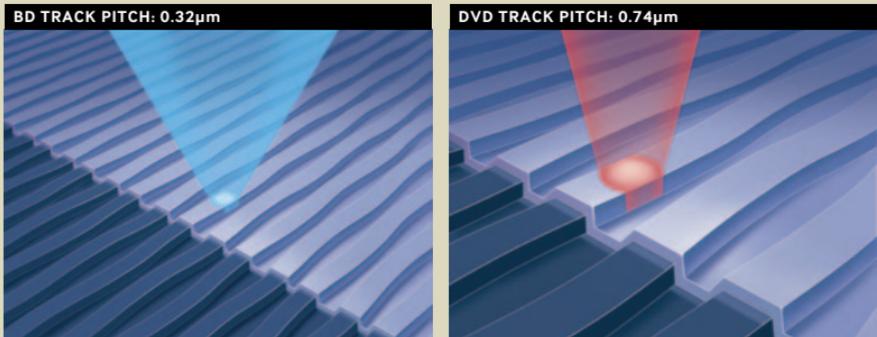
One giant leap: TDK introduces 25GB single-layer and 50GB dual-layer Blu-ray Disc media featuring DURABIS hard coating for superior durability without a cartridge.



BECAUSE LIFE IS HIGH DEFINITION

To help realize its massive storage capacities, the Blu-ray Disc utilizes a track pitch of just 0.32 microns. The track pitch is less than half that of a DVD and the diameter of the laser spot is approximately 80 percent smaller. The blue laser's short 405nm wavelength and the large 0.85 numerical aperture of the lens further contribute to the Blu-ray Disc's high density storage capacities.

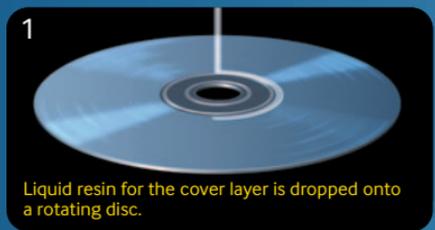
BLU-RAY DISC: TRUE HIGH DENSITY RECORDING



A blue laser is used for Blu-ray as opposed to the red laser utilized for DVD.

SPIN COATING PROCESS

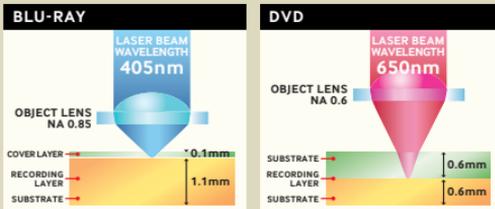
TDK's exclusive spin coating technology creates a cover layer with nano-precise smoothness, ensuring pure recording perfection. Only TDK utilizes this proprietary spin coating process.



PRODUCTION TECHNOLOGY FOR **PRECISE** PERFORMANCE

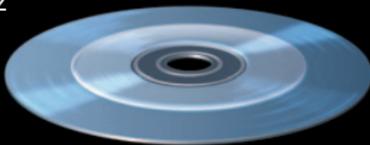
A 0.1 millimeter thick cover layer comprises the Blu-ray Disc's outermost layer, and the recording material resides beneath it. During recording, the laser passes through the cover layer in its path to the recording layer. Absolute uniformity in the thickness of the cover layer is critical to ensuring precise laser tracking, which is required for reliable performance.

PRECISE LASER TRACKING



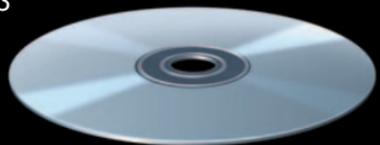
The laser beam passes through the Blu-ray Disc's cover layer in its path to the recording layer. A uniform cover layer helps ensure precise laser tracking.

2



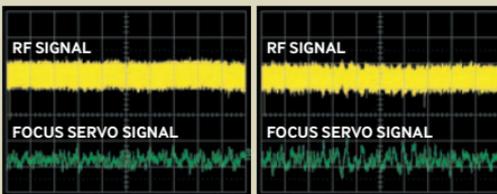
The disc is spun rapidly, and the resin is spread outwards by centrifugal force.

