Laboratory		UL India Pvt. Ltd, 413,	UL India Pvt. Ltd, 413, Sector 8, IMT Manesar, Gurgaon, Haryana				
Acc	reditation Standa	rd ISO/IEC 17025: 2005					
Disc	ipline	Photometry Testing		F, Gurgaon, HaryanaIssue Date05.08.2014Valid Until04.08.2016Page1 of 50tionRange of Testing / Limits of Detection95 -Qualitative95 -0.01 to 300 mm 0.02 to 600 mm 0.1 to 1.4 Nm 0.1 to 5 Nm 35 to 300°C Go and No go Gauges for G5 and G13 caps95 -50 to 1200V DC 0.100 to 9999 MQ95 -0.20 to 5.00 kV AC 0.01 to 10, 100.0mA95 -50 to 1200V DC 0.100 to 9999 MQ95 -50 to 1200V DC 0.100 to 9999 MQ	ate 05.08.2014		
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I.	LAMPS & LUMIN	ARIES AND ACCESSORIES					
1	Double-capped fluorescent lamps	Marking.	Clause 2.2 as per IEC 61195 (Edition 2.1 -2012-10)	5– Q	Qualitative		
		Mechanical Requirements – Construction and assembly. Dimensional requirements for caps.	Clause 2.3 as per IEC 61195 (Edition 2.1 -2012-10)	5 - 0 0 0 0 0 3 G	.01 to 300 mm .02 to 600 mm .01 to 25mm .1 to 1.4 Nm .1 to 5 Nm 5 to 300°C to and No go Gauges or G5 and G13 caps		
		Insulation Resistance.	Clause 2.4 as per IEC 61195 (Edition 2.1 -2012-10)	5- 5 0	0 to 1200V DC .100 to 9999 MΩ		
		Electric Strength.	Clause 2.5 as per (IEC 6119 Edition 2.1 -2012-10).	95 - 0 0	.20 to 5.00 kV AC .01 to 10 , 100.0mA		
		Parts which can become accidentally live.	Clause 2.6 as per IEC 61193 ((Edition 2.1 -2012-10)	5 - 5 0	0 to 1200V DC .100 to 9999 MΩ		
		Resistance to heat and fire.	Clause 2.7 as per IEC 61195 (Edition 2.1 -2012-10)	5- 3. B F G A T	5 to 300°C all Diameter: 5mm orce 1: 20 N, flow wire test opparatus: ip Temperature 550°C		

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		Creepage distance for caps.	Clause 2.8 as per (Edition 2 2012-10)	.1 -	0.01 to	o 300mm	
		Lamp cap temperature rise.	Clause 2.9 as per IEC 6119. Edition 2.1 -2012-10)	5	Ambie	ent to 300°C	
		Lamp minimum overall length.	Clause 2.10 as per IEC 6119 (Edition 2.1 -2012-10)	95	Length IEC:60	1 Gauges as per 2081	
		Caps	Clause 1.5.2 as per IEC 600 (Edition 5.0 2013-07))81-	Go and for G5	l No go Gauges and G13 caps.	
		Dimensions.	Clause 1.5.3 as per IEC 600 (Edition 5.0 2013-07))81-	Length IEC:6(1 Gauges as per 2081	
		Starting characteristics.	Clause 1.5.4 as per IEC 600 (Edition 5.0 2013-07))81	0.1 s -	60 Min	
		Electrical and cathode characteristics.	Clause 1.5.5 as per IEC 600 (Edition 5.0 2013-07))81-	Voltag Curren Power	e: 0.01 - 600V tt: 0.001 - 2 A : 0.01 W - 600W	
		Photometric characteristics – Initial luminous flux, Initial chromaticity coordinates, initial CRI.	Clause 1.5.6 as per IEC 600 (Edition 5.0 2013-07))	081-	Spectro 350nm Lumin Up to CCT : CRI : I Co-ord	um : a to 800nm ous Flux: 100000 lm Up to 10000K, Up to 100 linates: Up to 1	

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specificat against which tests are performed	ion	Range Limite	e of Testing / s of Detection	
		Lumen Maintenance	Clause 1.5.7 as per IEC 600)81-	0.1 to1	0000 hr.	
			(Edition 5.0 2013-07)		Spectro 350 to Lumin Up to CCT : CRI : U Co-ord	um : 800nm ous Flux: 100000 lm Up to 10000K, Up to 100 linates: Up to 1	
		Marking	Clause 1.5.8 as per IEC 600 (Edition 5.0 2013-07))81-	Qualita	ative	
		Product Drawing (Overall length, Tube length, Tube diameter)	Clause 8 as per ANSI C78. 2010	81-	0.01 to 0.02m	9 300mm m to 600mm	
		Applications of Lamps on More than One Type of Circuit	Clause 9 as per ANSI C78. 2010	81-	Qualita	ative	
		Lamp Physical and Dimensional Requirements	Clause 10 as per ANSI C78 2010	.81-	Go and for G5	l No go Gauges and G13 caps.	
		Lamp Electrical Characteristics	Clause 11 as per ANSI C78 2010	.81-	Voltag Curren Power	e: 0.01 to 600V t: 0.001 to 2 A : 0.01 W to 600W	

