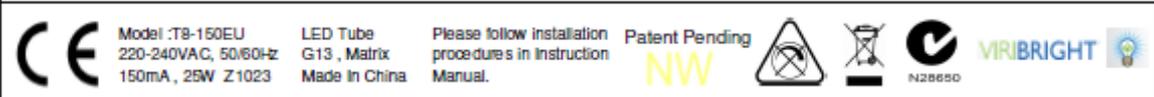
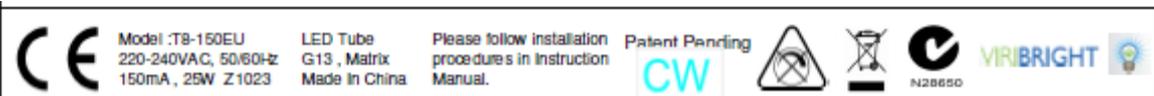


TEST REPORT EN 62031 LED modules for general lighting – Safety specifications	
Report Reference No	3007562.51-QUA/LI
Date of issue.....	2011-03-28
Total number of pages	21 pages
CB Testing Laboratory	DEKRA Certification Hong Kong Limited
Address	Unit 1-14, 6/F., Fuk Shing Commercial Building, 28 On Lok Mun Street, On Lok Tsuen, Fanling, N.T., Hong Kong
Applicant's name	Matrix Lighting Limited
Address	Room 223-231, 2/F., East Wing, Tsim Sha Tsui Centre, 66 Mody Road, Tsim Sha Tsui East, Kowloon, Hong Kong.
Test specification:	
Standard	EN 62031:2008
Test procedure	LVD
Non-standard test method.....	N/A
Test Report Form No	IEC62031A
Test Report Form(s) Originator	Nemko AS
Master TRF	Dated 2008-10
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Test item description	5 Feet LED tube
Trade Mark	VIRIBRIGHT
Manufacturer	Matrix Lighting Limited
Factory.....	1) Zhong Shan Ban Fu Micami Toys Factory Sha Guo Industrial Zone, Ban Fu Country, ZhongShan City, Guangdong Province, China 2) ZhongShan Wei Heng Plastic Industry Co.,Ltd. 172 North Banfu Road, Banfu town, Zhongshan, Guangdong, China
Model/Type reference.....	T8-150EU
Ratings	220-240 Vac; 50 / 60 Hz; 150 mA; 25 W; G13

Testing procedure and testing location:	
<input checked="" type="checkbox"/> CB Testing Laboratory: Testing location/ address :	DEKRA Certification Hong Kong Limited Unit 1-14, 6/F., Fuk Shing Commercial Building, 28 On Lok Mun Street, On Lok Tsuen, Fanling, N.T., Hong Kong
<input type="checkbox"/> Associated CB Test Laboratory: Testing location/ address :	Tested by (name + signature) : Roy Yip  Approved by (+ signature) : Jimmy Chu 
<input type="checkbox"/> Testing procedure: TMP Tested by (name + signature) : Approved by (+ signature) : Testing location/ address :	
<input type="checkbox"/> Testing procedure: WMT Tested by (name + signature) : Witnessed by (+ signature) : Approved by (+ signature) : Testing location/ address :	
<input type="checkbox"/> Testing procedure: SMT Tested by (name + signature) : Approved by (+ signature) : Supervised by (+ signature) : Testing location/ address :	
<input type="checkbox"/> Testing procedure: RMT Tested by (name + signature) : Approved by (+ signature) : Supervised by (+ signature) : Testing location/ address :	

Summary of testing:	
<p>Tests performed (name of test and test clause):</p> <p>EN 62031:2008</p> <p>EN 61195:1999</p>	<p>Testing location:</p> <p>DEKRA Certification Hong Kong Limited Unit 1-14, 6/F., Fuk Shing Commercial Building, 28 on Lok Mun Street, On Lok Tsuen, Fanling, N.T. Hong Kong</p>
<p>Summary of compliance with National Differences:</p> <p>The samples tested comply with the requirements of EN standard.</p>	
<p>Copy of marking plate.</p> <p>Rating on LED tube</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">  </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">  </div> <div style="border: 1px solid black; padding: 5px;">  </div>	

