

## TEST CERTIFICATE

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### QUALITY REPORT

TEST REPORT AS PER: As per customer requirement

TEST REPORT NO : PEL/ED/22900122C			NAME & ADDRESS OF CUSTOMER BIROLES AUTOMATION SYSTEMS PRIVATE LIMITED F-90/9, OKHLA INDUSTRIAL AREA PHASE -1, DELHI, New Delhi, Delhi, 110020
DATE OF ISSUE OF TEST REPORT: 07/09/2022			
Customer Ref. & Date if any: Nil			
Date of Sample Receipt: 17/08/2022	Start of Test Date: 17/08/2022	End of Test Date: 07/09/2022	

#### PART A - PARTICULARS OF THE SAMPLE SUBMITTED





NATURE OF SAMPLE	ELECTRO-MAGNETIC LOCKS
Grade/ Variety/ Type/ Class/ Size etc.	12VDC/24VDC
Declared Values, if any (declared by the manufacturer).	Magnet size:250X55X26mm Armature Size:180X38X11mm
Code no.,/ Sr. No.	Nil
BIS Seal and IO's sign. If any.	Nil
Batch no., Date of manufacture	Nil
Brand Name/Model No.	Brand " <b>BIROLES</b> ", Main Model: BL-600 Series model: BL-600D, BL-1200, BL-1200D, BL-300, BL-300D
Quantity of Samples	2 No.
Condition of the Sample when received.	OK
Standard Specification (s).	UL 1034
Environmental Conditions.	Temperature 25 ± 1°C & Relative Humidity<65%

#### PART B - SUPPLEMENTARY INFORMATION

- a) Deviations from the test methods as per relevant specification/ work instructions, if any :NIL  
b) Details of the drawings, graphs, tables, sketches or photographs as referred in the test report, if any :NIL

Notes:

- i) This report is not to be reproduced wholly or in part without our special permission in writing.  
ii) This report refers only to the particular sample detailed above.  
iii) The results reported in this certificate are valid at the time of and under the stipulated conditions of measurement.  
iv) Sample will be disposed off after 30 days of issue of test report if no any further information is received.  
v) Any recognition claim in the test report is solely for promotional/advertising purpose and has no relation with the content.

	Tested By	Approved By	Issued By
	 <b>Testing Engineer</b> Date: 07/09/2022	 <b>Technical Manager</b> Date: 07/09/2022	 <b>Technical Manager</b> Date: 07/09/2022

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REQUIRED TEST	UL1034 Section	COMMENTS
Operation	6.4.1	Complies
Under-voltage operation Test:	6.4.2	Complies
Slam Cycle Test:	6.4.5.	Complies
Variable Ambient Temperature Test:	6.4.6	Complies
Cycle Test:	6.4.7	Complies
Electrostatic Discharge:	6.4.9.1	Complies
Electromagnetic Immunity:	6.4.9.2	Complies

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<b>Testing Engineer</b>		<b>Technical Manager</b>

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### Operation Test:

Tested to ANSI/BHMA A156.25 Clause 6.4.1

### Method

- Set the electrified locking device as necessary into the door in a secured mode by a signal from its intended input or controlling device.
- Unlock the electrified locking device by a signal from its intended input or controlling device and activate mechanically so the door is released to open.
- Open the door until the locking or latching mechanism is clear of the strike.
- Using the test apparatus close the door to the latched position or if functionally required project the dead bolt to its locked position.
- After the intended unlocked period, confirm that the electrified locking device has returned the door to the secured mode.

### Results

The sample was connected to a 12V D.C. source. The sample did operate as intended.

### Under voltage operation Test:

Tested to ANSI/BHMA A156.25 clause 6.4.2

### Method

The sample was mounted to a test fixture and then connected to a voltage source of 85% of it's marked rated voltage.

The sample was connected to a \_12VDC (12VC X 85%)DC\_ source and then subjected to a functions of normal operation.

### Results

The sample was connected to a 5.4V D.C. source. The sample did operate as intended.

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### Slam Cycle Test:

Tested to ANSI/BHMA A156.25 clause 6.4.5.

#### Method

The sample was mounted to a test fixture, using a size 3 overhead door closer specified in ANSI/BHMA A156.4, with a closing speed of 2.5 seconds from 90 degrees.

The sample was then cycled to 10000 times.

#### Results

The product did operate as intended after 10000 times of slam cycle test.

### Variable Ambient Temperature Test:

Tested to ANSI/BHMA A156.25 clause 6.4.6

#### Method

Subject a sample to the high temperature specified below for 4 hours in a non condensing humidity environment. Return the sample to the chamber and subject it to low temperature for 4 hours. After the High Temperature Test and the Low Temperature Test allow the lock to stabilize in 21+/-2 degrees C room temperature for 2 hours minimum.

	Low Temperature	High Temperature
Full indoor	32 dgrees F ( 0 'C)	120 dgrees F ( 49 "C)
Full outdoor	-31 dgrees F ( -35 °C)	151 dgrees F ( 66 °C)

#### Results

Intended to full indoor use. The product did operate as intended after variable ambient temperature test.