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2.	Tubular Fluorescent lamps	Qualitative examination and checking of marking.	Clause 6.3 as per IS 2418 - Part 1 – 1977	-	Qualita	tive
		Torsion test.	Clause 6.4 as per IS 2418 - Part 1 – 1977		0.1 to1 0.1 to 5	.4Nm 5 Nm
		Insulation resistance test	Clause 6.5 as per IS 2418 - – 1977	Part 1	50 to 1 0.100 t	200V DC ο 9999 MΩ
		Burning test,	Clause 6.6 as per IS 2418 - – 1977	Part 1	Qualita	tive
		Starting Characteristics test, (Start timing)	Clause 4.2 & 6.7 as per IS Part 1 – 1977	2418 -	0.1 s to	o 60 Min
		Test for electrical, luminous and colour characteristics	Clause 6.8 as per IS 2418 - – 1977	Part 1	Voltage Curren Power Spectru 350nm Lumino Up to 1 CCT : CRI : U Co-ord	e: 0.01 to 600V t: 0.001 to 2 A : 0.01 W to 600W im : to 800nm ous Flux: 100000 lm Up to 10000 K Jp to 100 inates: Up to 1
		Life test	Clause 6.9 as per IS 2418 - Part 1 – 1977	-	0.1 Hr Spectru 350nm Lumino Up to 1 CCT : 1 CRI : U Co-ord	rs to10000 Hrs. Im : to 800nm ous Flux: 100000 lm Up to 100000K, Jp to 100 inates: Up to 1

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specificatic against which tests are performed	on Ra Lii	inge of Testing / nits of Detection		
		Mechanical and Physical Requirements	Clause 4.1 as per IS 2418 – Part 1 – 1977	0.1 0.1 Go for An Le IS:	to 1.4Nm to 5 Nm and No go Gauges G5 and G13 caps. igular gauge /6°/- ngth gauges as per 2418 Pt.2		
3.	Fluorescent Lamps	Electrical and Photometric Characteristics	IES LM – 9 - 09	Vc Cu Po Sp 35 Lu Uf CC CF Co	ltage: 0.01 to 600V rrent: 0.001 to 2 A wer : 0.01 W to 600W ectrum : 0nm to 800nm minous Flux: 0 to 100000 lm CT : Up to 10000K, CI : Up to 100 ordinates: Up to 1		
		Life Testing	IES LM-40-10	0.1	hrs to10000 Hrs.		
		Color co-ordinates, Nominal color temperature, Objective chromaticities, Chromaticity tolerances and CRI	Clause 2,3,4,5 and 6 as per A C78.376-2001	NSI Sp 35 Lu UF CC CF Co	ectrum : Onm to 800nm minous Flux: to 100000 lm YT : Up to 10000K, II : Up to 100 -ordinates: Up to 1		

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	n Ran Limi	ge of Testing / its of Detection			
4.	Luminaires	Marking	Clause 1.5 as per IEC 60598- (Edition 1- 1987)	2-1 Qual	itative			
			Clause 2.6 as per IEC 60598- (Edition 3.0 2011-11)	2-2				
			Clause 3.5 as per IEC 60598- (Edition 3.1 2011-11)	2-3				
			Clause 4.5 as per IEC 60598- (Edition 2 1997-04)	2-4				
			IEC 60598-1 Section 3 (Edition 8.0 2014-05)					
		Construction	Clause 1.6 as per IEC 60598- Edition 1 -1987)	2-1(0.01	to 300mm			
			Clause 2.7 as per IEC 60598- (Edition 3.0 2011-11)	2-2 0.01	N to196N			
			Clause 3.6 as per IEC 60598- (Edition 3.1 2011-11)	2-3 0.2 to 1Nm	o1.2 Nm to 6 Nm			
			Clause 4.6 as per IEC 60598- (Edition 2 1997-04)	2-4				
			IEC 60598-1 Section 4 (Edition 8.0 2014-05)	0.201 0.501 1.001	Nm,0.35Nm, Nm,0.70Nm, Nm			

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Rang Limit	e of Testing / s of Detection		
		External and Internal Wiring	Clause 1.7 as per IEC 60598-2- (Edition 1- 1987)	1 0.01 t	o 300mm		
			Clause 2.11 as per IEC 60598-2 (Edition 3.0 2011-11)	2-2 0.01N	to 196N		
			Clause 3.10 as per IEC 60598-2 (Edition 3.1 2011-11)	2-3 0.2 to 1Nm	1.2 Nm to 6 Nm		
			Clause 4.10 as per IEC 60598-2 (Edition 2 1997-04)	2-4			
			IEC 60598-1 Section 5 (Edition 8.0 2014-05)	n			
		Provision for Earthing.	Clause 1.8 as per IEC 60598-2- (Edition 1 Amendment 1: 1987	1 0.001 7)	Ω to 1.8000Ω		
			Clause 2.9 as per IEC 60598-2-2 (Edition 3.0 2011-11)	2			
			Clause 3.8 as per IEC 60598-2-3 (Edition 3.1 2011-11)	3			
			Clause 4.8 as per IEC 60598-2-4 (Edition 2 1997-04)	4			
			IEC 60598-1 Section 7 (Edition 8.0 2014-05)	n			

