



Test Report issued under the responsibility of:

NCB TÜV SÜD PSB Pte Ltd
1 Science Park Drive, Singapore 118221



TEST REPORT
IEC 61347-2-13
Part 2: Particular requirements:
Section Thirteen – d.c. or a.c. supplied electronic controlgear for
LED modules

Report Number: 077-2049216-001
Date of issue: 2016-03-16
Total number of pages 11 pages

Applicant's name.....: SOLUM Co., Ltd.
Address: 150, Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do,
16674, Republic of Korea

Test specification:
Standard: IEC 61347-2-13 (First Edition):2006 used in conjunction with
IEC 61347-1 (Second Edition):2007+A1:2010+A2:2012
Test procedure: CB Scheme
Non-standard test method.....: N/A

Test Report Form No.....: IEC61347_2_13D
Test Report Form(s) Originator.....: Intertek Semko AB
Master TRF: 2013-10

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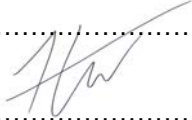
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This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description: LED CONVERTER
Trade Mark: 
Manufacturer: Same as Applicant
Model/Type reference: OLW160P351N1A
Ratings: Input Rating: 110-240 V a.c.; 50/60Hz; 17 W; Max. 0.35 A, PF=0.9;
ta=-40 °C - +50 °C; tc=+85 °C
Output Rating: Vout: 23-41 V d.c. / 0.35 A, 15 W
Volp: Max.53 V d.c

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

Testing procedure and testing location:	
<input checked="" type="checkbox"/> CB Testing Laboratory: Testing location/ address: #315 and 316, MARIO Tower, 222-12, Guro-dong, Guro-Gu, Seoul, Korea <input type="checkbox"/> Associated CB Laboratory: Testing location/ address: N/A Tested by (name + signature): James Lee Approved by (+ signature).....: Martin Kim	TÜV SÜD Korea Laboratory (TKL)  
<input type="checkbox"/> Testing procedure: TMP Testing location/ address: N/A Tested by (name + signature): N/A Approved by (+ signature).....: N/A
<input type="checkbox"/> Testing procedure: WMT Testing location/ address: N/A Tested by (name + signature): N/A Witnessed by (+ signature): N/A Approved by (+ signature).....: N/A
<input type="checkbox"/> Testing procedure: SMT Testing location/ address: N/A Tested by (name + signature): N/A Approved by (+ signature).....: N/A Supervised by (+ signature): N/A



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

Remark 1: This test report contains a total 11 pages.

Summary of testing:

Tests performed (name of test and test clause):

N/A

Testing location:

As above testing laboratory

Summary of compliance with National Differences:

List of countries addressed:








European group differences and national differences

The product fulfils the requirements of EN 61347-2-13:2006 used in conjunction with EN 61347-1:2008 + A1:2011 + A2:2013

IEC 61347-2-13			
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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>L LIVE (흑색, Black)</p> <p>N Neutral (백색, White)</p> <p>PRI_정격입력 U_{in} : 110-240V~ 50 / 60Hz I_{in} : MAX 0.35A 0.078A...P_{out} : 14W 0.05A...P_{out} : 8.5W P_{in} : 17W λ_역률 : 0.9</p>	 <p>CAUTION (주의사항) Constant Current SELV-equivalent control gear Suitable for dry and damp location Use for LED Module only Do not open the case</p> <p>www.solu-m.com AS: +82-1588-0502 Made in China Dongguan SOLUM Electronics Co., Ltd.</p>	<p>LED CONVERTER 조명기구용 컨버터 (LED 램프용) Constant Current (정전류 방식) Flickerless</p> <p>Model/모델 : OLW160P351N1A Name/기종 : PSOV160351A</p> <p>SELV    IP67</p> <p>   tc t₃ : -40 - 50°C t_c : 85°C</p>	<p>SEC_정격출력 P_{out} : 15 W I_{out} : 0.35 A V_{out} : 23-41V \equiv V_{OLP} : MAX 53V\equiv (OLP:Open Lamp_무부하)</p> <p>LED - L (Blue, 청색)</p> <p>LED + L (Red, 적색)</p>
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Test item particulars

Classification of installation and use : Independent SELV controlgear

Supply Connection : Insulated wires

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 : N/A

Date (s) of performance of tests..... : N/A



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General remarks:

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 testing laboratory.