3



The resulting cover layer has ultra-uniform 0.1mm thickness.

STABLE SERVO SIGNAL



TDK BLU-RAY DISC

DISC WITH POOR COVER
LAYER UNIFORMITY

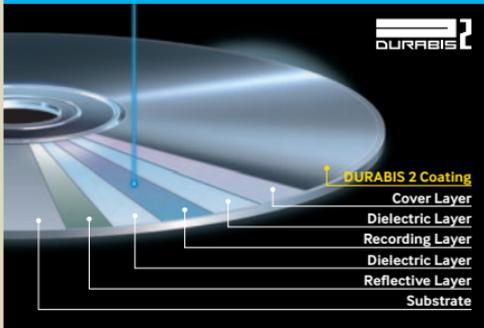
The cover layer's uniformity reduces the servo circuitry load, helping create an ultra-stable focus servo signal, which contributes to accurate media performance.

ROBUST DURABILITY

Because the Blu-ray Disc employs high density recording, which requires maximum laser precision, the disc must be aggressively protected against scratches and other contaminants that could interfere with the laser, causing data errors. The solution is DURABIS, TDK's exclusive hard coating technology.

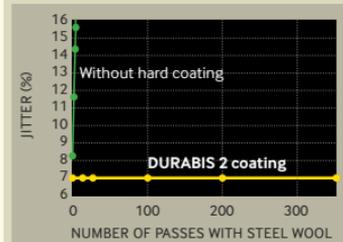
DURABIS IS DURABILITY

BLU-RAY DISC WITH DURABIS



Only TDK Blu-ray Discs have DURABIS, the most protective hard coating formulation.

LESS SCRATCHING = LESS JITTER



After being rubbed with steel wool, the disc with TDK's DURABIS hard coating showed virtually no increase in jitter. The disc without hard coating had catastrophic jitter levels after the same test.

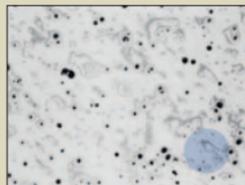
SUPERIOR SCRATCH RESISTANCE

DURABIS protects the disc surface against scratches and resists smudges from fingerprints, providing error-free Blu-ray Disc performance. Hard coating technology pioneered by TDK is part of the Blu-ray specification, but only TDK has DURABIS, the most advanced hard coating formulation for Blu-ray Disc media.

SUPERIOR FINGERPRINT RESISTANCE



DURABIS 2 COATING



WITHOUT HARD COATING

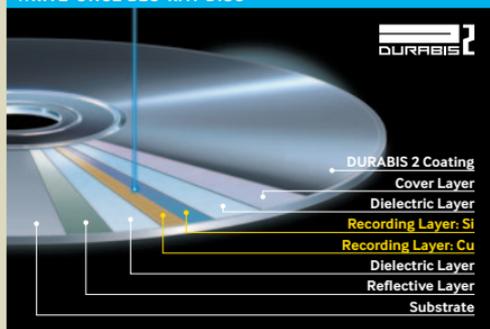
Two discs were contacted with an oily simulated fingerprint substance and then photographed under a microscope. As shown, the fingerprint substance had far greater difficulty adhering to the disc with DURABIS, forming only minute particles that are too small to interfere with the laser.

REVOLUTIONARY RECORDING ELEMENTS

TDK's write-once and rewritable Blu-ray Discs feature exclusive recording materials optimized for each disc type. The high-sensitivity inorganic recording material utilized by TDK for the write-once type Blu-ray Disc is completely different than the recording materials used for CD or DVD. Composed of copper and silicon, TDK's exclusive CuSi recording material delivers remarkable, long-lasting performance. The recording material enables fast recording and playback speeds and also makes it possible to realize massive capacities through multi-layering.

