Product Specifications

Product Name : DVD-R for Authoring

1.0

Revision mark

1. Application

This specification is applied to the ϕ120mm DVD-R disc which is produced by Mitsui Chemicals Inc.

The items not described here is subject to DVD Specifications for Recordable Disc for Authoring (DVD-R for Authoring) version 2.0.

2. Product Summary

This product is possible to be recorded once in DVD format and to be played.

3. Environmental Conditions

3.1 Environmental conditions for use

Temperature : -25 ℃ to 70 ℃
Relative humidity : 3 to 95 %
Absolute humidity : 0.5 to 60 g/m^3
Temperature variation : 15 ℃ /h max.
Relative humidity variation : 10 % /h max.
(There shall be no condensation of moisture on the disc.)

3.2 Environmental conditions during recording

Temperature : -5℃ to 55℃
Relative humidity : 3 to 95 %
Absolute humidity : 0.5 to 30 g/ m^3

3.3 Storage conditions

Temperature : -20 ℃ to 50 ℃
Relative humidity : 5 to 90 %
Absolute humidity : 1 to 30 g/ m^3
Atmospheric pressure : 75 to 105 kPa
Temperature variation : 15 ℃ /h max.
Relative humidity variation : 10 % /h max.

4. Measuring Conditions

4.1 Environmental conditions

Temperature : 15℃ to 35℃
: 23 ± 2 ℃ (for dimension measurement)
Relative humidity : 45 to 75 %
: 50 ± 5 % (for dimension measurement)
Atmospheric pressure : 86 to 106 kPa

4.2 Measuring conditions (PUH) : Unrecorded disc

Wavelength(λ) : 635 ±5 nm
Polarization : circularly polarized light
Numerical aperture (NA) : 0.60 ± 0.01
Light intensity at the rim of the pupil of the objective lens
: Over 40% of the maximum intensity level in the radial direction and over 50% of the maximum intensity level in the tangential direction.

4.3 Write strategy

Refer to **12. Unrecorded Physical Format** .

4.4 Measuring conditions (PUH) : Recorded disc

Wavelength(λ) : 650 ± 5 nm
Polarization : circularly polarized light
Numerical aperture (NA) : 0.60 ± 0.01
Light intensity at the rim of the pupil of the objective lens
: 60 to 70 % of the maximum intensity level in the radial direction and over 90% of the maximum intensity level in the tangential direction.

4.5 Measuring scanning velocity

: 3.49 ± 0.03 m/sec.

4.6 Clamping

Clamping force : 2.0 ± 0.5 N

5. Mechanical Parameters

Items	Requirements	Measuring methods or Conditions
・Outer diameter	120.00 ± 0.30 mm	
・Maximum rotation run-out of outer edge	0.30 mm max. (peak to peak)	
・Center hole diameter (One side of the disc)	15.00 +0.15/ -0.00 mm	
・Center hole diameter (Both sides put together)	15.00 mm min.	
・Thickness of a disc	1.20 +0.30/ -0.06 mm	Includes adhesive layer and label.
・Inner diameter of the Clamping area	22.0 mm max.	
・Outer diameter of the Clamping area	33.0 mm max.	
・Thickness of a disc in the Clamping area	1.20 +0.20/ -0.10 mm	
・Mass of a disc	13 g to 20 g	

6. Optical Parameters

Items	Requirements	Measuring methods or conditions
・Thickness of a transparent Substrate	0.6 +0.020/ -0.025 mm	
・Refractive index (RI)	1.55 ± 0.10	
・Birefringence of transparent Substrate	100 nm max.	Double Pass
・Limits for the angular deviation of the reflected beam (α)		
a. Radial deviation	± 0.80 °	
b. Tangential deviation	± 0.30 °	
・Reflectivity	45 to 85 %	(PUH with PBS)
・Polarity of modulation	High to Low	
・Recording sensitivity fluctuation over the surface	Po ±0.05Po	

7. Recorded Parameters

Items	Requirements	Measuring methods or conditions
・Sense of disc rotation as seen from read-out side	Counterclockwise	
・Limit for the velocity variation for the laser beam recorder	0.5% max. (peak to peak)	
・Channel bit length averaged over whole disc	133.3 ± 1.4 nm	
・Track pitch	Continuous spiral from inside to outside.	
・Starting diameter of the Lead-in area	45.2 mm max.	
・Starting diameter of the Data area	48.0 +0.0/ -0.4 mm	
・Maximum outer diameter of the data area	116.0 mm	
・Outer diameter of the information area	70.0 mm min. Outer diameter of the Data area +2.0 mm min. 117 mm min.	Diameter of Data area <68.0mm. 68.0mm< Diameter of Data area< 115.0 mm 115.0mm<Diameter of Data area< 116.0mm
・Inner diameter of the Lead-out area	Outer diameter of the Data area	
・Outer diameter of the Lead-out area	Outer diameter of the Information area	
・Track pitch		
a. Average track pitch	0.74 ± 0.01 μm	
b. Maximum deviation of track pitch	0.74 ± 0.03 μm	
・Limits of the deviation from the recorded layer perpendicular to the Reference plane		
Deviation from nominal value below the rotational frequency determined by the scanning velocity.	± 0.3 mm	
・Limits of the radial deviation from the track		
Radial run-out of the tracks determined by the scanning velocity	70 μm (peak to peak)	

Additional specifications exist, but contain proprietary Mitsui Advanced Media, Inc information