"(See Enclosure #)" refers to additional information appended to the report.

"(See appended table)" refers to a table appended to the report.

Throughout this report a comma / point is used as the decimal separator.

Clause numbers between brackets refer to clauses in IEC 61347-1

Remark 1 – This modification report is to supplement the earlier CB Ref. Cert. No. SG-LE-01560 (Test Report Ref. No.: 077-2049216-000)

- The following is changed. (it is not affect to safety)

Component	Before	After
AC input wire	Myoungin Industry Co., Ltd. (Min.300 V, 105 °C, 0.75 mm ²)	Samwon Electric Co., Ltd. (Min.300 V, 105 °C, 1.0 mm ²)

Manufacturer's Declaration per sub-clause 4.2.5 of IEC 61347-2-13:

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..... :
 Yes
 Not applicable

When differences exist; they shall be identified in the General product information section.



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

Name and address of factory (ies) : Factory 1: Same as Applicant.
 Factory 2: Dongguan Solum Electronics Co., Ltd.
 Hengkeng Management Area, Liaobu Town,
 Dongguan City, Guangdong Province 523413
 People's Republic of China
 Factory 3: Dongguan Solytech Enterprise
 Corporation
 Hong Men Shan Industrial Area, Chang Shan Tou
 Management Area, Qing Xi Town, Dong Guan City,
 Guang Dong Province 523661 People's Republic of
 China
 Factory 4: Dongguan Aptech Electronics Co., Ltd.
 Jinfu 2 Road, TangChun East Area, TangChun
 Village, LiaoBu Town 523407 DongGuan City,
 GuangDong Province, People's Republic of China
 Factory 5: Dongguan Yingju Power Co., Ltd.
 No.6 Yongxing Road, Shayao Village, Shijie Town,
 Dongguan City, Guangdong Province, 523292
 People's Republic of China
 Factory 6: Dongguan Towada Electronics Co., Ltd.
 Fu Da Ind, Zhangyang District, Zhangmutou,
 Dongguan 523636 People's Republic of China
 Factory 7: Dongguan City Yingju Electronics Co.
 Ltd.
 Yewuji Village, Sijia, Shijie Town Dongguan,
 Guangdong 523300 People's Republic of China
 Factory 8: Dongguan Samsung Electro-Mechanics
 Co., Ltd.
 Hengkeng Management Area, Liaobu Town,
 Dongguan City, Guangdong Province 523413
 People's Republic of China

General product information:

1. The product was independent type LED control gear and prepared for Class II construction.
2. User's manual is not provided and should be considered in the end product.
3. All requirements should be fulfilled to standard of IEC 61347-2-13:2006 used in conjunction with IEC 61347-1 (Second Edition): 2007 + A1:2010 + A2:2012 when installing in the end product.
4. The primary and secondary wire ends should be evaluated in the end assembly.

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

	ANNEX 1: components		P
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object/part No.	code	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity
AC input wire	A	Kiseong cable inc	1015	Min.300 V, 18 AWG, Min. 90 °C	UL 758	UL/cUL
Alternate	D	Weihaishi Honglin Wire & Cable	1015	Min.300 V, 18 AWG, Min. 90 °C	UL 758	UL/cUL
Alternate	D	Hae Kwang Cable	1015	Min.300 V, 18 AWG, Min. 90 °C	UL 758	UL/cUL
Alternate	D	Shinhwa electric wire co ltd	1015	Min.300 V, 18 AWG, Min. 90 °C	UL 758	UL/cUL
Alternate	D	Dae Young Wire (Tianjin)	1015	Min.300 V, 18 AWG, Min. 90 °C	UL 758	UL/cUL
Alternate	D	Wonderful hi- tech co ltd	1015	Min.300 V, 18 AWG, Min. 90 °C	UL 758	UL/cUL
Alternate	D	Eleteck Wire & Cable Co., Ltd.	1015	Min.300 V, 18 AWG, Min. 90 °C	UL 758	UL/cUL
Alternate	D	LTK Wiring Co., Ltd.	1015	Min.300 V, 18 AWG, Min. 90 °C	UL 758	UL/cUL
Alternate	D	Wonderful Hi- Tech Co., Ltd.	1015	Min.300 V, 18 AWG, Min. 90 °C	UL 758	UL/cUL
Alternate	D	Shenzhen Linoya Electronic Co., Ltd.	1015	Min.300 V, 18 AWG, Min. 90 °C	UL 758	UL/cUL
Alternate	D	KDK	SJT	Min.300 V, 105 °C, 18AWG	UL 758	UL/cUL