Test item particulars	5 Feet LED tube		
Classification of installation and use	Class II – semi-luminaire		
Supply Connection.....	G13 lampholder		
.....	:		
.....	:		
Possible test case verdicts:			
- test case does not apply to the test object.....	N/A (Not applicable)		
- test object does meet the requirement	P (Pass)		
- test object does not meet the requirement	F (Fail)		
Testing			
Date of receipt of test item	2011-02-25		
Date (s) of performance of tests	2011-02-25 to 2011-03-25		
General remarks:			
<p>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.</p> <p>Throughout this report a comma (point) is used as the decimal separator.</p>			
General product information:			
5 Feet LED tube with integral LED driver.			
Models	Rating	Total length	Color of LED
T8-150EU	220-240 V; 50 / 60 Hz; 150 mA; 25 W; G13	1,5 m	3000 K; 4000 K; 5600 K
NOTE: Clear installation instruction and warnings are provided with the products.			

EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		—
4.4	Integral modules treated as part of luminaires defined in clause 0.5 of IEC 60598-1		—
4.5	Independent modules complies with requirements in IEC 60598-1		—
5	GENERAL TEST REQUIREMENTS		—
5.5	SELV-operated LED modules comply with Annex I of IEC 61347-2-13	(see Annex B)	—
6	CLASSIFICATION		—
	Built-in module	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
	Independent module	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	Integral module	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	For Integral module; Note to 1.2.1 in IEC 60598-1 applies.		—

EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict

7	MARKING		—
7.1	Mandatory markings:		P
	- mark of origin		P
	- model number, type reference	T8-150EU	P
	- rated supply voltage (V)	220-240 Vac	P
	- rated supply current (A)	150 mA	P
	- rated input power (W)	25 W	P
	- nominal power		P
	- indication of connections, wiring diagram		N/A
	- value of t_c		N/A
	- eye protection	See EN 62471 report	P
	- marking of built-in modules only		N/A
7.2	- location of marking		P
7.3	Marking durable and legible		P
	Rubbing 15 s water, marking legible		P

8	SCREW TERMINALS		—
	Compliance with section 14 of IEC 60598-1		N/A
	SCREWLESS TERMINALS		N/A
	Compliance with section 15 of IEC 60598-1		N/A
	CONNECTORS		N/A
	Compliance with IEC 60838-2-2		N/A

EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict

9	PROVISION FOR PROTECTIVE EARTHING		—
	External metal parts connected to the earth terminal:		N/A
	- compliance with 7.2.1 in IEC 60598-1		N/A
	Test with a current of 10 A between earthing terminal and each of the accessible metal parts; measured resistance (Ω): $< 0,5 \Omega$		N/A
	Protective earth, symbol		N/A
	Terminal complying with clause 8 in Part 1		N/A
	Locked against loosening and not possible to loosen by hand		N/A
	Not possible to loosen clamping means unintentionally on screwless terminals		N/A
	Earthing via means of fixing		N/A
	Earthing terminal only used for the earthing of the control gear		N/A
	All parts of material minimizing the danger of electrolytic corrosion		N/A
	Made of brass or equivalent material		N/A
	Contact surface bare metal		N/A
	Conductors by tracks on printed circuit boards:		N/A
	- a.c. current of 25 A for 1 min between earthing terminal and accessible metal parts		N/A
	- compliance with clause 7.2.1 in IEC 60598-1		N/A

8 (10)	PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS		—
	Protection against accidental contact with live parts in compliance with IEC 61347-1 (clause numbers between parentheses refer to IEC 61347-1)		P
- (10.1)	Controlgear protected against accidental contact with live parts		P
- (A1)	Current measured according to IEC 60990, figure 4 and clause 7.1: max. 0,7 mA (peak) or 2,0 mA d.c., for $f \geq 1000$ Hz max. 70 mA	0,1 mA	P
- (A2)	Voltage at 50 k Ω (V): max. 34 V (peak)	0,03 V	P
	Lacquer or enamel not used for protection or insulation		P
	Adequate mechanical strength on parts providing protection		P

EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict
- (10.2)	Capacitors > 0,5 F: voltage after 1 min (V): < 50 V :	0,04 V	P
8.1 (-)	SELV-equivalent controlgear accessible parts are insulated from live parts by double or reinforced insulation according 8.6 and 13.1 in IEC 60065		N/A
8.2 (-)	Exposed terminals of SELV or SELV-equivalent controlgear are allowed if: - the rated or maximum output voltage does not exceeding 25 V r.m.s. - the no-load output voltage does not exceed 30 V r.m.s. or $33 \sqrt{2}$ V peak		N/A
	Insulated terminals if rated output voltage >25 V		N/A
	One capacitor Y1 or two capacitors Y2 of the same values used in series between SELV or SELV-equivalent output and primary circuits - Capacitor complying with IEC 60384-14 - Other components bridging the separating transformer complying with EN 60065, clause 14		N/A

