



Test Report issued under the responsibility of:



<b>TEST REPORT</b> <b>IEC 62368-1</b> <b>Audio/video, information and communication technology equipment</b> <b>Part 1: Safety requirements</b>	
Report Number .....	ES190430974S-1
Date of issue .....	2021-04-22
Total number of pages .....	7
Applicant's name .....	MORNSUN GUANGZHOU SCIENCE & TECHNOLOGY CO., LTD.
Address .....	NO.8, Nanyun Road 4, Huangpu District, GUANGZHOU, GUANGDONG, 510670, CHINA.
<b>Test specification:</b>	
Standard.....	IEC 62368-1:2014 (Second Edition)
Test procedure .....	CB Scheme
Non-standard test method .....	N/A
Test Report Form No. ....	IEC62368_1B
Test Report Form(s) Originator.....	UL(US)
Master TRF .....	2014-03
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<b>General disclaimer:</b>	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.	

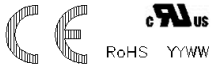

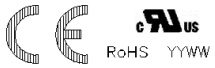
Test Item description .....	AC-DC Converter	
Trade Mark .....	<b>MORNSUN®</b>	
Manufacturer .....	MORNSUN GUANGZHOU SCIENCE & TECHNOLOGY CO., LTD. NO.8, Nanyun Road 4, Huangpu District, GUANGZHOU, GUANGDONG, 510670, CHINA.	
Model/Type reference .....	LO65-10BXX* (XX=05, 09, 12, 15, 24, 48), LO45-10BXX*, (XX=03, 05, 09, 12, 15, 24, 48), (*= -OEM or blank), LO65-10B05-NW* (*= -OEM or blank)	
Ratings .....	Input: 100-240Vac, 50-60Hz, 1.2A for model LO45-10BXX*; 100-240Vac, 50-60Hz, 1.6A for model LO65-10BXX*, LO65-10B05-NW*; Output: See page 7 model list for details.	
Testing procedure and testing location:		
<input checked="" type="checkbox"/> CB Testing Laboratory:	EMTEK (Shenzhen) Co., Ltd	
Testing location/ address .....	Bldg 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China	
<input type="checkbox"/> Associated CB Testing Laboratory:		
Testing location/ address .....		
Tested by (name + signature) .....	Alan Ye / Project Handler	<i>Alan Ye</i>
Approved by (name + signature) .....	William Guo / Reviewer	<i>William Guo</i>
Testing procedure: TMP/CTF Stage 1		
Testing location/ address .....		
Tested by (name + signature) .....		
Approved by (name + signature) .....		
Testing procedure: WMT/CTF Stage 2		
Testing location/ address .....		
Tested by (name + signature) .....		
Witnessed by (name + signature) .....		
Approved by (name + signature) .....		
Testing procedure: SMT/CTF Stage 3 or 4		
Testing location/ address .....		
Tested by (name + signature) .....		
Approved by (name + signature) .....		

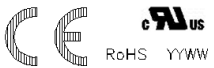


Supervised by (name + signature) .....





<b>List of Attachments (including a total number of pages in each attachment):</b> N/A	
<b>Summary of testing:</b>	
<b>Tests performed (name of test and test clause):</b> N/A	<b>Testing location:</b> N/A
<b>Summary of compliance with National Differences:</b> <b>List of countries addressed: USA/Canada and European group differences.</b>	
<input checked="" type="checkbox"/> The product fulfils the requirements of EN 62368-1:2014+A11:2017. <input checked="" type="checkbox"/> The product fulfils the requirements of UL 62368-1, Second Edition. <input checked="" type="checkbox"/> The product fulfils the requirements of CAN/CSA C22.2 No. 62368-1-14.	




