



Moser Baer India Ltd.
Engineering Department
Product: 120mm DVD+R DL
Process DVD+R DL, 8X/Version 1.0

Document No: MBI/DVD+R DL 8X/01
Effective: May 2006
Version 1.0
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PRODUCT SPECIFICATION

**Digital Versatile Disc (DVD+R DL), 8.5GB
(2.4x & 3.3~8X)**

Approved By:

Head (Engg. & Tech.)

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1.0 PURPOSE

- 1.1 To define and document the mechanical, physical, and optical characteristics of MBI's 8X DVD+R DL, 120mm recordable optical disc with capacity of 8.5GBytes in its final form as shipped to the customer.

2.0 SCOPE

- 2.1 This is in compliance with DVD+R DL 8.5GBytes Basic Format Specifications version 1.1 dated April, 2005. Disc manufactured with this process are designed to work at 2.4X & 3.3~8X recording speeds.

3.0 REVISION RECORD

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

- 4.1 Product Description
8X Speed, 8.5GBytes DVD+R DL

5.0 ENVIRONMENT CONDITIONS

5.1 For Product Testing

1	Temperature	23 ± 2 deg C
2	Relative Humidity	45-55 % RH
3	Atmospheric Pressure	60KPa ~ 106KPa

There should be no condensation. Before testing, the disc should be conditioned to the testing environment for 48hrs minimum.

5.2 For Product Use

1	Temperature	5 to 55 deg C
2	Absolute Humidity	1.0 ~ 30 gm/cu. M
3	Relative Humidity	3 ~ 85 % RH
4	Relative Temperature variations	< 10 deg C/hr
5	Relative Humidity variations	< 10% RH/hr
6	Atmospheric Pressure	60KPa ~ 106KPa

No condensation occurs on the disc.

6.0 RAW MATERIAL DETAIL

1	Substrate	Polycarbonate
2	Recording Layer/ Dye	Organic dye
3	Semi reflective Layer	MBI confidential
4	Bonding Layer	UV Bonding resin
5	Protective Layer	MBI confidential
6	Reflective Layer	MBI confidential

7.0 PRODUCT CHARACTERISTICS AND SPECIFICATIONS

7.1 DISC GEOMETRY

1	Outer diameter of disc	120 ± 0.3 mm
2	Center hole diameter	15.00 ~ 15.15 mm
3	Finished disc thickness	1.10 to 1.40 mm
4	Track pitch	0.74 ± 0.01 um
5	Scanning velocity	3.83 ± 0.03 m/s

7.2 MECHANICAL CHARACTERISTICS

1	Axial Runout	< 0.3 mm
2	Axial Tracking Error	< 0.2 um
3	Axial Acceleration	±4 m/s ²
4	Radial Runout of Tracks	<70 um on both layers
5	Radial Tracking Error	< 0.022 um
6	RMS Noise	± 0.016 um
7	Radial Acceleration	± 1.1 m/s ²
8	Radial Alpha	± 0.7 deg
9	Radial PP	< 0.8 deg
10	Tangential Alpha	± 0.30 deg

7.3 ELECTRICAL UNRECORDED SIGNALS

1	Push Pull signal Before(PPb) Recording	L0 0.28 ~0.6 L1 0.3~0.6
2	Push Pull variations before recording (PPvar) with in one layer	< 0.15
3	Push Pull Ratio (PPr) after recording with in one layer	0.6 – 1.1
4	Normalized Wobble Signal (NWS)	0.15 ~ 0.3
5	NWSr	<2.6
6	Birefringence	< 60 nm
7	WOSNRb	>45 dB

7.4 ELECTRICAL RECORDED SIGNALS

1	Rtop	45 ~ 85%
2	I14/I14H	>0.6
3	I3/I14	>0.20
4	Variation of I14/I14H within one layer	<0.25
5	Variation of I14/I14H within one revolution	<0.15
6	Asymmetry	-0.05 to 0.15
7	PI Sum 8	<280
8	Jitter	<9%
9	Differential Phase Tracking Amplitude	0.5~1.1
10	Differential Phase Tracking Asymmetry	<0.2
11	Tangential Push Pull	<0.9
12	WOSNRa	>36dB

7.5 DEFECTS

1	Air bubbles	<=100 um
2	Black spot causing birefringence	<= 200 um
3	Black spot not causing birefringence	< 300 um
4	Number (/80mm) of defects larger than 30 um	< 6
5	The total length (/80mm) of defects larger than 30 um	<= 300 um