11	MOISTURE RESISTANCE AND INSULATION		—
	Protection against moisture and insulation in compliance with Clause 11, IEC 61347-1		P
	After storage 48 h at 91-95% relative humidity and 20-30 °C measuring of insulation resistance with d.c. 500 V (MΩ): ≥ 2 MΩ :	99 GΩ	P
	Adequate insulation between input and output terminals not bounded together in SELV-equivalent controlgear		P
	For double or reinforced insulation the resistance exceeds 4 MΩ		P

EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict

12	ELECTRIC STRENGTH		—
	Electric strength in compliance with Clause 12 of IEC 61347-1		P
	Immediately after clause 11 electric strength test for 1 min		P
	Working voltage ≤ 42 V, test voltage 500 V		N/A
	Working voltage > 42 V, test voltage (V): 2U + 1000 V		N/A
	Reinforced insulation, test voltage (V):	3230 V	P
	No flashover or breakdown		P
	Windings in separating transformers in SELV-equivalent control gear according to 14.3.2 of EN 60065		N/A

13	FAULT CONDITIONS		—
13.1	In compliance with IEC 61347-1 (clause numbers between parentheses refer to IEC 61347-1)		P
	When operated under fault conditions the LED-module:		P
	- does not emit flames or molten material		P
	- does not produce flammable gases		P
	- protection against accidental contact not impaired		P
	Thermally protected controlgear does not exceed the marked temperature value		N/A
	Fault conditions: capacitors, resistors or inductors without proof of compliance with relevant specifications have been short-circuited or disconnected	(see appended table)	P

EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict
- (14.1)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (except between live parts and accessible metal parts)	(see appended table)	N/A
	Distances on printed boards provided with coating according to IEC 60664-3		N/A
- (14.2)	Short-circuit or interruption of semiconductor devices	(see appended table)	P
- (14.3)	Short-circuit across insulation consisting of lacquer, enamel or textile	(see appended table)	N/A
- (14.4)	Short-circuit across electrolytic capacitors	(see appended table)	P
- (14.5)	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		P
	After the tests the insulation resistance with d.c. 500 V (MΩ) are ≥ 1 MΩ	99 GΩ	P
	Temperature declared thermally protected LED-modules fulfil the requirements in Annex C of IEC 61437-1		N/A
13.2	Module withstands overpower condition >15 min.		P
	Module with automatic protective device or power limiter, test performed 15 min. at limit.		P
	During the tests, tissue paper, spread below module, does not ignite		P
15	CONSTRUCTION		—
	Wood, cotton, silk, paper and similar fibrous material not used as insulation		P

EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict

16	CREEPAGE DISTANCES AND CLEARANCES		—
	Creepage and distances and clearances in compliance with IEC 60598-1		P
	Class of protection	Class II	—
	Working voltage (V)	220 - 240 V	—
	Voltage form	Sinusoidal	—
	PTI	< 600	—
	Rated pulse voltage (kV)	—	—
	(1) Live parts of different polarity: cr (mm); cl (mm)	Cr > 2,5 mm Cl > 1,5 mm	P
	(2) Live parts and accessible parts: cr (mm); cl (mm)	Cr > 5,0 mm Cl > 3,0 mm	P
	(3) Parts becoming live: cr (mm); cl (mm) ... :	Cr > 2,5 mm Cl > 1,5 mm	P
	(4) Outer surface of cable: cr (mm); cl (mm) :		N/A
	(5) Live parts of switches: cr (mm); cl (mm) :		N/A
	(6) Live parts and supporting surface: cr (mm); cl (mm)	Cr > 5,0 mm Cl > 3,0 mm	P