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	on	Range Limits	e of Testing / s of Detection	_
		Protection against Electric Shock	Clause 1.11 as per IEC 6059 1(Edition 1: 1987)	8-2-	30N, 5 Specif	0V, ied gauges	
			Clause 2.12 as per IEC 6059 (Edition 3.0 2011-11)	8-2-2			
			Clause 3.11 as per IEC 6059 (Edition 3.1 2011-11)	8-2-3			
			Clause 4.11 as per IEC 6059 (Edition 2 1997-04)	8-2-4			
			IEC 60598-1 Section 8 (Edition 8.0 2014-05)				
		Resistance to dust, Solid objects and Moisture	Clause 1.13 as per IEC 6059 1(Edition 1- 1987)	8-2-	Qualita	ative	
			Clause 2.14 as per IEC 6059 (Edition 3.0 2011-11)	8-2-2			
			Clause 2.14 as per IEC 6059 (Edition 3.0 2011-11)	8-2-2			
			Clause 3.13 as per IEC 6059 (Edition 3.1 2011-11)	8-2-3			
			Clause 4.13 as per IEC 6059 (Edition 2 1997-04)	8-2-4			
			IEC 60598-1 Section 9 (Edition 8.0 2014-05)				

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	on	Range Limits	e of Testing / s of Detection	
		Insulation Resistance and Electric Strength, Touch Current and Protective Conductor Current	Clause 1.14 as per IEC 6059 1(Edition 1: 1987)	98-2-	50 to 1 0.100 t	200V DC to 9999 MΩ	
			Clause 2.15 as per IEC 6059 (Edition 3.0 2011-11)	98-2-2	0.20 to 0.01 to	9 5.00 kV AC 9 100.0mA	
			Clause 3.14 as per IEC 6059 (Edition 3.1 2011-11)	98-2-3			
			Clause 4.14 as per IEC 6059 (Edition 2 1997-04)	98-2-4			
			Clause 4.14 as per IEC 6059 (Edition 2 1997-04)	98-2-4			
			IEC 60598-1 Section 10 (Edition 8.0 2014-05)		0.01 µ.	A to 50mA	
		Creepage Distance and Clearances	Clause 1.7 as per IEC 60598 (Edition- 1987)	8-2-1	0.01 to	o 300mm	
			Clause 2.8 as per IEC 60598 (Edition 3.0 2011-11)	8-2-2			
			Clause 3.7 as per IEC 60598 (Edition 3.1 2011-11)	8-2-3			
			Clause 4.7 as per IEC 60598 (Edition 2 1997-04)	3-2-4			
			IEC 60598-1 Section 11 Ec 8.0 2014-05)	dition			

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specificati against which tests are performed	on	Range Limite	e of Testing / s of Detection		
		Endurance Test and Thermal Test	Clause 1.12 as per IEC 605 1(Edition 1- 1987)	98-2-	35°C 1	to 300°C		
			Clause 2.13 as per IEC 6059 (Edition 3.0 2011-11)	98-2-2				
			Clause 3.12 as per IEC 6059 (Edition 3.1 2011-11)	98-2-3				
			Clause 4.12 as per IEC 6059 (Edition 2- 1997-04)	98-2-4				
			IEC 60598-1 Section 12 (E 8.0 2014-05)	dition				
		Resistance to Heat, Fire and Tracking	Clause 1.15 as per IEC 605 1(Edition 1- 1987)	98-2-	35 °C 1	to 300°C		
			Clause 2.16 as per IEC 6059 (Edition 3.0 2011-11)	98-2-2	Ball D 5mmF Vernie to 300	iameter: orce 1: 20.0N,. er caliper 0.01 mm mm		
			Clause 3.15 as per IEC 6059 (Edition 3.1 2011-11)	98-2-3	Glow v :Tip To to 960	wire test apparatus emperature 550°C °C		
			Clause 4.15 as per IEC 6059 (Edition 2 1997-04)	98-2-4	0.1 5 1			
			IEC 60598-1 Section 13 (E 8.0 2014-05)	Edition				

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	on	Range Limits	e of Testing / s of Detection		
		Terminals/Screw Terminals/ Screw less Terminals and Electrical Connections	Clause 1.9 as per IEC 60593 (Edition 1 - 1987)	8-2-1	0.2 to 1Nm to	1.2 Nm o 6 Nm		
			Clause 2.10 as per IEC 6059 (Edition 3.0 2011-11)	98-2-2				
			Clause 3.9 as per IEC 60598 (Edition 3.1 2011-11)	3-2-3				
			Clause 4.9 as per IEC 60598 (Edition 2 1997-04)	8-2-4				
			IEC 60598-1 Section 14 & (Edition 8.0 2014-05)	15				
		Marking	Clause 5 as per IS 10322 (Part 5/Sec1):2012		Qualita	ative		
			Clause 5 as per IS 10322 (Part 5/Sec2):2012					
			Clause 5 as per IS 10322 (Part 5/Sec3):2012					
			Clause 5 as per IS 10322 (Part 5/Sec4):2012					
			Clause 5 as per IS 10322 (Part 5/ Sec 5): 2012					
			Clause 6 as per IS 10322 (Part 1):1982					