**Copy of marking plate:**

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

<p><b>MORNSUN</b></p> <p>LO65-10B05</p> <p>IN 100-240V~ 1.6A,50-60Hz</p> <p>OUT 5V <math>\equiv</math> /1000mA</p> 	<p><b>MORNSUN</b></p> <p>LO65-10B09</p> <p>IN 100-240V~ 1.6A,50-60Hz</p> <p>OUT 9V <math>\equiv</math> /6600mA</p> 	<p><b>MORNSUN</b></p> <p>LO65-10B12</p> <p>IN 100-240V~ 1.6A,50-60Hz</p> <p>OUT 12V <math>\equiv</math> /5420mA</p> 
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<p><b>MORNSUN</b></p> <p>LO65-10B15</p> <p>IN 100-240V~ 1.6A,50-60Hz</p> <p>OUT 15V <math>\equiv</math> /4340mA</p> 	<p><b>MORNSUN</b></p> <p>LO65-10B24</p> <p>IN 100-240V~ 1.6A,50-60Hz</p> <p>OUT 24V <math>\equiv</math> /2710mA</p> 	<p><b>MORNSUN</b></p> <p>LO65-10B48</p> <p>IN 100-240V~ 1.6A,50-60Hz</p> <p>OUT 48V <math>\equiv</math> /1360mA</p> 
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<p><b>MORNSUN</b></p> <p>LO45-10B03</p> <p>IN 100-240V~ 1.2A,50-60Hz</p> <p>OUT 3.3V <math>\equiv</math> /8000mA</p> 	<p><b>MORNSUN</b></p> <p>LO45-10B05</p> <p>IN 100-240V~ 1.2A,50-60Hz</p> <p>OUT 5V <math>\equiv</math> /8000mA</p> 	<p><b>MORNSUN</b></p> <p>LO45-10B09</p> <p>IN 100-240V~ 1.2A,50-60Hz</p> <p>OUT 9V <math>\equiv</math> /4444mA</p> 	<p><b>MORNSUN</b></p> <p>LO45-10B12</p> <p>IN 100-240V~ 1.2A,50-60Hz</p> <p>OUT 12V <math>\equiv</math> /3750mA</p> 
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<p><b>MORNSUN</b></p> <p>LO45-10B15</p> <p>IN 100-240V~ 1.2A,50-60Hz</p> <p>OUT 15V <math>\equiv</math> /3000mA</p> 	<p><b>MORNSUN</b></p> <p>LO45-10B24</p> <p>IN 100-240V~ 1.2A,50-60Hz</p> <p>OUT 24V <math>\equiv</math> /1875mA</p> 	<p><b>MORNSUN</b></p> <p>LO45-10B48</p> <p>IN 100-240V~ 1.2A,50-60Hz</p> <p>OUT 48V <math>\equiv</math> /940mA</p> 
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**MORNSUN®**

LO65-10B05-NW

INPUT: 100-240Vac Ta:50°C  
(输入) 1.6A, 50/60Hz

OUTPUT: 5V  $\equiv$  6.25A for 100-164Vac   
(输出) 5V  $\equiv$  10A for 165-240Vac

Derating refers to spec

3.15A    

www.mornsun.cn  
MADE IN CHINA (中国制造) RoHS

**Remark:**

For the final production samples, the additional markings which do not give rise to misunderstanding may be added.

<b>TEST ITEM PARTICULARS:</b>	
Classification of use by .....	<input checked="" type="checkbox"/> Ordinary person <input type="checkbox"/> Instructed person <input type="checkbox"/> Skilled person <input type="checkbox"/> Children likely to be present
Supply Connection .....	<input checked="" type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains <input type="checkbox"/> External Circuit –not Mains connected <input type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input type="checkbox"/> ES3
Supply % Tolerance.....	<input checked="" type="checkbox"/> +10%/-10% <input type="checkbox"/> +20%/-15% <input type="checkbox"/> +____%/ -____% <input type="checkbox"/> None
Supply Connection – Type .....	<input type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> direct plug-in <input type="checkbox"/> mating connector <input type="checkbox"/> pluggable equipment type B - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> permanent connection <input type="checkbox"/> mating connector <input checked="" type="checkbox"/> other: building-in equipment, shall evaluated in final system
Considered current rating of protective device as part of building or equipment installation .....	US, CA: 20 A; UK: 13 A; Others: 16 A Installation location: <input checked="" type="checkbox"/> building; <input type="checkbox"/> equipment
Equipment mobility .....	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input checked="" type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in <input type="checkbox"/> rack-mounting <input type="checkbox"/> wall-mounted
Over voltage category (OVC) .....	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other: _____
Class of equipment .....	<input type="checkbox"/> Class I <input checked="" type="checkbox"/> Class II <input type="checkbox"/> Class III
Access location .....	<input type="checkbox"/> restricted access location <input checked="" type="checkbox"/> N/A
Pollution degree (PD) .....	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified maximum operating ambient:	70°C or 50°C
IP protection class .....	<input checked="" type="checkbox"/> IPX0 <input type="checkbox"/> IP____
Power Systems .....	<input checked="" type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT - ____ V L-L
Altitude during operation (m) .....	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> ____ m
Altitude of test laboratory (m) .....	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> ____ m
Mass of equipment (kg) .....	<input checked="" type="checkbox"/> Approx. 99g for model LO65-10BXX 95g for model LO45-10BXX
<b>POSSIBLE TEST CASE VERDICTS:</b>	
- test case does not apply to the test object.....	N/A
- test object does meet the requirement .....	P (Pass)
- test object does not meet the requirement .....	F (Fail)