IEC 61347-2-13						
Clause	Requirement + Test			Result - Remark	Verdict	
object/part No.	code	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity
Alternate	D	Do Woo Electric Wire Co., Ltd	2517	Min.300 V, 105 °C, 18AWG	UL 758	UL/cUL
Alternate	D	DOWOO CO., LTD.	UL 2517	Min.300 V, 105 °C, 18AWG	UL 758	UL/cUL
Alternate	D	KISEONG CABLE CO LTD.	60227 IEC 53	Min.300 V, 105 °C, 0.75 or 1.0 mm ²	K60227-1	KC
Alternate	D	Ki Seong	60227 KSC IEC 08	Min.300 V, 90 °C, 0.75 or 1.0 mm ²	K60227-1	KC
Alternate	D	Hae Kwang Cable	AWM 1618	Min.300 V, 18 AWG, 90 °C	UL 758	CSA,UL
Alternate	D	Changshu Hong-Lin Cable Co., Ltd	HVSF	Min.300 V, 90 °C, 0.75 or 1.0 mm ²	JIS C 3306	PSE
Alternate	D	Dae Young Wire (Tianjin)	HVSF	Min.300 V, 90 °C, 0.75 or 1.0 mm ²	JIS C 3306	PSE
Alternate	D	Thai Wonderful Wire Cable Co., Ltd	HVSF	Min.300 V, 90 °C, 0.75 or 1.0 mm ²	JIS C 3306	PSE
Alternate	D	Changshu Hong-Lin Wire & Cable Co., Ltd	60227 IEC 06	Min.300 V, 90 °C, 0.75 or 1.0 mm ²	GB5023.3	CCC
Alternate	D	LTK Cable	60227 IEC 08	Min.300 V, 90 °C, 0.75 or 1.0 mm ²	GB5023.3	CCC
Alternate	D	Samwon Electric Cable	60227 IEC 08	Min.300 V, 90 °C, 0.75 or 1.0 or 1.5 mm ²	KS C IEC60227-3	IEC,KC
Alternate	D	Doowon Cable	60227 IEC 08	Min.300 V, 90 °C, 0.75 or 1.0mm ²	KS C IEC60227-3	IEC,KC
Alternate	D	Dae Young Wire	60227 IEC 08	Min.300 V, 90 °C, 0.75 or 1.0 mm ²	KS C IEC60227-3	IEC,KC

