



Moser Baer India Ltd.  
Engineering Department  
Product: 120mm, CD-DA  
Process: 14D\_AT, Version 3.0

Document No: MBI/CD-DA/01  
Effective: January 10<sup>th</sup>, 2004  
Version 00  
Page No: 1 of 6

## **PRODUCT SPECIFICATION**

### **CD-Digital Audio 80 Minute**

**Approved By:**

**G.M (Technical)**

Moser Baer India Ltd.  
Engineering Department  
Product: 120mm, CD-DA  
Process: 14D\_AT, Version 3.0

Document No:MBI/CD-DA/01  
Effective: : January 10<sup>th</sup>, 2004  
Version 00  
Page No: 2 of 6

***Table of Contents*** ***Page***

---

1.0	PURPOSE.....	3
2.0	SCOPE.....	3
3.0	REVISION RECORD.....	3
4.0	APPLICABLE PRODUCT.....	3
5.0	ENVIRONMENTAL CONDITIONS. ....	3
6.0	RAW MATERIAL DETAILS.....	5
7.0	MEDIA CHARACTERISTICS AND SPECIFICATIONS.....	5

## 1.0 PURPOSE

- 1.1 To define and document the mechanical, physical, and optical characteristics of MBI's CD –Digital Audio CDR, 120mm recordable 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-Recordable. Discs manufactured with this process are designed to work at 1X-24X recording speeds.

## 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  
24X Speed, 700MB, CD-DA

## 5.0 ENVIRONMENT CONDITIONS

### 5.1 For Product Testing

1	Temperature	23 ± 2 deg C
2	Relative Humidity	50 ± 5% RH

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

## 5.2 For Product Use

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	70 deg C
2	Humidity	80% 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/ Dye	Pthalocyanine
3	Reflective Layer	Silver (Ag)
4	Protective Layer	UV Lacquer

## 7.0 MEDIA 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	Substrate thickness	1.14+0.03/-0.02 mm
4	Track pitch	1.49 – 1.53 μm
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	97:17:09

### 7.2 Mechanical Characteristics

1	Maximum Deflection (ABS)	180 μm
2	Average Deflection (ABS)	< 180 μm
3	Vertical Deflection (ABS)	< 180 μm
4	Vertical Acceleration	<1.5 m/s <sup>2</sup>
5	Radial Acceleration	< 0.4 m/s <sup>2</sup>
6	Tilt	< 0.4 deg
7	Eccentricity	< 50 μm

### 7.3 Electrical Unrecorded Characteristics

1	Max variation of Push Pull	± 15%
2	RCb	> 0.05
3	RNb	< 25 nm
4	ATER	< 10%
5	ATBER	< 3frames
6	WCVRb	>35

#### 7.4 Electrical Recorded Characteristics

1	Rtop	>60%
2	I3/Itop	0.3-0.7
3	I11/Itop	>0.6
4	Asymmetry	-15 to +10%
5	Cross talk	<50%
6	BLER (max)	<80
7	BLER(avg)	<20
8	E22	<15
9	E32	0
10	Jitter(Pit 3T to 11T)	<35 ns
11	Jitter(Land 3T to 11T)	< 35 ns
12	Push Pull after record	0.07-0.13
13	RCa	0.3-0.6
14	WCNRa	> 26dB
15	Pit deviation 3T	-75 to +6 ns
16	Pit deviation 11T	-35 to +85 ns
17	Land deviation 3T	-60 to +21 ns
18	Land deviation 11T	-45 to +75 ns

**NOTE 1:** Electrical parameters heavily depend on the recording drives and the test equipment.

**NOTE 2:** Recording Speed depends on the recording software & drives. In general, media is designed for 1X-24X.