



Test Report issued under the responsibility of:



**TEST REPORT
IEC 62368-1**

**Audio/video, information and communication technology equipment
Part 1: Safety requirements**

Report Number: E135803-A6002-CB-1
Date of issue.....: 2019-09-02
Total number of pages: 156

Applicant's name.....: **SL POWER ELECTRONICS CORP**
Address: **BLDG A
6050 KING DR
VENTURA CA 93003
UNITED STATES**

Name of Test Laboratory: UL Northbrook
preparing the Report: 333 Pfingsten Road, Northbrook, IL, 60062-2096, USA


Test specification:
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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Test Item description	:	POWER SUPPLY
Trade Mark	:	
Manufacturer	:	SL POWER ELECTRONICS CORP BLDG A 6050 KING DR VENTURA CA 93003 UNITED STATES
Model/Type reference	:	GB130QZYY where Z, Z represents A, C, D, E or P, due to different output voltages. YY represents any number from 00 to 99 or blank, which only for market purpose, not influence safety function.
Ratings	:	Input: 100-240 Vac, 50-60 Hz, 2.0A Output: For convection, V5: 5Vdc/1.0A, Max. total power of 100W for V1, V2, V3 and V4 outputs. See model difference for detail. For 200LFM, V5: 5Vdc/1.0A, Max. total power of 130W for V1, V2, V3 and V4 outputs. See model difference for detail
Testing procedure and testing location:		
<input type="checkbox"/>	CB Testing Laboratory:	
Testing location/ address	:	
Tested by (name + signature).....	:	
Approved by (name + signature)	:	
Testing procedure: CTF Stage 1		
Testing location/ address.....	:	
Tested by (name + signature).....	:	
Approved by (name + signature)	:	
Testing procedure: CTF Stage 2		
Testing location/ address.....	:	
Tested by (name + signature).....	:	
Witnessed by (name + signature).....	:	
Approved by (name + signature)	:	

<input checked="" type="checkbox"/>	Testing procedure: CTF Stage 3	
<input type="checkbox"/>	Testing procedure: CTF Stage 4	
Testing location/ address..... :	SL SHANGHAI POWER ELECTRONICS CORP 4TH FLOOR, BLDG 53, 1089 QINZHOU NORTH ROAD, SHANGHAI, 200233, CHINA	
Tested by (name + signature).....:	Xiaodong Liu / Tester	<i>Liu Xiaodong</i>
Witnessed by (name + signature).....:	Jie Qian / Handler	<i>Jie Qian</i>
Approved by (name + signature).....:	Marshal Zhang / Reviewer	<i>Marshal Zhang</i>
Supervised by (name + signature).....:	Jie Qian / Handler	<i>Jie Qian</i>

List of Attachments (including a total number of pages in each attachment):

National Differences (30 pages)

Enclosures (70 pages)

Summary of testing:**Tests performed (name of test and test clause):**

CLASSIFICATION OF ELECTRICAL ENERGY SOURCES (5.2, 5.7)

MAXIMUM OPERATING TEMPERATURE FOR MATERIALS, COMPONENTS AND SYSTEMS (5.4.1.4, 6.2, 9.2.5 ANNEX B.2)

DETERMINATION OF WORKING VOLTAGE (5.4.1.8)

HUMIDITY CONDITIONING (5.4.8)

ELECTRIC STRENGTH TEST (5.4.9)

SAFEGUARDS AGAINST CAPACITOR DISCHARGE AFTER DISCONNECTION OF A CONNECTOR (5.5.2.2)

PROSPECTIVE TOUCH VOLTAGE AND TOUCH CURRENT MEASUREMENT (5.7)

INPUT TEST: SINGLE PHASE (B.2.5)

SIMULATED ABNORMAL OPERATING CONDITIONS (B.3)

SIMULATED SINGLE FAULT CONDITIONS (B.4)

TRANSFORMER OVERLOAD – ALTERNATIVE TEST METHOD (G.5.3.3.3)

Testing Location:

CTF Stage 3: SL SHANGHAI POWER ELECTRONICS CORP

4TH FLOOR, BLDG 53, 1089 QINZHOU NORTH ROAD, SHANGHAI, 200233, CHINA

Summary of compliance with National Differences:**List of countries addressed:** AU,NZ, JP, EU Group Differences, US,CA **The product fulfils the requirements of:** EN 62368-1:2014 + A11:2017

Copy of Marking Plate - Refer to Enclosure titled Marking Plate for copy.

TEST ITEM PARTICULARS:	
Classification of use by	Ordinary person
Supply Connection	AC Mains
Supply % Tolerance	+10%/-10%
Supply Connection – Type	mating connector
Considered current rating of protective device as part of building or equipment installation	20 A; building;
Equipment mobility	for building-in
Over voltage category (OVC)	OVC II
Class of equipment	Class I
Access location	N/A
Pollution degree (PD)	PD 2
Manufacturer’s specified maximum operating ambient (°C)	Max. 50
IP protection class	IPX0
Power Systems	TN
Altitude during operation (m)	5000 m
Altitude of test laboratory (m)	2000 m or less
Mass of equipment (kg)	0.302 max
POSSIBLE TEST CASE VERDICTS:	
- 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)
TESTING:	
Date of receipt of test item..... :	2019-03-26 to 2019-07-03
Date (s) of performance of tests..... :	2019-06-11 to 2019-07-08
GENERAL REMARKS:	
<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>	
Manufacturer’s Declaration per sub-clause 4.2.5 of IEC60068-2-1:	
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 checked="" type="checkbox"/> Yes <input type="checkbox"/> Not applicable

