

## **Air Cleaner Test Report**

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## 1. Sample Description

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Product	: Air Cleaner
Brand Name	: b-MOLA
Model(s)	: BM20
No. of Sample Received	: 1
Test Date	: 28 Apr 2022 – 28 Apr 2022
Test Standard(s)	: GB/T 18801-2015
Test Item(s)	: Clean Air Delivery Rate (CADR)
Test requested	: Particles ( $\geq 0.3\mu\text{m}$ )
Test Equipment	: High Density Particle Counter
Test Method	: Sampled by in house method using real-time instrument
Equipment No.	: E135 – 001
Test Result	: See the attached sheets
Remark	: N/A

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## 2. Detailed Description of the sample



**b-MOLA/ BM20**



**NCCO Filter and HEPA**

### 3. Testing Environment

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Temperature	: 25°C
Relative Humidity	: 56%
Testing Chamber	: 30m <sup>3</sup> Testing Chamber
Size (W × H × D) mm	: 3400 × 3500 × 2500

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**30m<sup>3</sup> Testing Chamber**

#### 4. Testing Method of Clean Air Delivery Rate (CADR)

Tests were performed in accordance to GB/T 18801-2015.

##### 1. Test Particulate

Cigarette smoke particles ( $\geq 0.3\mu\text{m}$ )

##### 2. Test Environment

Temperature:  $(25 \pm 2) ^\circ\text{C}$

Relative Humidity:  $(50 \pm 10) \%$

##### 3. Test Apparatus

1) Testing Chamber ( $30\text{m}^3$ )

2) High Density Particle Counter (SX-L301N)