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		Construction.	Clause 6 as per IS 10322 (Part 5/Sec1):2012	0.	.01 mm to 300mm		
			Clause 6 as per IS 10322 (Part 5/Sec2):2012	0	.01N to 196N		
			Clause 6 as per IS 10322 (Part 5/Sec3):2012	0. 11	.2 to 1.2 Nm Nm to 6 Nm		
			Clause 5 as per IS 10322 (Part 5/Sec4):2012				
			Clause 6 as per IS 10322 (Part 5/Sec 5): 2012				
			Clause 1 to 21 as per IS 103: (Part 2):1982	22 0. 0.	20Nm,0.35Nm, .50Nm,0.70Nm,1.00Nm		
		Creepage Distance and Clearances	Clause 7 as per IS 10322 (Part 5/Sec1):2012	0.	.01mm to 300mm		
			Clause 7 as per IS 10322 (Part 5/Sec2):2012				
			Clause 7 as per IS 10322 (Part 5/Sec3):2012				
			Clause 7 as per IS 10322 (Part 5/Sec4):2012				
			Clause 7 as per IS 10322 (Part 5/Sec 5): 2012				
			Clause 4 as per IS 10322 (Part 4):1984				

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		Provision for Earthing	Clause 8 as per IS 10322 (Part 5/Sec1):2012		0 to 1.8	3000Ω		
			Clause 8 as per IS 10322 (Part 5/Sec2):2012					
			Clause 8 as per IS 10322 (Part 5/Sec3):2012					
			Clause 8 as per IS 10322 (Part 5/Sec4):2012					
			Clause 8 as per IS 10322 (Part 5/Sec 5): 2012					
			Clause 8 as per IS 10322 (Part 5/Sec 5): 2012					
			Clause 20 as per IS 10322 (Part 2):1982					
		Terminals	Clause 9 as per IS 10322 (Part 5/Sec1):2012		0.2 to 1 1Nm to	.2 Nm 0 6 Nm		
			Clause 9 as per IS 10322 (Part 5/Sec2):2012					
			Clause 9 as per IS 10322 (Part 5/Sec3):2012					
			Clause 9 as per IS 10322 (Part 5/Sec4):2012					

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			Clause 9 as per IS 10322 (Part 5/Sec 5): 2012	0.2 1N	to 1.2 Nm m to 6 Nm
			Clause 1 to 8 as per IS 1032 (Part 3):1984	22 0.2 1N	to 1.2 Nm m to 6 Nm
		External and Internal Wiring	Clause 10 as per IS 10322 (Part 5/Sec1):2012	0.0	1 to 300mm
			Clause 10 as per IS 10322 (Part 5/Sec2): 2012	0.0	1N to 196N
			Clause 10 as per IS 10322 (Part 5/Sec3):2012	0.2 1N	to 1.2 Nm m to 6 Nm
			Clause 10 as per IS 10322 (Part 5/Sec4):2012		
			Clause 10 as per IS 10322 (Part 5/Sec 5): 2012		
			Clause 19 as per IS 10322 (Part 2):1982		
		Protection against Electric Shock.	Clause 11 as per IS 10322 (Part 5/Sec1):2012	30] Spe	N, 50V, ecified gauges
			Clause 11 as per IS 10322 (Part 5/Sec2):2012		
			Clause 11 as per IS 10322 (Part 5/Sec3):2012		

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			Clause 11 as per IS 10322 (Part 5/Sec4):2012		30N, 50V, Specified gauges	
			Clause 11 as per IS 10322 (Part 5/Sec 5): 2012			
			Clause 21 as per IS 10322 (Part 2):1982			
		Qualitative Examination	Clause 12.2 as per IS 10322 (Part 5/Sec1): 2012	2	Qualitative	
			Clause 12.2 as per IS 10322 (Part 5/Sec2): 2012	2		
			Clause 13.2 as per IS 10322 (Part 5/Sec3): 2012	2		
			Clause 13.2 as per IS 10322 (Part 5/Sec4): 2012	2		
			Clause 13.2 as per IS 10322 (Part 5/Sec 5): 2012	2		
		Mechanical Strength Test	Clause 12.3 as per IS 10322 (Part 5/Sec1): 2012	2	0.1 to 1.4Nm 0.1 to 5 Nm	
			Clause 12.3 as per IS 10322 (Part 5/Sec2): 2012	2	0.20Nm,0.35Nm, 0.50Nm,0.70Nm, 1.00Nm	
			Clause 13.3 as per IS 10322 (Part 5/Sec3): 2012	2	1.0011111	