IEC 61347-2-13						
Clause	Requirement + Test			Result - Remark	Verdict	
object/part No.	code	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity
Alternate	D	Shenzhen linoya electronic Co., Ltd.	2517	Min.300 V,105 °C, 18AWG	UL 758	UL/cUL
Alternate	D	Shenzhen linoya electronic Co., Ltd.	60227 IEC 53	Min.300 V, 105 °C, 0.75 or 1.0 mm ²	K60227-1	KC
Alternate	D	Samwon Electric Co., Ltd.	60245 IEC 57	Min.300 V, 105 °C, 1.0 mm²	KS C IEC60245-4	KC
Fuse (F01)	A	Littelfuse Phils. Inc.	369	300 V, T3.15AL	IEC 60127-3	SEMKO
Alternate	D	Conquer Electronics Co., Ltd	MST series		IEC 60127-3	SEMKO
Varistor (VAR1)	A	Thinking Electronics Industrial Co., Ltd	TVR10751	615 Vd.c 2.5kA,	IEC 61051-2	VDE
X-Capacitor (CX1)	A	Cowell Fashion Co., Ltd. Pilkor Electronics	PCX2 337	275 Vac, 100 nF	IEC 60384-14 EN 60384-14	ENEC
Alternate	D	ZhuHai Sung Ho Electronics Co. Ltd	CMPP			VDE
Coupling Capacitor (CY1,CY2)	A	Dong Il Electronics Co., Ltd.	DA	Max. 3.3 nF, 400 Vac, Y1	IEC 60384-14 EN 60384-14	ENEC 14, SEMKO, VDE
Alternate	D	Walsin Technology Corporation. (POE)	AH			VDE,
Line Choke (LF1)	C	Li Shin Electronic Limited	8013T-252L (Marked:252L)	Min.125 °C	IEC 61347-1 IEC 61347-2- 13	Tested in apparatus
Alternate	D	Kwang Sung Electronics H.K Co. Limited	8013T-252K (Marked:152K)			
Line filter (LX1)	A	TNC Co., Ltd	CV1408360MK 02DD	Min.130 °C	IEC 61347-1 IEC 61347-2- 13	Tested in apparatus
Line filter (LX2,LX3)	C	TNC Co., Ltd	PVA30180B1	Min.130 °C	IEC 61347-1 IEC 61347-2- 13	Tested in apparatus

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Clause	Requirement + Test			Result - Remark	Verdict	
object/part No.	code	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity
Alternate	D	Kwang Sung Electronics H.K Co. Limited	KV0830180			
PFC (L01)	C	Li Shin Electronic Limited	LL13K-4IND	Min.130 °C	IEC 61347-1, IEC 61347-2- 13	Tested in apparatus
Alternate	D	NamYang Electronics Co., Ltd				
Bridge Diode (BD1)	C	Lite On	KBP206G	Min. 600 V, Max. 2.0 A	IEC 61347-1, IEC 61347-2- 13	Tested in apparatus
Alternate	D	Interchangeable	Interchangeable			
EI-capacitor (C71)	C	RUBYCON	BXF	Min. 450V, 22 µF,105 °C	IEC 61347-1, IEC 61347-2- 13	Tested in apparatus
Alternate		SAMYOUNG	NFR			
Alternate		Interchangeable	Interchangeable			
FET (Q02)	C	MAGNACHIP	MMF80R900PT H	Min. 800 V Max. 7 A	IEC 61347-1, IEC 61347-2- 13	Tested in apparatus
Alternate	D	ST	STF6N80K5			
Alternate	D	AUK	SMK0780FD			
Alternate	D	Interchangeable	Interchangeable			
Transformer (T01)	C	Dong Guan Top Nation Electronics Limited	LL13KU-5FM	Class B	IEC 61347-1, IEC 61347-2- 13	Tested in apparatus
Alternate	D	Huizhou Li Shin Electronic Co Ltd.	LL13KU-5FM			
PCB	A	Kingboard Laminates Holdings Ltd	KB-5150&	Min. V-0, 130 °C, CTI, PTI > 600	UL 94, UL 746	UL (E123995)
Alternate	D	Interchangeable	Interchangeable			
Insulation sheet	A	SABIC JAPAN L L C	FR700	Min. V-0, 130 °C, Min 0.43 mm thick.	UL 94	UL (E207780)
Alternate	D	Interchangeable	Interchangeable			

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Clause	Requirement + Test			Result - Remark	Verdict	
object/part No.	code	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity
Potting Compound	A	Dow Corning Corp.	170#	Min. 170 °C,	UL 746	UL (E40195)
Alternate	D	Dow Corning Korea Ltd.	CN-8760 G	Min. 150 °C,		UL (E111943)
Output connector *Optional	A	Japan solderless terminal mfg co ltd	JPWF Series	Max. 100 V d.c, 3 A	IEC 61347-1, IEC 61347-2- 13	Tested in apparatus
Alternate	D	Interchangeable	Interchangeable			
Supplementary information: Bold characters are alternation or alteration of components.						

The codes above have the following meaning:

- A - The component is replaceable with another one, also certified, with equivalent characteristics
- B - The component is replaceable if authorised by the test house
- C - Integrated component tested together with the appliance
- D - Alternative component