<b>TESTING:</b>	
Date of receipt of test item.....:	N/A
Date (s) of performance of tests.....:	N/A
<b>GENERAL REMARKS:</b>	
<p>“(See Enclosure #)” refers to additional information appended to the report.  “(See appended table)” refers to a table appended to the report.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p> <p><b>Manufacturer’s Declaration per sub-clause 4.2.5 of IECEE 02:</b></p>	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided .....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable
<b>When differences exist; they shall be identified in the General product information section.</b>	
<b>Name and address of factory (ies) .....</b>	Mornsun Guangzhou Science &Technology Ltd. No.8 Nanyun Road 4, Guangzhou Science Park, Guangzhou 510663, China
<b>GENERAL PRODUCT INFORMATION:</b>	
<p>The official TRF used for this evaluation has not been updated to include CTF information. As a temporary solution the NCB included missing CTF page and informed IECEE Secretariat about the required TRF update.</p> <p><b>Product Description</b></p> <p>This report is amended technically from previous report no. ES190430974S issued on 2019-06-27 (with CB certificate no. DK-85061-UL, issued date 2019-06-27) and ES190430974S-M1 issued on 2019-07-22 (with CB certificate no. DK-85061-M1-UL, issued date 2019-07-22), due to below technical amendment:</p> <ul style="list-style-type: none"> <li>- Added additional model name LO65-10B05-NW*, the new model LO65-10B05-NW* are the same as the old models LO65-10B05* except for the model name.</li> <li>- Added additional nameplate for LO65-10B05-NW*.</li> <li>- Changed of Applicant and Manufacturer form “MORNSUN GUANGZHOU SCIENCE &amp; TECHNOLOGY LTD” to “MORNSUN GUANGZHOU SCIENCE &amp; TECHNOLOGY CO., LTD.”</li> <li>- Changed of Applicant’s and Manufacturer’s address form “5 Kehui St 1 Kehui Development Center Science Ave, Guangzhou Science City Luogang District Guangzhou Guangdong 510000 China.” to “NO.8, Nanyun Road 4, Huangpu District, GUANGZHOU, GUANGDONG, 510670, CHINA.”</li> </ul> <p>No testing was considered necessary on above submitted changes by engineering judgment.</p> <p>The unit covered in this report is a building-in AC-DC Converter used for audio/video, information and communication technology equipment. Electrical components are mounted on PWB, and then housed with enclosure in final system.</p> <p><b>Technical Considerations</b></p> <ol style="list-style-type: none"> <li>1. Maximum operating temperature: 70°C (50% load output current), 50°C (Max. load output current).</li> <li>2. For building-in equipment, temperature of accessible surface tests and Mechanical test for enclosure should be considered in end product.</li> </ol> <p><b>Engineering Conditions of Acceptability</b></p> <ol style="list-style-type: none"> <li>1. The following end-product enclosures are required: Mechanical, Fire, Electrical.</li> <li>2. This equipment was not evaluated for system mounting. When installed in the end product proper evaluation should be considered.</li> </ol>	

**Model Differences**

The models LO65-10B and LO45-10B are identical to each other except model name, output rating, transformer type and some non-critical components.

Unless otherwise specified, all tests were performed on models LO65-10B05, LO65-10B12, LO65-10B48, and LO45-10B03.

Model list:

Input voltage: 100-240Vac 1.6A 50-60Hz				
Part number	Output voltage	Output current	Output power	Transformer type
LO65-10B05*	5V	10.00A	50W	51500366
LO65-10B05-NW*	5V	6.25A for 100-164Vac 10.00A for 165-240Vac	50W	51500366
LO65-10B09*	9V	6.600A	60W	51500367
LO65-10B12*	12V	5.420A	65W	
LO65-10B15*	15V	4.340A	65W	
LO65-10B24*	24V	2.710A	65W	51500368
LO65-10B48*	48V	1.360A	65W	51500369
Input voltage: 100-240Vac 1.2A 50-60Hz				
Part number	Output voltage	Output current	Output power	Transformer type
LO45-10B03*	3.3V	8.000A	26.4W	51500366
LO45-10B05*	5V	8.000A	40W	
LO45-10B09*	9V	4.444A	40W	51500367
LO45-10B12*	12V	3.750A	45W	
LO45-10B15*	15V	3.000A	45W	
LO45-10B24*	24V	1.875A	45W	51500368
LO45-10B48*	48V	0.940A	45W	51500369
* = -OEM or blank, The models with -OEM are all the same with models without -OEM.				

**Additional application considerations – (Considerations used to test a component or sub-assembly) –**