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			Clause 13.3 as per IS 10322 (Part 5/Sec4): 2012	2	0.20Nm,0.35Nm, 0.50Nm,0.70Nm,
		Clause 13.3 as per IS 10322 (Part 5/Sec 5): 2012	2	1.00Nm	
	E		Page16 of 50Test Method Specification against which tests are performedRange of Testing Limits of DetectionClause 13.3 as per IS 10322 (Part 5/Sec4): 20120.20Nm,0.35Nm, 0.50Nm,0.70Nm, 1.00NmClause 13.3 as per IS 10322 (Part 5/Sec 5): 20120.20Nm,0.35Nm, 0.50Nm,0.70Nm, 1.00NmClause 13.3 as per IS 10322 (Part 4):19840.20Nm,0.35Nm, 0.50Nm,0.70Nm, 1.00NmestsClause 12.4 as per IS 10322 (Part 5/Sec1): 2012Ambient to 300°C (Part 5/Sec2): 2012Clause 12.4 as per IS 10322 (Part 5/Sec3): 2012Ambient to 300°CClause 13.4 as per IS 10322 (Part 5/Sec3): 2012Clause 13.4 as per IS 10322 (Part 5/Sec4): 2012Clause 13.4 as per IS 10322 (Part 5/Sec 5): 2012Clause 13.4 as per IS 10322 		
		Endurance tests and thermal tests	ests Clause 12.4 as per IS 10322 Ambient t (Part5/Sec1): 2012	Ambient to 300°C	
			Clause 12.4 as per IS 10322 (Part 5/Sec2): 2012	2	
			Clause 13.4 as per IS 10322 (Part 5/Sec3): 2012	2	
			Clause 13.4 as per IS 10322 (Part 5/Sec4): 2012	2	
			Clause 13.4 as per IS 10322 (Part 5/Sec 5): 2012	2	
			Clause 6 as per IS 10322 (Part 4):1984		
		Resistance to dust and moisture.	Clause 12.5 as per IS 10322 (Part5/Sec1): 2012	2	Qualitative
			Clause 13.5 as per IS 10322 (Part 5/Sec3): 2012	2	
			Clause 13.5 as per IS 10322 (Part 5/Sec4): 2012	2	Qualitative

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			Clause 13.5 as per IS 10322 (Part 5/Sec 5): 2012					
	In st		Clause 2 as per IS 10322 (Part 4):1984					
		Insulation resistance and electric strength	Clause 12.6 as per IS 10322 (Part5/Sec1): 2012	1200V DC to 9999 MΩ				
			Clause 12.6 as per IS 10322 (Part 5/Sec2): 2012	0.20 t 0.01 t	o 5.00 kV AC o 10 , 100.0mA			
			Clause 13.6 as per IS 10322 (Part 5/Sec3): 2012					
			Clause 13.6 as per IS 10322 (Part 5/Sec4): 2012					
			Clause 13.6 as per IS 10322 (Part 5/Sec 5): 2012					
			Clause 3 as per IS 10322 (Part 4):1984	0.01 µ	A to 50mA			
		Resistance to heat, fire and	Clause 12.7 as per IS 10322	35 °C	to 300°C			
		tracking	(Part5/Sec1): 2012	Ball I Force Verni 0.01m	Diameter: 5mm 1: 20.0N, er caliper: m to 300 mm			
			Clause 12.7 as per IS 10322 (Part 5/Sec2): 2012	Glow :Temp 960°C	wire test apparatus berature 550°C to			

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Las	aboratory ccreditation Standard iscipline certificate Number ast Amended on No. Product / Material of Test	-	P	Page		18 of 50	
S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	n	Range Limits	e of Testing / of Detection	
			Clause 13.7 as per IS 10322 (Part 5/Sec3): 2012	(0.1 s to	o 60 Min	
			Clause 13.7 as per IS 10322 (Part 5/Sec4): 2012				
			Clause 13.7 as per IS 10322 (Part 5/Sec 5): 2012				
			Clause 7 as per IS 10322 (Part 4):1984				
		Photometry Test.	Clause 12.8 as per IS 10322 (Part5/Sec1): 2012		Voltage Curren	e: 0.01 to 600V t: 0.001 to 2 A	
			Clause 12.8 as per IS 10322 (Part 5/Sec2): 2012]	Power : 0.01 W to 600W Test distance $\leq 8.7m$, Field angle $\geq 10^{\circ}$,	stance ≤ 8.7 m, ngle $\geq 10^{\circ}$,	
			Clause 12,13.8 as per IS 1032 (Part 5/Sec3): 2012	10322 Voltage: 0.1 Current: 0.0 Current: 0.0 Power : 0.0 Test distance Field angle 0.011x to 10 IS 10322 .	10100001x,		
			Clause 12,13.8 as per IS 1032 (Part 5/Sec4): 2012	22			
			Clause 12,13.8 as per IS 1032 (Part 5/Sec5): 2012	22			
		In-Situ Temperature Measurement Test	Clause No. 14,15,19.1,19.2,19.3,19.4,19.5 6,19.7 ANSI/UL 1598 – 2012 Clause No. 48, 54,59, 65, 84,116,123E 124,125 ANSI/UL 153 – 2014	5,19. 2 and	-200 to	9 600 ℃	

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specificat against which tests are performed	ion 9	Range Limits	of Testing / of Detection	
5.	Floodlights using HID or Incandescent filament lamps	 Light distribution Curves(cd) -IESNA Type both horizontal and vertical. -Maximum luminous intensity and its location. -Field angle in both horizontal and vertical directions. -Beam angle in both horizontal and vertical directions. -Beam angle in both horizontal and vertical directions. -Field and beam flux (lumens) and field efficiency. -Total flux and total efficiency. Distribution Data. - Iso-candela curves of equal luminious intensity. -Horizontal and vertical intensity distribution curves passing through 0°H, 0°V. -Horizontal and vertical intensity distribution curves passing through 0°H, 0°V. 	IESNA LM-35-02		Voltage: Current: Power : Test dist Field an 0.011x to	: 0.01 to 600V : 0.001 to 2 A 0.01 W to 600W tance $\leq 8.7m$, gle $\geq 10^{\circ}$, to 100000 lx,	