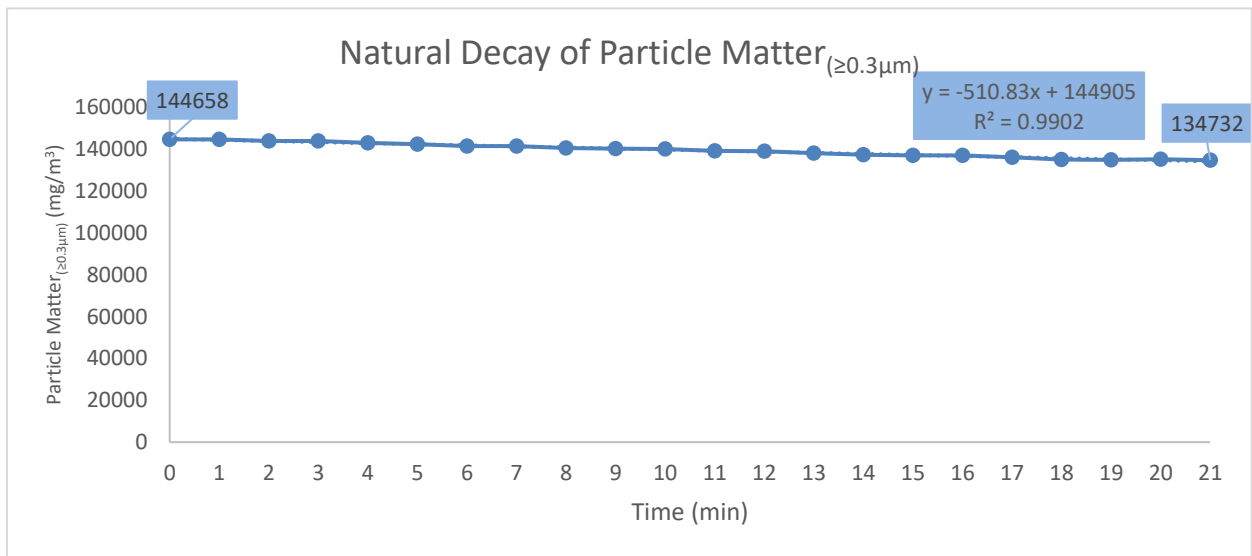
##### 4. Test Procedure

- 1) Place the air cleaner into the testing chamber. Switch on the air cleaner to the highest operation power to check if it is functioning correctly. Then turn off the air cleaner and close the testing chamber door.
- 2) Turn on high efficiency air filter of the testing chamber until the concentration of particles ( $\geq 0.3 \mu\text{m}$ ) is less than 1000 particle/L. Concurrently, switch on temperature and humidity control system until the required test environment is reached.
- 3) Record the background particle concentration. Turn off the high efficiency air filter and temperature and humidity control system.
- 4) Light a cigarette and use low pressure air to inject smoke into the testing chamber until the required initial concentration is reached, close the smoke injector and turn on the mixing fan for 10 minutes.
- 5) When the mixing fan has completely stopped, record the initial concentration of the particle ( $\geq 0.3 \mu\text{m}$ ) as  $C_0$ .
- 6) Turn on the sample air purifier. Record the particle concentration every 2 minutes for the next 20 minutes.
- 7) Repeat Procedure 1) – 6) without turning on the air cleaner, record the natural decay rate of the testing chamber.

## 5. Result of Clean Air Delivery Rate (CADR)

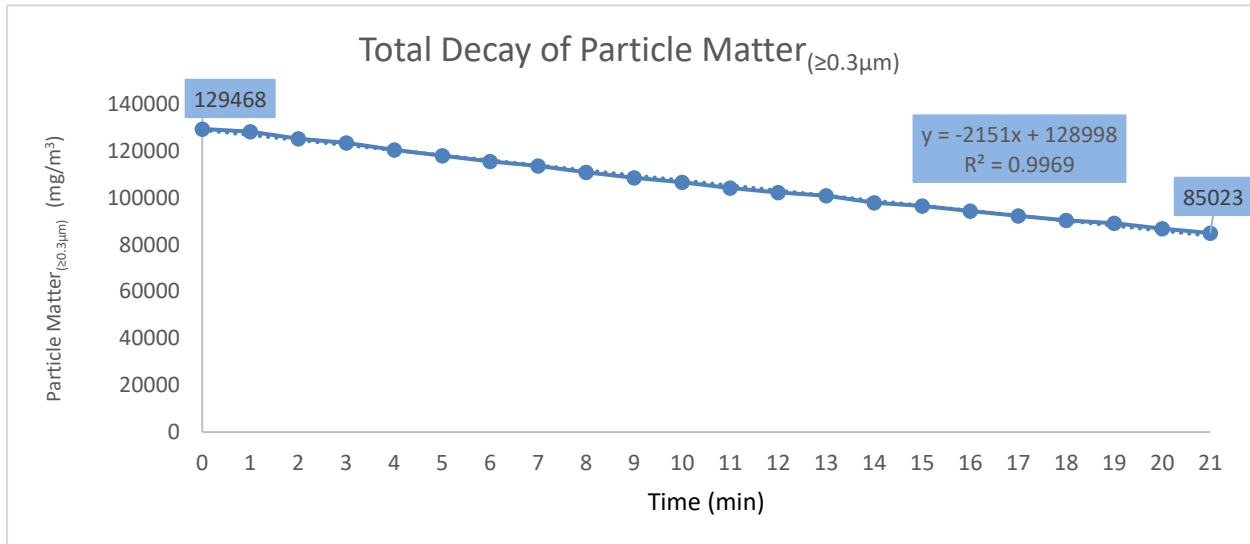
Brand/ Model No.	Operation Mode	Test Chemical	Cigarette of use
B-MOLA/ BM20	H	Cigarette smoke	1

Initial Concentration (Particle count $\geq 0.3\mu\text{m}$ )	Natural Decay, $k_n$ ( $\text{min}^{-1}$ )	Total Decay, $k_e$ ( $\text{min}^{-1}$ )	CADR ( $\text{m}^3/\text{h}$ )
129468	0.0036	0.0202	29.9



**Figure a. Natural Decay of Particle Matter ( $\geq 0.3\mu\text{m}$ )**





**Figure b. Total Decay of Particle Matter (≥0.3µm)**

## 5. Calculation

$$\text{CADR (m}^3/\text{h)} = 60 \times (k_e - k_n) \times V$$

$k_e$ : Total decay rate (min<sup>-1</sup>)

$k_n$ : Natural decay rate (min<sup>-1</sup>)

$V$ : Volume of the testing chamber (m<sup>3</sup>)

**\*\*\* End of Report \*\*\***