



Moser Baer India Ltd.
Engineering Department
Product: 120mm CDRW (4X-12X)

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PRODUCT SPECIFICATION

CD-ReWritable 80 Minute General Purpose (4X-12X)

Approved By:

G.M (Technical)

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1.0 PURPOSE

- 1.1 To define and document the mechanical, physical, and optical characteristics of MBI's High Speed CDRW, 120mm rewritable optical disc with capacity of 700MB in its final form as shipped to the customer.

2.0 SCOPE

- 2.1 This document is in conformance with 120mm CD-RW. This specification of CD-RW is in compliance with Orange Book Part 3 CD-RW Version 2:High Speed. Discs manufactured with this process are designed to work at 4X-12X 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
4X-12X, High Speed, 700MB, CDRW

5.0 ENVIRONMENT CONDITIONS

5.1 For Product Testing

1	Temperature	25 ± 5 deg C
2	Relative Humidity	45-75 % 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	0.5 ~ 30g/cu. M
3	Relative Humidity	5 ~ 95% 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	-5 to 55 deg C
2	Absolute Humidity	0.5 ~ 30g/cu. M
3	Relative Humidity	10 ~ 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	-20 to 55 deg C
2	Absolute Humidity	0.5 ~ 30g/cu. M
3	Relative Humidity	5 ~ 90% RH
4	Relative Temperature variations	< 15 deg C/hr
5	Relative Humidity variations	< 15% 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 recording Material
3	Reflective Layer	Aluminium (Al)
4	Protective Layer	UV Lacquer
5	Buffer Layer	ZnS+SiO ₂

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+0.02/-0.01 mm
4	Track pitch	1.5 – 1.53 um
5	Scanning velocity	1.2-1.4 m/s
6	SLD	45.9±0.1 mm
7	SPD	49.8 ± 0.2mm
8	M-Code	97:17:01

7.2 Mechanical Characteristics

1	Maximum Deflection (ABS)	-120 to 50
2	Average Deflection (ABS)	-120 to 50
3	Vertical Runout	< 100um
4	Vertical Acceleration	± 3 m/s ²
5	Radial Acceleration	± 1 m/s ²
6	Eccentricity	< 30 um

7.3 Electrical Unrecorded Characteristics

1	Radial Noise	< 30 nm
2	Radial Contrast	> 0.05
3	NWS	0.035 – 0.06
4	ATIP	< 22.5 counts
5	WCNRb	> 35 db
6	ATIPBL	< 3 frames

7.4 Electrical Recorded Characteristics

a) At DOW 0

1	Reflectivity	15 – 25 %
2	M11	0.55 – 0.7
3	Assym	- 0.15 to 0.5
4	Radial Noise	< 30 nm
5	BLER(max)	< 80
6	BLER(avg)	< 20
7	E22	< 15
8	E32	0
9	RF VAR	< 15 %
10	M11 VAR	< 15 %
11	Push Pull	0.08 – 0.12
12	Radial Contrast	0.3 – 0.6
13	WCNRa	>26 db
14	Jitter Avg (L3T, L11T, P3T, P11T)	< 35 ns

b) At DOW 1000 on commercial Drive

1	BLER	< 220
2	E22	< 30
3	E32	0
4	Jitter (3TL, 3TP)	<35 ns

c) At Dow 1000 on DDU 1000

1	Jitter (3TL)	< 35
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Note: These parameters entirely depend on the recording drives and test equipments