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Labor Accre Discip Certif Last A S.No. I		Other Data.					
		-Test distance.					
		-Tabulation of candela values and zonal lumen values					
6.	Indoor Luminaires using HID of Incandescent	Lamp Lumen output.	IESNA LM-46-04		Voltage: 0.01 to 600V		
		General Lighting Characteristics		Power :	Power : 0.01 W to 600W		
	Filament Lamps	-Luminous intensity distribution in designated planes.			Test distance ≤ 8.7 m, Field angle $\geq 10^{\circ}$,		
		-Tabulated luminious intensity values for each plane in 5-degree step.			0.011x to 100000 lx,		
		-Tabulation of lumens and percentage of bare lamp lumens for zones.					
		-Curves or tabulation of average luminance data.					
		-Test distance					
7.	SSL Products	Total Luminous flux, Luminous efficacy, Luminous intensity distribution, chromaticity coordinates, CT and/or CRI for white light products	Clause No. 9 to 12 IES LM – 79 – 08		Voltage: 0.01 to 600V Current: 0.001 to 2 A Power : 0.01 W to 600W Test distance $\leq 8.7m$, Field angle $\geq 10^{\circ}$, 0.011x to 100000 1x,		

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	on	Range Limits	e of Testing / of Detection		
					Spectru 350nm Lumine Up to 1 CCT : CRI : U Co-ord	um : to 800nm ous Flux: 100000 lm Up to 10000K, Jp to 100 inates: Up to 1		
8.	Self-Ballasted LED Lamps for General	Marking	Clause 5 as per IS 16102 –P 2012	art 1 :	Qualita	tive		
8. S L P F	Part 1 Safety Requirements.	Interchangeability	Clause 6 as per IS 16102 – F : 2012	Part 1	Go Gau Gauges Screw	uges and No-Go s for Bayonet and Caps		
		Protection Against Accidental contact with live Parts	Clause 7 as per IS 16102 –P 2012	art 1 :	30N, 5 gauges	0V, Specified		
		Insulation Resistance and Electric strength after Humidity	Clause 8 as per IS 16102 – F : 2012	Part 1	0.20 to 0.01 to	5.00 kV AC 10 , 100.0mA		
		treatment.			0.01 μ/ 50 to 1 0.100 t	A to 50mA 200V DC ο 9999 MΩ		
		Mechanical Strength	Clause 9 as per IS 16102 –P 2012	art 1 :	0.1 to 1 0.1 to 5	1.4Nm 5 Nm		
		Cap temperature rise	Clause 10 as per IS 16102 – 1 : 2012	Part	Ambie	nt to 300°C		

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specificat against which tests are performed	ion	Range Limits	e of Testing / s of Detection		
		Resistance to Heat	Clause 11 as per IS 16102 - : 2012	-Part 1	35°C to Ball D Force I Vernie 0.01 m	o 300°C iameter: 5mm : 20.0 N, r caliper : m to 300 mm		
		Resistance to Flame and Ignition	Clause 12 as per IS 16102 - 1 : 2012	- Part	Glow v : Tip T to 960° 60598	wire test apparatus emperature 550°C °C As per UL/IEC		
		Fault Condition	Clause 13 as per IS 16102 - 1 : 2012	- Part	0.1 to 3	300V		
		Creepage distance and Clearances	Clause 14 as per IS 16102 - 1 : 2012	– Part	0.01 to	300mm		
8.	Self-Ballasted LED Lamps for General	Marking	Clause 5 as per IS 16102 – : 2012	Part 2	Qualita	ntive		
	Lighting Services	Dimensions	Clause 6 as per IS 16102 – : 2012	Part 2	0.01 to	300mm		
		Lamp Power	Clause 8 as per IS 16102 – : 2012	Part 2	Voltag Curren Power	e: 0.01 to 600V t: 0.001 to 2 A : 0.01 W to 600W		
		Luminous flux	Clause 9 as per IS 16102 – : 2012	Part 2	Voltag Curren	e: 0.01 to 600V t: 0.001 to 2 A		
		Centre Beam Intensity	Clause 10 as per IS 16102 - 2 : 2012	– Part	Test di Field a 0.011x	stance $\leq 8.7m$, ngle $\geq 10^\circ$, to 100000 lx,		