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### **Cycle Test:**

Tested to ANSI/BHMA A156.25 clause 6.4.7

### Method

The product is to be mounted in accordance with 5.4 and using the procedure in 6.4.1 operate it for 400k cycles (50% of the cycle requirements specified by the locking device applicable standard listed in 4.1.

### **Results**

The product did operate as intended after 400 000 cycles of test.

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### Enclosure Temperature Rise Test:

Tested to ANSI/BHMA A156.25 clause 6.4.10.

### Method

The product was mounted to the test door, and the door was operated 6 hours continuously

**Results :** Pass

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### Measurement Uncertainty

The reported uncertainty of measurement  $y \pm U$ , where expanded uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95 %

### Electrostatic Discharge Immunity Test

**Result** : Pass

**Test Procedure** : IEC/EN61000-4-2 : 2008

**Tested Voltage** :  $\pm 4$  for air discharge,  
:  $\pm 2$  for contact discharge,

**Number of Discharges** : 10 (Air discharge for single polarity discharge)  
: 10 (Contact discharge for single polarity discharge)

**Repetition Rate** : One discharge per sec

**Performance Criterion** : B

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Equipment	Manufacturer	Model No.	Serial No.
ESD Generator	LISUN	ESD61000-2	--

### Performance criteria B

After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacturer, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance.

During the test, degradation of performance is allowed. However, no change of operating state or stored data is allowed to persist after the test.

If the minimum performance level (or the permissible performance loss) is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

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Testing Engineer		Technical Manager



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### Test data

M/N : BL-600  
Operation Mode : mode 1  
Test Voltage : 12VDC  
Ambient temperature : 15°C to 35°C; Relative  
humidity : 30% to 60%;  
Atmospheric pressure : 860hPa to 1060 hPa

### Test Points

#### Test Result of Air Discharge

Test Point	Voltage	Result
HCP(At Front)	±4 kV	Pass
VCP(At Front)	±4kV	Pass
Insulated	±4 kV	Pass

#### Test Result of Contact Discharge

Test Point	Voltage	Result
HCP(At Front)	±2kV	Pass
VCP(At Front)	±2kV	Pass
Metallic	±2kV	Pass
Shell	±2kV	Pass

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### Test Setup for Tests Performed in Laboratory

A ground reference plane was provided on the floor of the test site. It was a metallic sheet (copper or aluminum) of 0.25 mm, minimum thickness; other metallic may be used but they shall have at least 0.65 mm thickness. In the PLANET ELECTRO LABS., we provided 1 mm thickness aluminum ground reference plane or 1 mm thickness stainless steel ground reference plane. The minimum size of the ground reference plane is 1 m x 1 m, the exact size depending on the dimensions of the EUT. It was connected to the protective grounding system.

The EUT was arranged and connected according to its functional requirements. A distance of 1m minimum was provided between the EUT and the wall of the lab. and any other metallic structure. In cases where this length exceeds the length necessary to apply the discharges to the selected points, the excess length shall, where possible, be placed non-inductively off the ground reference plane and shall not come closer than 0.2m to other conductive parts in the test setup.

The test setup was consist a wooden table, 0.8m high, standing on the ground reference plane. A HCP, 1.6 m x 0.8 m, was placed on the table. The EUT and cables was isolated from the HCP by an insulating support 0.5 mm thick. The VCP size, 0.5 m x 0.5 m.

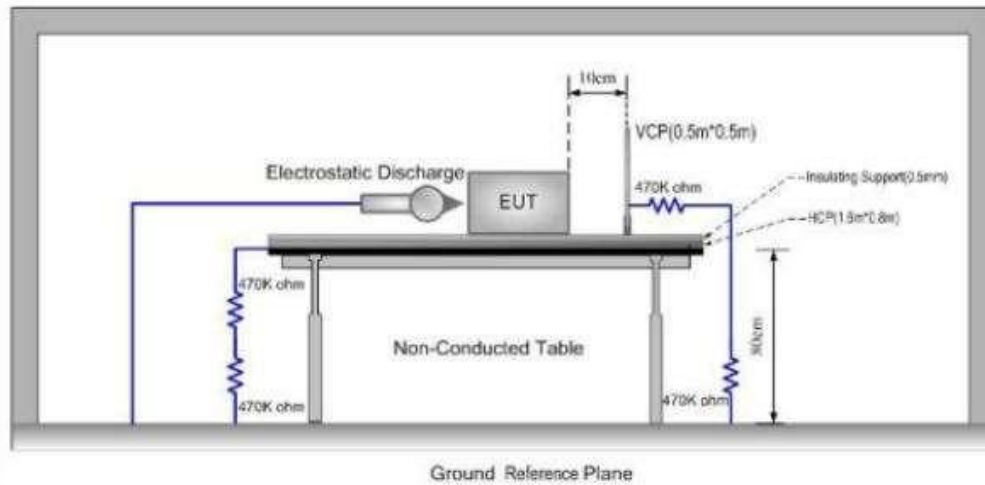
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### ESD Test Procedure