INORGANIC RECORDING MATERIAL

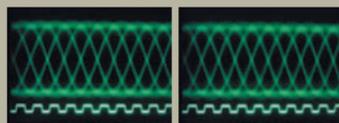
WRITE-ONCE BLU-RAY DISC



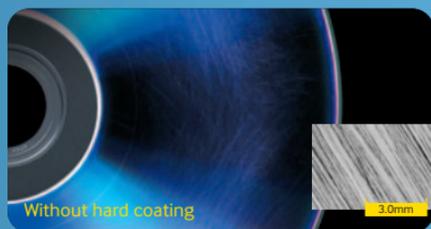
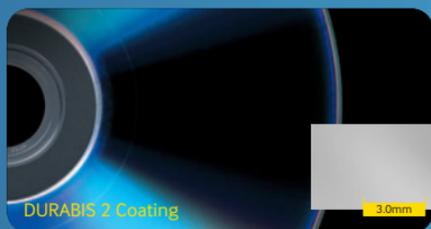
The CuSi recording material incorporates copper (Cu) and silicon (Si) for breakthrough performance.

ULTRA-STABLE PHASE CHANGE MATERIAL

REWRIABLE BLU-RAY DISC



A smooth eye pattern indicates stable recording and playback performance. Even after 10,000 overwrites, the TDK Blu-ray Disc's eye pattern is very clean.



THE CuSi RECORDING PROCESS



Recording material for write-once TDK Blu-ray Discs.

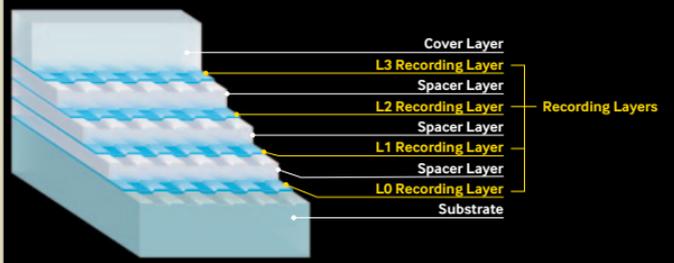
The recording laser melts the copper (Cu) and silicon (Si) materials mixing them and forming an alloy during the recording process.

BRINGING THE FUTURE INTO THE PRESENT

TDK technologies have already enabled creating 100GB, quad-layer Blu-ray Disc prototypes with blazing 216Mbps (6x) speed. The company is on the verge of creating the world's first 200GB Blu-ray Disc prototype.

MASSIVE CAPACITIES

100GB QUAD LAYER DISC STRUCTURE



TDK's 100GB Blu-ray Disc will offer enough capacity to store 10 hours or more of the highest quality HD video. (Exact amount depends on resolution of content.)

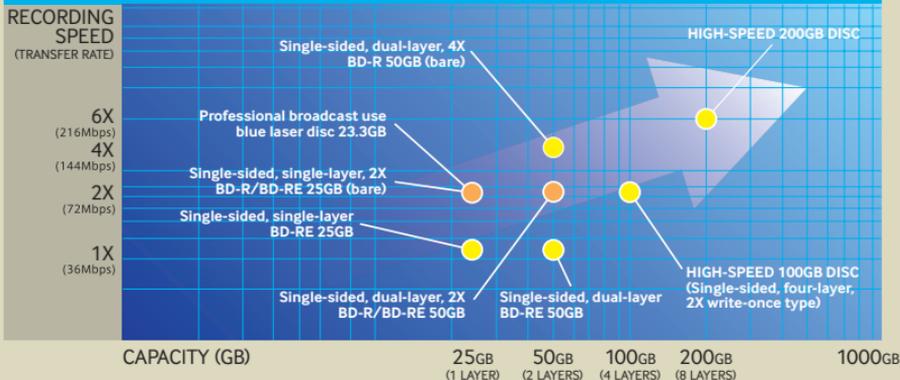
TDK is supplying its Blu-ray Discs as reference media samples to hardware manufacturers. Superior compatibility with Blu-ray drives and recorders will be a lasting result of this initiative. Like all TDK recording media, TDK Blu-ray Discs are the smart choice.