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specificat against which tests are performed	ion 9	Range Limits	e of Testing / s of Detection		
		Beam Angle	Clause 11 as per IS 16102 - 2 : 2012	– Part	Qualita	ative		
		CCT, Chromaticity Coordinates and CRI	Clause 12 as per IS 16102 - 2 : 2012	– Part	Qualita	ative		
		Lamp Life, Lumen Maintenance and Endurance test for Built-in Electronic Ballast.	Clause 13 as per IS 16102 - : 2012	–Part 2	0.1 hrs	to 10000 Hrs.		
		Harmonics and Power Factor.	Clause 15 as per IS 16102 - : 2012	–Part 2	1to 100	Oth harmonic		
9.	LED Modules for General Lighting	Marking.	Clause 7 as per IS 16103 – : 2012	Part 1	Qualita	ative		
		Terminals.	Clause 8 as per IS 16103 -I 2012	Part 1 :	0.1 to 1 0.1 to	1.4Nm 5 Nm		
		Provisions for protective earthing.	Clause 9 as per IS 16103 – 2012	Part 1 :	0Ω to 2	1.8000Ω		
		Protection against accidental contact with live parts.	Clause 10 as per IS 16103 - 1 : 2012	– Part	30N, 5 Specifi	0V, ied gauges		
		Moisture resistance and Insulation.	Clause 11 as per IS 16103 - 1 : 2012	– Part	Tempe -40°C Humid 50 to 1 0.100 t	rature to 180°C lity : 10 to 95% rh 200V DC to 9999 MΩ		

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Acc	reditation Standar	d ISO/IEC 17025: 2005						
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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specificatior against which tests are performed	n	Range of Testin Limits of Detect	ig / tion		
		Electric strength	Clause 12 as per IS 16103 –Pa : 2012	art 1	0.20 to 5.00 kV A 0.01 to 10 , 100.0m	C nA		
		Fault condition	Clause 13 as per IS 16103 – Pa 1 : 2012	art	0.1 to 300V			
		Conformity testing during manufacture	Clause 14 as per IS 16103 -Pa : 2012	ırt 1	Voltage: 0.01 to 60 Current: 0.001 to 2 Power : 0.01 W to	00V 2 A 600W		
		Construction	Clause 15 as per IS 16103=Pa : 2012	rt 1	0.01 to 300mm			
		Creepage distances and clearances	Clause 16 as per IS 16103-Par 2012	rt 1 :				
		Screws, current-carrying parts and connections	Clause 17 as per IS 16103-Par 2012	rt 1 :	0.2 to 1.2 Nm 1Nm to 6 Nm			
		Resistance to heat, fire and	Clause 18 as per IS 16103-Par	rt 1 :	35 to 300°C			
		Tracking.	2012		Ball Diameter: 5m Force 1: 20.0N, Vernier caliper : 0.01 mm to 300 m	ım .m		
		Conformity testing during manufacture	Clause 14 as per IS 16103 -Pa : 2012	urt 1	Voltage: 0.01 to 6 Current: 0.001 to 2 Power : 0.01 W to	500V 2 A 600W		
		Construction	Clause 15 as per IS 16103-Par 2012	rt 1 :	0.01 to 300mm			

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		Creepage distances and clearances.	Clause 16 as per IS 16103 - Part 1 : 2012	-	Qualitative
		Screws, current-carrying parts and connections.	Clause 17 as per IS 16103 - Part 1 : 2012	-	0.2 to 1.2 Nm 1Nm to 6 Nm
		Resistance to heat, fire and Tracking.	Clause 18 as per IS 16103 - 1 : 2012	- Part	35 to 300°C
			Glow wire test apparatus Tip Temperature 550°C to 9 As per UL/IEC 60598	960°C	Ball Diameter: 5mm Force 1: 20.0N, Vernier caliper : 0.01 mm to 300 mm 0.1 s to 60 Min
		Resistance to Corrosion.	Clause 19 as per IS 16103-1 2012	Part 1 :	Qualitative
		Information to luminaire design.	Clause 20 as per IS 16103-1 2012	Part 1 :	Qualitative
		Heat Management.	Clause 21 as per IS 16103-1 2012	Part 1 :	Qualitative
10.	Safety of Lamp Control gear.	Marking.	Clause 7 as per IS 15885-Pa 2/Sec13 : 2012	art	Qualitative
		Protection against accidental contact with live parts.	Clause 8 as per IS 15885-Pa 2/Sec13 : 2012	art	30N, 50V, Specified gauges,
		Terminals.	Clause 9 as per IS 15885-Pa 2/Sec13 : 2012	art	0.2 to 1.2 Nm 1Nm to 6 Nm

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Disc	ipline	Photometry Testing		Issue Da	te 05.08.2014
Cert	ificate Number	T-2233		Manesar, Gurgaon Issue Da Valid Un Page Specification h tests are Ra xr IS 15885 – 00 xr IS 15885 – 00 xr IS 15885 – 00 xr IS 15885 – 0.2012	til 04.08.2016
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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specificat against which tests are performed	ion Ra e Li	ange of Testing / mits of Detection
		Provision for protective earthing.	Clause 10 as per IS 15885 - Part 2/Sec13 : 2012	- 00	Ω to 1.8000Ω
		Moisture Resistance and Insulation.	Clause 11 as per IS 15885 - Part 2/Sec13 : 2012	- Te -4 Hu 50 0.	emperature 40°C to 180°C amidity : 10 to 95%rh to 1200V DC 100 to 9999 MΩ
		Electric Strength	Clause 12 as per IS 15885 Part 2/Sec13 : 2012	- 0.2	20 to 5.00 kV AC 01 to 10 , 100.0mA
		Thermal Endurance test for windings of ballast	Clause 13 as per IS 15885 - Part 2/Sec13 : 2012	- 35	to 300°C
		Fault condition.	Clause 14 as per IS 15885 - Part 2/Sec13 : 2012	- 0.	1 to 300V
		Construction	Clause 15 as per IS 15885 - Part 2/Sec13 : 2012	- 0.0	01 to 300mm
		Creepage distances and clearances.	Clause 16 as per IS 15885 - Part 2/Sec13 : 2012	- 0.0	01to 300mm
		Screws, current-carrying parts and connections.	Clause 17 as per IS 15885 - Part 2/Sec13 : 2012	- 0.1 1N	2 to 1.2 Nm Nm to 6 Nm
		Resistance to heat, fire and Tracking	Clause 18 as per IS 15885 Part 2/Sec13 : 2012	- 35 Ba Fo Ve 0.0	to 300°C all Diameter: 5mm orce 1: 20.0 N, ernier caliper: 01 mm to 300 mm