- a. In the case of air discharge testing the climatic conditions shall be within the following ranges:

**Ambient temperature: 15°C to 35°C;**

**Relative humidity: 30% to 60%;**

**Atmospheric pressure: 860 hpa to 1060 hPa**

- b. The test shall be performed with both air discharge and contact discharge. On preselected points at least 10 single discharges (in the most sensitive polarity) shall be applied on air discharge. On preselected points at least 25 single discharges (in the most sensitive polarity) shall be applied on contact discharge.
- c. In the case of contact discharges, the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.
- d. In the case of painted surface covering a conducting substrate, the following procedure shall be adopted:
- If the coating is not declared to be an insulating coating by the equipment manufacturer, then the pointed tip of the generator shall penetrate the coating so as to make contact with the conducting substrate.
  - Coating declared as insulating by the manufacturer shall only be submitted to the air discharge.
  - The contact discharge test shall not be applied to such surfaces.
- e. In the case of air discharges, the round discharge tip of the discharge electrode shall be approached as fast as possible (without causing mechanical damage) to touch the EUT . After each discharge, the ESD generator (discharge electrode) shall be removed from the EUT. The generator is then retriggered for a new single discharge. This procedure shall be repeated until the discharges are completed. In the case of an air discharge test

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### Test Summary

Test Item	Condition	Standard	Result
Radiated EM field Immunity	80MHz to 1000MHz 3V/m	IEC 61000-4- 3:2006+A1:2007+A2:2010	Pass

Remark: 1. the symbol "N/A" in above table means Not Applicable.

2. When determining the test results, measurement uncertainty of tests has been considered

### 1. TEST SET-UP AND OPERATION MODES

#### Principle of Configuration Selection

**Emission:** The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the Operating Instructions.

**Immunity:** The equipment under test (EUT) was configured to the representative operating mode and conditions.

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## IMMUNITY TEST RESULTS

### Description of Performance Criteria

#### Performance criteria A

The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

#### Performance criteria B

After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacturer, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance.

During the test, degradation of performance is allowed. However, no change of operating state or stored data is allowed to persist after the test. If the minimum performance level (or the permissible performance loss) is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

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### Performance criteria C

Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. Functions, and/or information stored in non- volatile memory, or protected by a battery backup, shall not be lost.

### Performance criteria D

Loss of function is which is not self-recoverable, or cannot be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. Functions, and/or information stored in non- volatile memory, or protected by a battery backup, shall is lost.

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### Radio Frequency Electromagnetic Field Immunity Test

**Test Result** : Pass

**Test Procedure** : IEC 61000-4-3:2006+A1:2007+A2:2010

**Performance Criterion** : A Test Site:

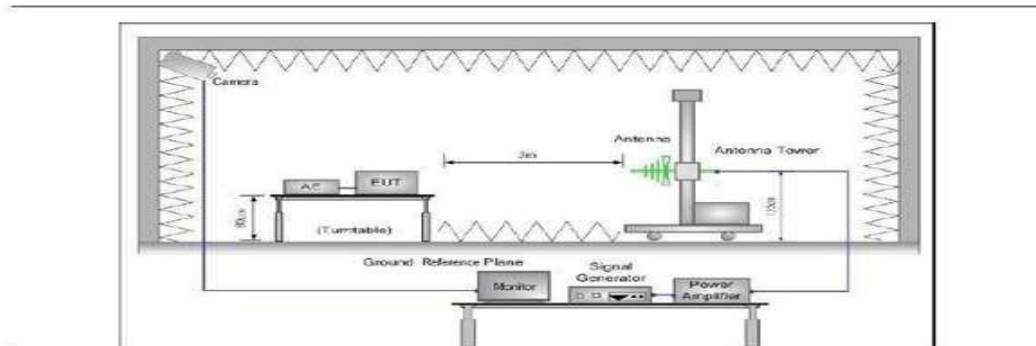
### STC Test Specification

The EUT and its simulators were placed on a turn table which was 0.8 meter above the ground. The

EUT was set 3 m away from the transmitting antenna which was mounted on an antenna tower. Both horizontal and vertical polarizations of the antenna were set on the test. Each of the four sides of the EUT was faced the transmitting antenna and measured individually.

The test was carried out in the Anechoic Chamber which was that of a size adequate to maintain a uniform field of sufficient dimensions with respect to the EUT. Additional absorbers were used to damp reflections in chambers which were not fully lined.

### Test Set-up



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Test data  
M/N : BL-600  
Operation Mode : Mode 1  
Test Voltage : 12VDC  
Temperature (°C) : 24.9  
Relative Humidity (%) : 56  
Atmospheric Pressure (mbar) : 987

Position	Test Level	Frequency Range	Modulated Signal	Freq. Step	Dwell Time	Result
Front	3V/m	80 to 1000 MHz	AM 80%, 1kHz sine wave	1%	3 s	Pass
Right						Pass
Rear						Pass
Left						Pass

Remark: The EUT was operated as intended during and after the test.

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### PHOTOGRAPH



\*\*\*END OF TEST REPORT\*\*\*

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