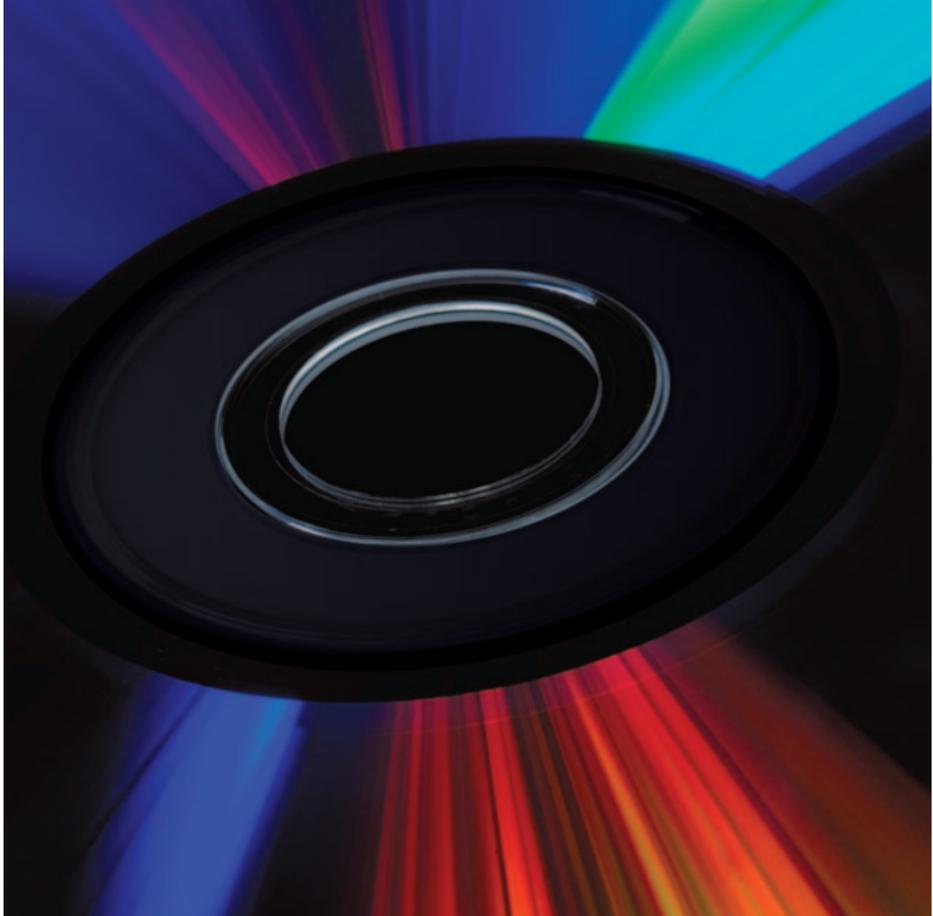
TDK and Blu-ray: Now everything's possible.

From reputation to innovation, TDK is the recording media leader.

DEFINING THE FUTURE OF RECORDING

TDK BLU-RAY DISC ROADMAP





SPECIFICATIONS

	TDK BD-R		TDK BD-RE	
	25GB	50GB	25GB	50GB
BLU-RAY DISC	25GB	50GB	25GB	50GB
TYPE	Write-Once	Write-Once	Rewritable	Rewritable
LAYERS	Single	Double	Single	Double
DISC DIAMETER	120mm	120mm	120mm	120mm
DISC THICKNESS	1.2mm	1.2mm	1.2mm	1.2mm
LASER WAVELENGTH	405nm	405nm	405nm	405nm
RECORDING SPEED	2x (72Mbps)	2x (72Mbps)	2x (72Mbps)	2x (72Mbps)
HARD COATING	DURABIS 2	DURABIS 2	DURABIS 2	DURABIS 2
				

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