17 (17)	SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS		—
	Screws, current-carrying parts and connections in compliance with IEC 60598-1 (clause numbers between parentheses refer to IEC 60598-1)		P
(4.11)	Electrical connections:		P
(4.11.1)	Contact pressure		P
(4.11.2)	Screws:		P
	- self-tapping screws		P
	- thread-cutting screws		N/A
	- at least two self-tapping screws		N/A
(4.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
(4.11.4)	Material of current-carrying parts		P
(4.11.5)	No contact to wood		N/A
(4.12)	Mechanical connections and glands:		P
(4.12.1)	Mechanical stress		P

EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict
	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: part; torque (Nm)		N/A
	Torque test: part; torque (Nm)		N/A
	Torque test: part; torque (Nm)		N/A
(4.12.2)	Screw diameter < 3 mm screwed into metal		N/A
(4.12.3)	Void		—
(4.12.4)	Locked connections		N/A
(4.12.5)	Screwed glands: force (N)		N/A

18 (18)	RESISTANCE TO HEAT, FIRE AND TRACKING		—
	Resistance to Heat, Fire and Tracking in compliance with IEC 61347-1 (clause numbers between parentheses refer to IEC 61347-1)		P
(18.1)	Parts of insulating material retaining live parts in position, ball-pressure test:		P
	- part; test temperature (C)	PCB; 125 C	P
	- part; test temperature (C)		N/A
(18.2)	Printed boards in accordance with IEC 60249-1, 4.3		P
(18.3)	External parts of insulating material preventing electric shock glow-wire test 650 C		P
(18.4)	Parts of insulating material retaining live parts in position, needle-flame test 10 s:		N/A
	- flame extinguished within 30 s		N/A
	- no flaming drops igniting tissue paper		N/A
(18.5)	Tracking test		N/A

19	RESISTANCE TO CORROSION		—
	Resistance to corrosion in compliance with IEC 61347-1		N/A
	Rust protection:		N/A
	- test according 4.18.1 of IEC 60598-1		N/A
	- adequate varnish on the outer surface		N/A

EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict

14	TABLE: tests of fault conditions		—
Part	Simulated fault		Hazard
C10	Short-circuited	LED switched off, can be resumed to normal	NO
C9	Short-circuited	Fuse operated	NO
C8	Short-circuited	Fuse operated	NO
C3	Short-circuited	Normal operation	NO
C4	Short-circuited	Fuse operated	NO
RV1	Short-circuited	Fuse operated	NO

EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict

A	ANNEX A - TESTS		—
	All tests performed in accordance with the advise given in Annex H of IEC 61347-1, if applicable		P

B	ANNEX B - SELV-operated LED modules		—
	ANNEX I of IEC 61347-2-13 - PARTICULAR ADDITIONAL REQUIREMENTS FOR INDEPENDENT SELV D.C. OR A.C. SUPPLIED ELECTRONIC STEP-DOWN CONVERTORS FOR FILAMENT LAMPS		—
I.3	Classification		—
I.3.1	Class I	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	Class II	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
I.3.2	a) non-inherently short circuit proof controlgear	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	b) non-inherently open circuit proof controlgear	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	c) inherently short circuit proof controlgear	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	d) inherently short circuit proof controlgear	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	e) fail safe controlgear	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	f) non-short-circuit proof controlgear	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	g) non-open-circuit proof controlgear	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
I.4	Marking		N/A
	Adequate symbols are used		N/A
I.5	Protection against electric shock		N/A
I.5.1	No connection between output winding and body		N/A
	No connection between output winding and protective earthing circuit		N/A
I.5.2	Input and output circuits electrically separated from each other		N/A
I.5.2.1	Insulation between input and output winding of the HF-transformer consists of double or reinforced insulation		N/A
	Class II: insulation between input/output and body consists of double or reinforced insulation		N/A
	Class I: insulation between input and body consists of basic and between output and body supplementary insulation		N/A

EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict
I.5.2.2	Insulation between input and output winding via the core consists of double or reinforced insulation		N/A
	Insulation between cord and windings of the HD-transformer consists of basic insulation		N/A
I.5.2.3	Serrated tape, additional layer		N/A
I.5.2.4	Class I controlgear for fixed connection provided with basic insulation plus protective screening comply with the following conditions:		N/A
	a) Insulation between the input winding and the protective screen complies with the requirements for basic insulation		N/A
	b) Insulation between the protective screen and the output winding complies with the requirements for basic insulation		N/A
	c) Metal screen consists of a metal foil or of a wire wound screen		N/A
	d) Metal screen so arranged that both edges cannot simultaneously touch a magnetic core		N/A
	e) Metal screen and its lead-out wire have a cross-section sufficient to ensure that an overload device will open the circuit before the screen is destroyed		N/A
	f) Lead-out wire sufficiently fixed to the metal screen		N/A
I.5.2.5	Last turn of each winding of the transformer retained by positive means		N/A
	Impregnated winding		N/A
	Winding held together by means of insulating material		N/A
I.5.3	Components bridging between input and output circuit		N/A
I.5.3.1	Used capacitors and resistors comply with 8.2		N/A
I.5.3.2	Used opto-couplers		N/A
I.6	Heating		N/A
I.6.1	No excessive temperatures in normal use		N/A
	Used material classified as Class _____		—
	Stated value of t_a _____		—

EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict
I.6.2	Upri: 1.06 time supply rated voltage		—
	Determined temperature rises in windings: - Primary: _____ K - Limit max: _____ K - Secondary: _____ K - Limit max: _____ K		N/A
	After the test:		N/A
	- no connections have worked loose		N/A
	- no reduction of creepage distances and clearances		N/A
	- no flow of sealing compound		N/A
	- no operation of protecting devices		N/A
	- electric strength test between input and output windings		N/A
I.6.3	Cycling test (10 cycles):		N/A
I.6.3.1	- heat run at _____ K		N/A
I.6.3.2	- moisture treatment 48 h		N/A
I.6.3.3	- vibration test 1 h; 1,5 g		N/A
I.6.3.4	After the tests:		N/A
	- insulation resistance		N/A
	- dielectric strength test at 35 % of specified value; test voltage _____ V		N/A
	- Current or the ohmic component does not deviates by more than 30 %		N/A
I.7	Short-circuit and overload protection		N/A
I.7.1	Upri: 1.06 times rated voltage or 0.94 and 1.06 times rated supply voltage - used voltage _____ V		N/A
I.7.2 I.7.3 I.7.4	Determined temperature rise in windings and on other parts:		N/A
	- test according to Clause _____		N/A
	- Primary winding _____ K		N/A
	- Limit max _____ K		N/A
	- Secondary winding _____ K		N/A
	- Limit max _____ K		N/A
	- External enclosure _____ K		N/A
	- Limit max 80 K		N/A
	- Rubber insulation of wiring _____ K		N/A
	- Limit max 60 K		N/A
	- PVC insulation of wiring _____ K		N/A
	- Limit max 60 K		N/A
	- Supports _____ K		N/A
	- Limit max 80 K		N/A

EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict

I.7.5	Fail-safe convertors		N/A
I.7.5.1	- U _{pri} : 1.06 times rated supply voltageV:		—
	- I _{sec} : 1.5 times rated output current.....A:		—
	- time until steady-state conditions t ₁ (h) :		—
	- time until failure t ₂ (h): ≤ t ₁ ; ≤ 5 h :		N/A
I.7.5.2	During the test:		N/A
	- no flames, molten material, etc.		N/A
	- temperature rise of enclosure ≤ 150 K		N/A
	- temperature rise of plywood support ≤ 100 K		N/A
	After the test:		N/A
	- electric strength (test voltage; 35 % of specified value); no flashover or breakdown for primary-to-secondary and for primary-to-body		N/A
	- live parts not accessible by test finger through holes of enclosure		N/A
I.8	Insulation resistance and electric strength		N/A
I.8.1	Conditioned 48 h between 91 % and 95 %		N/A
I.8.2	Adequate insulation (500 V d.c. for 1 min) between:		N/A
	Live parts and the body -for basic insulation not less than 2 MΩ :		N/A
	Live parts and the body -for reinforced insulation not less than 4 MΩ :		N/A
	Input- and output circuits not less than 5 MΩ :		N/A
	Metal parts of class II controlgear which are separated from live parts by basic insulation only and the body not less than 5 MΩ :		N/A
	Metal foil in contact with the inner and outer surfaces of enclosures of insulating material not less than 2 MΩ :		N/A

EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict

I.8.3	Electric strength test:		N/A
	1) Between live parts of input circuits and live parts of output circuits..... :		N/A
	2) Over basic or supplementary insulation between:		N/A
	a) live parts which are or may become of different polarity		N/A
	b) live parts and enclosure if intended to be connected to protective earth		N/A
	c) accessible metal parts and a metal rod of the same diameter as the flexible cable or cord		N/A
	d) live parts and an intermediate metal part		N/A
	e) intermediate metal parts and the body		N/A
	3) Over reinforced insulation between the body and live parts..... :		N/A
	No flashover or breakdown occurred		N/A
I.9	Construction		N/A
I.9.1	Comply with all requirements		N/A
I.9.2	The distance between input and output terminals shall not be less than 25 mm		N/A
I.10	Components		N/A
I.10.1	Socket-outlets in the output circuit does not accept plugs complying with IEC 60083 and IEC 60906-1		N/A
I.10.2	Self-resetting devices shall not be used unless it is certain that there will be no hazards		N/A
	Compliance is checked by connecting the controlgear for 48 h at 1.06 times the rated voltage with the output short-circuited		N/A

EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict

I.11	Creepage distances and clearances		N/A
	1. Insulation between input and output circuits:		N/A
	a) measured values \geq specified values (mm)..... :		N/A
	b) measured values \geq specified values (mm)..... :		N/A
	c) measured values \geq specified values (mm)..... :		N/A
	2. Insulation between adjacent input circuits: measured values \geq specified values (mm)..... :		N/A
	2. Insulation between adjacent output circuits: measured values \geq specified values (mm)..... :		N/A
	3. Insulation between terminals for external connection:		N/A
	a) measured values \geq specified values (mm)..... :		N/A
	b) measured values \geq specified values (mm)..... :		N/A
	c) measured values \geq specified values (mm)..... :		N/A
	4. Basic or supplementary insulation:		N/A
	a) measured values \geq specified values (mm)..... :		N/A
	b) measured values \geq specified values (mm)..... :		N/A
	c) measured values \geq specified values (mm)..... :		N/A
	5. Reinforced insulation: measured values \geq specified values (mm)..... :		N/A
	6. Distances through insulation:		N/A
	a) measured values \geq specified values (mm)..... :		N/A
	b) measured values \geq specified values (mm)..... :		N/A
	c) measured values \geq specified values (mm)..... :		N/A
	a) measured values \geq specified values (mm)..... :		N/A

	ANNEX C –EN 61195	—
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Clause	Requirement + Test	Result - Remark	Verdict
2	Safety requirements		P
2.2	Marking		P
	Quantity tested : 3 x		P
2.3.1.1	G5, G13 and R17d caps		P
	Quantity tested : 3 x		P
	a) Torque test to the pins		P
	0,5 Nm for G5 caps		N/A
	1,0 Nm for G13 or R17d caps		P
2.3.2	Dimensional requirements for caps		P
2.3.2.1	Compliance with the dimensional requirements of the relevant sheet of IEC Publication 60061-1	(see appended table)	P
	Position of the crimp zone, if any		P
2.3.2.2	Compliance with the requirements of the relevant sheet of IEC Publication 60061-3	(see appended table)	P
2.4	Insulation resistance		P
2.4.1	Between the metal shell of the cap and the pin(s) or contacts not less than 2 MΩ		P
2.4.2	Measurement of insulation resistance with 500Vd.c.		P

2.3.2.1	TABLE: Dimensional requirements for caps						P	
Type of tested lamps : LED Tube Cap type : G 13 Nominal tube diameter : 25,5 mm Used sheet of IEC 60061-1 : 7004-51-8 Tested quantity : 3 pcs.								
Dimensions	Measured values (mm)					Requirement (mm)		
						Min.	Max.	
A	25,50	24,82	25,20	—	—	—	25,78	
D	12,70	12,70	12,70	—	—	—	12,7	
E	2,37	2,38	2,32	—	—	2,29	2,67	
F	7,33	7,35	7,38	—	—	6,60	7,62	
N	16,69	17,02	17,11	—	—	8,71	—	
Supplementary information:								

2.10.1	TABLE: Dimensional requirements for lamps						P	
Type of tested lamps : T8-150EU Used sheet of IEC 60081 : 2520-1 Tested quantity : 3 pcs.								
Dimensions	Measured values (mm)					Requirement (mm)		
						Min.	Max.	
A	1497,2	1498,5	1498,2	—	—	—	1500,0	
B	1505,1	1505,5	1506,8	—	—	1504,7	1507,1	
C	1512,6	1512,9	1513,4	—	—	—	1514,2	
D	25,33	25,20	25,27	—	—	—	28,0	
Supplementary information:								