PRODUCT SPECIFICATION

DVD+RW 4.7GB General Purpose (4X)

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1.0 PURPOSE

1.1 To define and document the mechanical, physical , and optical characteristics of MBI's DVD+RW, 120mm rewritable optical disc with capacity of 4.7 Gbytes in its final form as shipped to the customer.

2.0 SCOPE

2.1 This document is in conformance with 120mm DVD+RW. This specification of DVD+RW is in compliance with DVD+RW specification-version 1.2. Discs manufactured with this process are designed to work upto 4x recording speed.

3.0 REVISION RECORD

Effect Date	Item(s) No(s)	Page No	Changes made to document	Name of Requester

4.0 APPLICABLE PRODUCT

4.1 Product Description
1X-4X, DVD+RW

5.0 ENVIRONMENT CONDITIONS

5.1 For Product Testing

1	Temperature	23 ± 2 deg C
2	Relative Humidity	45 – 55 % RH

There should be no condensation. Before testing, the disc should be conditioned to the testing environment more than 24hrs.

5.2 Operating Condition (For Write/Read)

1	Temperature	-5 to 55 deg C
2	Absolute Humidity	1 ~ 30g/cu. M
3	Relative Humidity	3 ~ 85% RH
4	Relative Temperature variations	< 10 deg C/hr
5	Relative Humidity variations	< 10% RH/hr

No condensation occurs on the disc.

5.3 Storage Condition

1	Temperature	- 10 to 55 deg C
2	Absolute Humidity	1 ~ 30g/cu. M
3	Relative Humidity	3 ~ 90% RH
4	Relative Temperature variations	< 15 deg C/hr
5	Relative Humidity variations	< 10% RH/hr

No condensation occurs on the disc

5.4 Transportation

1	Temperature	-10 to 55 deg C
2	Absolute Humidity	1 ~ 30g/cu. M
3	Relative Humidity	3 ~ 90% RH
4	Relative Temperature variations	< 15 deg C/hr
5	Relative Humidity variations	< 10% RH/hr

No condensation occurs on the disc. The disc should not be kept under the above condition more than two weeks.

5.5 For Reliability Test, Test Condition

1	Temperature	80 deg C
2	Humidity	85% RH
3	Duration Time	250 hrs

After Climate test the disc should maintain the book specifications.

6.0 RAW MATERIAL DETAIL

1	Substrate	Polycarbonate
2	Recording Layer	Phase Change Alloy
3	Reflective Layer	Silver Alloy (Ag)
4	Bonding layer	UV bonding resin

7.0 MEDIA CHARACTERISTICS AND SPECIFICATIONS

7.1 Disc Geometry

1	Outer diameter of disc	120 + 0.3 mm
2	Center hole diameter	15.05 + 0.05 mm
3	Substrate thickness	1.20+0.03/-0.06 mm
4	Track pitch	0.74 ± 0.01 um
5	Scanning velocity	3.49 ± 0.03 m/s
6	M-Code	MBIPG101 W04

7.2 Mechanical Characteristics

1	Radial Deviation	± 0.7 deg
2	Tangential Deviation	± 0.3 um
3	Axial Deflection	± 150 um
4	Radial P-P	< 40 um
5	Axial Acceleration	± 4 m/s^2
6	ECC	< 30 um
7	Tangential Skew	± 0.13 um
8	Radial Acceleration	± 0.8 m/s^2
9	Radial Skew	± 0.315 deg
10	Unbalance	< 2.5gm*mm

7.3 Unrecorded Characteristics

1	Birefrigences	< ± 60 nm
2	Reflectivity	18 – 30 %
3	NWS	0.2 - 0.3
4	Radial Noise 1b	< 15 nm
5	Radial noise 2b	< 16 nm
6	CNR of Wobble	> 45 db
7	ADIP Error Rate	3 %
8	Push Pull b	0.28 – 0.56

7.4 Recorded Characteristics

a) At DOW 0

1	Reflectivity	18 – 30 %
2	M14	> 0.6
3	Assym	-0.05 to 0.15
4	Radial Noise 1a	< 15 nm
5	Radial Noise 2a	< 16 nm
6	PIE avg	< 50
7	PIF	0
8	POF	0
9	Ppa Avg	0.25 – 0.56
10	RF VAR	< 15
11	I14/I14H DV	< 0.15
12	Jitter Both	< 9
13	CNR of Wobble	> 38

b) At DOW 1000 on commercial Drive

1	Jitter	< 9
2	PIE avg	< 280

Note: These parameters entirely depend on the recording drives and test equipments