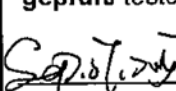



Prüfbericht - Nr.: 16060015 004			Seite 1 von 12 Page 1 of 12		
<i>Test Report No.:</i>					
Auftraggeber: <i>Client:</i>		MPL POWER ELEKTRO Sp. z o.o ul. Wschodnia 4044-119 GLIWICE POLAND			
Gegenstand der Prüfung: <i>Test item:</i>		LED DRIVER			
Bezeichnung: <i>Identification:</i>		GPV-100-12, GPV-100-24		Serien-Nr.: <i>Serial No.:</i>	
				Engineering samples without serial numbers	
Wareneingangs-Nr.: <i>Receipt No.:</i>		174037713		Eingangsdatum: <i>Date of receipt:</i>	
				July 21, 2015	
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of test item at delivery:</i>			The sample is OK for testing and not damaged.		
Prüfört: <i>Testing location:</i>		TÜV Rheinland (Guangdong) Ltd. No.199 Kezhu Road, Guangzhou Science City 510663 Guangzhou China			
Prüfgrundlage: <i>Test specification:</i>		EN 61347-1:2008 (Second Edition) + A1: 2011 + A2: 2013 EN 61347-2-13: 2014			
Prüfergebnis: <i>Test Result:</i>		Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n). The test item passed the test specification(s).			
Prüflaboratorium: <i>Testing Laboratory:</i>		TÜV Rheinland (Guangdong) Ltd. No.199 Kezhu Road, Guangzhou Science City 510663 Guangzhou China			
geprüft/ tested by:			kontrolliert/ reviewed by:		
 Ben Zeng <div style="display: flex; justify-content: space-between; font-size: small;"> Datum Date Name/Stellung Name/Position Unterschrift Signature </div>			 Pony Xiong <div style="display: flex; justify-content: space-between; font-size: small;"> Datum Date Name/Stellung Name/Position Unterschrift Signature </div>		
Sonstiges/ Other Aspects:					
- Details refer to next page.					
<div style="display: flex; justify-content: space-between; font-size: x-small;"> <div> Abkürzungen: P(ass) = entspricht Prüfgrundlage F(ail) = entspricht nicht Prüfgrundlage N/A = nicht anwendbar N/T = nicht getestet </div> <div> Abbreviations: P(ass) = passed F(ail) = failed N/A = not applicable N/T = not tested </div> </div>					
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report relates to the a. m. test item. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.</i>					


Prüfbericht-Nr.: 16060015 004
Test Report No.:

Auftrags-Nr.: 174037713
Order No.:

Seite 2 von 12
Page 2 of 12

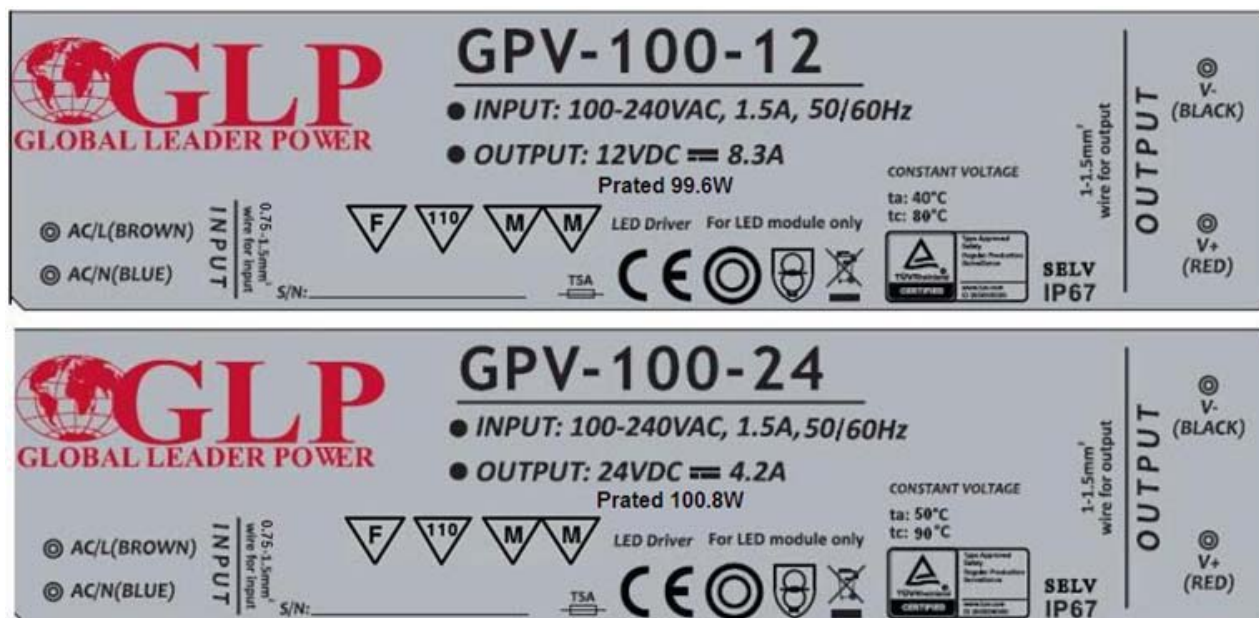
Sonstiges/ Other Aspects:

- This report is based on TUV Bauart-mark report **16060015 002**, and upgrade the standard from 'EN 61347-1:2008 (Second Edition) + A1: 2011 + A2: 2013, EN 61347-2-13: 2006' to '**EN 61347-1:2008 (Second Edition) + A1: 2011 + A2: 2013, EN 61347-2-13: 2014**'. No additionally test needed.
- Add heating test for "MM" mark according to DIN VDE 0710-14.
- Add ANNEX C

Test item description	LED DRIVER
Trade Mark	
Manufacturer	Same as applicant
Model/Type reference	1) GPV-100-12, 2) GPV-100-24
Ratings	Input: 100-240Vac, 50/60Hz, 1.5A; Output: 1) 12Vdc, 8.3A; 2) 24Vdc, 4.2A 1) Rated 99.6W; 2) Rated 100.8W 1) ta=40°C, tc=80°C; 2) ta=50°C, tc=90°C

Copy of marking plate(s):

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.

**Note:**

The product shall be evaluated with end product for the M M mark.

Name and address of factory (ies) : **Changzhou Wujin Hong Guang Radio Co., Ltd.**
No.1 Guiyang Road Qingyang Road Wujin
Changzhou Jiangsu P.R. China

General product information:

Reference original report **16060015 002**

According to DIN VDE 0710-14, the relevant difference are considered:

1. For VDE 0710-14, sub-clause 4.1: The min. cross section of input wire need to be considered.
2. For VDE 0710-14, sub-clause 6.3: The normal and abnormal heating need to be re-evaluated.
Details see appended table.
3. Add the MM mark on the label
4. Add ANNEX C

For the above described change(s) the following was considered to be necessary:

Change	Testing	Comments	Verdict
1.	- Sub-clause 4.1	See report on pages 5.	P
2.	- Sub-clause 6.3	See report on pages 5 to 10.	P
3.	- See page 2 on label	See marketing plate and appended table for detail.	P
4.	- ANNEX C	See report on pages 11 to 12	P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

4.1	The min. cross section of input wire	Min. 0.75mm ²	P
------------	--------------------------------------	--------------------------	----------

6.3	HEATING TEST for MM mark
-----	--------------------------

HEATING TEST NORMAL CONDITION for MM mark (VDE 0710-14)				P		
Check the most unfavourable condition Model: GPV-100-12						
VOLTAGE (V)	1.05 x 240 = 252			INPUT (W)	116.9	
CURRENT (A)	0.735			FREQ. (Hz)	60	
CONDITION/INSTALLATION (voltage, power input, test corner, load, other conditions specified in part 2) The appliance is supplied at 1.05 times rated voltage, mounted as normal use, loaded with rated output, test was stopped until steady condition was established. Test at ta condition						
DURATION						
Test until steady condition – temperature change not more than +/-1K/hour						
OBSERVATION						
Operated device: <input type="checkbox"/> thermostat <input type="checkbox"/> temperature limiter <input checked="" type="checkbox"/> others:						
AMB. TEMP.		t1 =40.0°C (before test)		t2 =40.1°C (after test)		
Ch. No.	Location / Part (by thermocouple)		Temp. (°C)	Temp. rise (K)	Limit (°C)	Pass Fail
1	Enclosure external surface 1		78.0	--	95	Pass
2	Enclosure external surface 2		67.9	--	95	Pass
3	Enclosure external surface 3		74.5	--	95	Pass
4	Enclosure external surface 4		67.6	--	95	Pass
5	Ambient		40.0	--	--	Pass
Note:--						