When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies)	SL XIANGHE POWER ELECTRONICS CORP NO.B-02-03,NORTH SIDE OF LANDSCAPE AVE, QIBU DISTRICT, ENVIRONMENTAL INDUSTRIAL PARK XIANGHE HEBEI 065400 CHINA INDUSTRIAS S L S A DE C V CIRCUITO SIGLO XXI 2055 COL PARQUE INDUSTRIAL EX-XXI 21254 MEXICALI BC MEXICO
GENERAL PRODUCT INFORMATION:	
Report Summary	
All applicable tests according to the referenced standard(s) have been carried out.	
Product Description	
POWER SUPPLY utilizing a transformer for reinforced isolation between input and output, intended for building in. A suitable input/output connector is provided for internal connection in the end use product.	
Model Differences	
Model GB130QA, GB130QC, GB130QD, GB130QE, GB130QP are similar to each other except some secondary components and the output voltage and current, see enclosure 7-03 for details	
Additional application considerations – (Considerations used to test a component or sub-assembly) -	
N/A	
Technical Considerations	
<ul style="list-style-type: none"> The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer’s specification of : Max. 50 degree C The product is intended for use on the following power systems : TN Considered current rating of protective device as part of the building installation (A) : 20 Mains supply tolerance (%) or absolute mains supply values : +10%/-10% The equipment disconnect device is considered to be : evaluated in end use product 	
Engineering Conditions of Acceptability	
When installed in an end-product, consideration must be given to the following:	
<ul style="list-style-type: none"> The following product-line tests are conducted for this product : Electric Strength The end-product Electric Strength Test is to be based upon a maximum working voltage of : Primary-Earthed Dead Metal: 347 Vrms, 588 Vpk, Primary-SELV: 347 Vrms, 588 Vpk, , The following output circuits are at ES1 energy levels : All output ports The following output circuits are at PS3 energy levels : All output ports 	

- The maximum investigated branch circuit rating is : 20 A
 - The investigated Pollution Degree is : 2
 - Proper bonding to the end-product main protective earthing termination is : Required
 - An investigation of the protective bonding terminals has : not been conducted
 - The following input terminals/connectors must be connected to the end-product supply neutral : N
 - The following end-product enclosures are required : Mechanical, Electrical, Fire
 - The following magnetic devices (e.g. transformers or inductor) are provided with an OBJY2 insulation system with the indicated rating greater than Class A (105°C) : T1(Class F) , T2(Class F)
 - The equipment is suitable for direct connection to : AC mains supply
 - The power supply was evaluated to be used at altitudes up to : "5,000 m"
 - Clause 5.6.4 and shall be evaluated in end products.
-
- - Different output loading based on convection and 200LFM, see model difference for details.
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- An instructional safeguard shall state in end use product that the fuse is in the neutral, and that the mains shall be disconnected to de-energize the phase conductors

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.) (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.)	
Electrically-caused injury (Clause 5): (Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification) Example: +5 V dc input ES1	
Source of electrical energy	Corresponding classification (ES)
Internal circuit – Primary	ES3
Internal circuit – Secondary	ES1
Output	ES1
Electrically-caused fire (Clause 6): (Note: List sub-assembly or circuit designation and corresponding energy source classification) Example: Battery pack (maximum 85 watts): PS2	
Source of power or PIS	Corresponding classification (PS)
Internal circuit – Primary	PS3
Internal circuit – Secondary	PS3
Injury caused by hazardous substances (Clause 7) (Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.) Example: Liquid in filled component Glycol	
Source of hazardous substances	Corresponding chemical
N/A	N/A
Mechanically-caused injury (Clause 8) (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit MS2	
Source of kinetic/mechanical energy	Corresponding classification (MS)
N/A	N/A
Thermal burn injury (Clause 9) (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.) Example: Hand-held scanner – thermoplastic enclosure TS1	
Source of thermal energy	Corresponding classification (TS)
N/A	N/A
Radiation (Clause 10) (Note: List the types of radiation present in the product and the corresponding energy source classification.) Example: DVD – Class 1 Laser Product RS1	
Type of radiation	Corresponding classification (RS)
N/A	N/A

ENERGY SOURCE DIAGRAM

Indicate which energy sources are included in the energy source diagram. Insert diagram below

ES **PS** **MS** **TS** **RS**

OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	Possible Hazard			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary – Output	ES3: Internal circuit – Primary	N/A	N/A	Reinforce insulation
Ordinary – Earthed part	ES3: Internal circuit – Primary	Basic Insulation	Protective earthing	N/A
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
Internal components	PS3: Internal circuit – Primary PS3: Internal circuit – Secondary	No excessive temperature Complied with 6.3.1	Suitable material Complied with 6.4.6	N/A
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
N/A	N/A	N/A	N/A	N/A
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A
Supplementary Information:				
(1) See attached energy source diagram for additional details.				
(2) “N” – Normal Condition; “A” – Abnormal Condition; “S” Single Fault				