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

HEATING TEST NORMAL CONDITION for MM mark (VDE 0710-14)						P
Check the most unfavourable condition Model: GPV-100-24						
VOLTAGE (V)	1.05 x 240 = 252			INPUT (W)	114.3	
CURRENT (A)	0.744			FREQ. (Hz)	60	
CONDITION/INSTALLATION (voltage, power input, test corner, load, other conditions specified in part 2) The appliance is supplied at 1.05 times rated voltage, mounted as normal use, loaded with rated output, test was stopped until steady condition was established. Test at ta condition						
DURATION						
Test until steady condition – temperature change not more than +/-1K/hour						
OBSERVATION						
Operated device: <input type="checkbox"/> thermostat <input type="checkbox"/> temperature limiter <input checked="" type="checkbox"/> others:						
AMB. TEMP.		t1 =50.2°C (before test)		t2 =50.7°C (after test)		
Ch. No.	Location / Part (by thermocouple)		Temp. (°C)	Temp. rise (K)	Limit (°C)	Pass Fail
1	Enclosure external surface 1		83.0	--	95	Pass
2	Enclosure external surface 2		73.4	--	95	Pass
3	Enclosure external surface 3		76.9	--	95	Pass
4	Enclosure external surface 4		73.6	--	95	Pass
5	Ambient		50.0	--	--	Pass
Note:--						

IEC 61347-2-13						
Clause	Requirement + Test	Result - Remark	Verdict			
HEATING TEST NORMAL CONDITION for MM mark (VDE 0710-14)			P			
Check the most unfavourable condition Model: GPV-100-12						
VOLTAGE (V)	1.1 x 240 = 264	INPUT (W)	116.7			
CURRENT (A)	0.731	FREQ. (Hz)	60			
CONDITION/INSTALLATION (voltage, power input, test corner, load, other conditions specified in part 2) The appliance is supplied at 1.1 times rated voltage, mounted as normal use, loaded with rated output, test was stopped until steady condition was established. Test at ta condition						
DURATION Test until steady condition – temperature change not more than +/-1K/hour						
OBSERVATION Operated device: <input type="checkbox"/> thermostat <input type="checkbox"/> temperature limiter <input checked="" type="checkbox"/> others:						
AMB. TEMP.	t1 =40.0°C (before test)	t2 =40.4°C (after test)				
Ch. No.	Location / Part (by thermocouple)	Temp. (°C)	Temp. rise (K)			
		Limit (°C)	Pass			
		Fail				
1	Enclosure external surface 1	77.0	--			
2	Enclosure external surface 2	76.2	--			
3	Enclosure external surface 3	72.1	--			
4	Enclosure external surface 4	65.6	--			
5	Ambient	40.0	--			
Note:--						

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

HEATING TEST NORMAL CONDITION for MM mark (VDE 0710-14)					P	
Check the most unfavourable condition Model: GPV-100-24						
VOLTAGE (V)	1.1 x 240 = 264			INPUT (W)	113.8	
CURRENT (A)	0.726			FREQ. (Hz)	60	
CONDITION/INSTALLATION (voltage, power input, test corner, load, other conditions specified in part 2) The appliance is supplied at 1.1 times rated voltage, mounted as normal use, loaded with rated output, test was stopped until steady condition was established. Test at ta condition						
DURATION						
Test until steady condition – temperature change not more than +/-1K/hour						
OBSERVATION						
Operated device: <input type="checkbox"/> thermostat <input type="checkbox"/> temperature limiter <input checked="" type="checkbox"/> others:						
AMB. TEMP.		t1 =50.4°C (before test)		t2 =50.5°C (after test)		
Ch. No.	Location / Part (by thermocouple)		Temp. (°C)	Temp. rise (K)	Limit (°C)	Pass Fail
1	Enclosure external surface 1		83.7	--	95	Pass
2	Enclosure external surface 2		73.3	--	95	Pass
3	Enclosure external surface 3		76.8	--	95	Pass
4	Enclosure external surface 4		73.4	--	95	Pass
5	Ambient		50.0	--	--	Pass
Note:--						

IEC 61347-2-13						
Clause	Requirement + Test	Result - Remark	Verdict			
HEATING TEST ABNORMAL CONDITION for MM mark (VDE 0710-14)			P			
Check the most unfavourable condition Model: GPV-100-12						
VOLTAGE (V)	1.1 x 240 = 264	INPUT (W)	0.54			
CURRENT (A)	0.02	FREQ. (Hz)	60			
CONDITION/INSTALLATION (voltage, power input, test corner, load, other conditions specified in part 2) The appliance is supplied at 1.1 times rated voltage, mounted as normal use, loaded with rated output, test was stopped until steady condition was established. Then the output terminal was short-circuited. Test at ta condition						
DURATION Test until steady condition – temperature change not more than +/-1K/hour						
OBSERVATION Operated device: <input type="checkbox"/> thermostat <input type="checkbox"/> temperature limiter <input checked="" type="checkbox"/> others:						
AMB. TEMP.	t1 =40.4°C (before test) t2 =40.4°C (after test)					
Ch. No.	Location / Part (by thermocouple)	Temp. (°C)	Temp. rise (K)	Limit (°C)	Pass	Fail
1	Enclosure external surface 1	44.1	--	115	Pass	
2	Enclosure external surface 2	41.7	--	115	Pass	
3	Enclosure external surface 3	42.7	--	115	Pass	
4	Enclosure external surface 4	41.9	--	115	Pass	
5	Ambient	40.0	--	--	Pass	
Note:--						

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

HEATING TEST ABNORMAL CONDITION for MM mark (VDE 0710-14)						P		
Check the most unfavourable condition Model: GPV-100-24								
VOLTAGE (V)		1.1 x 240 = 264		INPUT (W)		0.68		
CURRENT (A)		0.02		FREQ. (Hz)		50		
CONDITION/INSTALLATION (voltage, power input, test corner, load, other conditions specified in part 2) The appliance is supplied at 1.1 times rated voltage, mounted as normal use, loaded with rated output, test was stopped until steady condition was established. Then the output terminal was short-circuited. Test at ta condition								
DURATION								
Test until steady condition – temperature change not more than +/-1K/hour								
OBSERVATION								
Operated device: <input type="checkbox"/> thermostat <input type="checkbox"/> temperature limiter <input checked="" type="checkbox"/> others:								
AMB. TEMP.		t1 =50.4°C (before test)		t2 =50.3°C (after test)				
Ch. No.	Location / Part (by thermocouple)			Temp. (°C)	Temp. rise (K)	Limit (°C)	Pass	Fail
1	Enclosure external surface 1			59.0	--	115	Pass	
2	Enclosure external surface 2			57.1	--	115	Pass	
3	Enclosure external surface 3			57.4	--	115	Pass	
4	Enclosure external surface 4			57.1	--	115	Pass	
5	Ambient			50.0	--	--	Pass	
Note:--								

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
C	ANNEX C – PARTICULAR REQUIREMENTS FOR ELECTRONIC LAMP CONTROLGEAR WITH MEANS OF PROTECTION AGAINST OVERHEATING		P
C3	GENERAL REQUIREMENTS		N/A
C3.1	Thermal protection means integral with the convertor, protected against mechanical damage	No such marking	N/A
	Renewable only by means of a tool		N/A
	If function depending on polarity, for cord-connected equipment protection means in both leads		N/A
	Thermal links comply with IEC 60691		N/A
	Electrical controls comply with IEC 60730-2-3		N/A
C3.2	No risk of fire by breaking (clause C7)		N/A
C5	CLASSIFICATION		P
	a) automatic resetting type		—
	b) manual resetting type		—
	c) non-renewable, non-resetting type		—
	d) renewable, non-resetting type		—
	e) other type of thermal protection; description .. :	The EUT protected by electronic circuit	P
C6	MARKING		P
C6.1	Symbol for temperature declared thermally protected ballasts		P
C6.2	Declaration of the type of protection provided	Provided on user manual	P
C7	LIMITATION OF HEATING		P
C7.1	Preselection test:		P
	Test sample placed for at least 12 h in an oven having temperature ($t_c - 5$) K		P
	No operation of the protection device		P
C7.2	Functioning of protection means:		P
	Normal operation of the sample in a test enclosure according to Annex D at an ambient temperature such that ($t_c + 0; -5$) °C is obtained		P
	No operation of the protection device		P
	Introducing of the most onerous test condition determined during test of clause 14		P
	Output of windings connected to the mains supply short-circuited, and other part of the convertor operated under normal conditions		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Increasing of the current through the windings continuously until operation of the protection means		N/A
	Continuous measuring of the highest surface temperature		N/A
	Ballasts according to C5 a) or C5 e) operated until stable conditions are achieved		N/A
	Automatic-resetting thermal protectors working 3 times		N/A
	Ballasts according to C5 b) working 6 times		N/A
	Ballasts according to C5 c) and C5) d) working once		N/A
	Highest temperature does not exceed the marked value		P
	Any overshoot of 10% over the marked value within 15 min		P