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		Resistance to heat, fire and Tracking	Clause 18 as per IS 15885 – Part 2/Sec13 : 2012	0 1 tu 6 0	Glow wire test apparatus: Tip Temperature 550°C o 960°C As per UL/IEC 60598 0.1 s to 60 Min
		Resistance to Corrosion	Clause 19 as per IS 15885 – Part 2/Sec13 : 2012	(Qualitative
11.	DC or AC.	Marking.	Clause 6 as per IS 16104 : 20	012 (Qualitative
	control gear for LED Modules – Performance	Output voltage and current.	Clause 7 as per IS 16104 : 20	012 V C F	Voltage: 0.01 to 600V Current: 0.001 to 2 A Power : 0.01 W to 600W
Requirements.	Total circuit power.	Clause 8 as per IS 16104 : 20	012 V C F	Voltage: 0.01 to 600V Current: 0.001 to 2 A Power : 0.01 W to 600W	
		Circuit Power Factor.	Clause 9 as per IS 16104 : 20	012 V C F	Voltage: 0.01 to 600V Current: 0.001 to 2 A Power : 0.01 W to 600W
		Supply Current.	Clause 10 as per IS 16104 : 2	2012 V C F	Voltage: 0.01 to 600V Current: 0.001 to 2 A Power : 0.01 W to 600W
		Operational Tests for abnormal conditions.	Clause 12 as per IS 16104 : 2	2012 0	Qualitative

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		Endurance	Clause 13 as per IS 16104 :	2012	Tempe -40°C Humid 10 % t	orature to 180°C lity : o 95% RH
12.	Solid State Light (LED) Sources	Luminous flux, Chromaticity co- ordinates.	Clause 6 as per IS 16105:20	012	Spectro 350nm Lumin Up to 1 CCT : CRI : U Co-ord	um : a to 800nm ous Flux: 100000 lm Up to 10000K, Up to 100 linates: Up to 1
13.	Solid State Lighting (LED) Products	Luminous flux measurement.	Clause 11 as per IS 16106:2	2012	Voltag Curren Power	e: 0.01 to 600V t: 0.001 to 2 A : 0.01 W to 600W
		Luminous intensity distribution.	Clause 12 as per IS 16106:2	2012	Test di	stance < 8.7m
		Luminous Efficacy.	Clause 13 as per IS 16106:2	2012	Field a 0.011x	$ngle \ge 10^{\circ}$, to 100000 lx,
		Color Characteristics.	Clause 14 as per IS 16106:2	2012	Spectro 350nm Lumin Up to 2 CCT : CRI : U Co-ord	um : to 800nm ous Flux: 100000 lm Up to 10000 K, Up to 100 linates: Up to 1

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14.	AC Supplied electronic ballasts for tubular	Marking.	Clause 7 as per IS 13021 Part 1: 1991		-	
	fluorescent lamps. General and Safety	Terminals.	Clause 8 as per IS 13021 Part 1: 1991		0.2 to 1 1Nm to	2 Nm 0 6 Nm
	Kequn ements.	Provisions for earthing	Clause 9 as per IS 13021 Part 1: 1991		0.1 Oh	m to 2.0 Ohm
		Creepage distances and Clearances	Clause 10 as per IS 13021 Part 1: 1991		0.01 to	o 300mm
		Protection against accidental contacts with live parts	Clause 11 as per IS 13021 Part 1: 1991		30N, 50 Specifi	0V, ed gauges
		Protection against electric shock.	Clause 12 as per IS 13021 Part 1: 1991		30N, 50 gauges	0V, Specified 0 to 5kV
		Moisture Resistance and Insulation.	Clause 13 as per IS 13021 Part 1: 1991		Temper 180°C Humid 50 to 11 0.100 t	rature -40°C to ity : 10 to 95%rh 200V DC ο 9999 MΩ
		Electric Strength	Clause 14 as per IS 13021 Part 1: 1991		0.20 to 0.01 to	5.00 kV AC 10 , 100.0mA
		Abnormal conditions	Clause 15 as per IS 13021 Part 1: 1991		0.1 to	300V
		Fault Conditions	Clause 16 as per IS 13021 Part 1: 1991		0.1 to 3	300V

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		Current carrying parts and connections.	Clause 17 as per IS 13021 Part 1: 1991		0.2 to 1 1Nm to	.2 Nm 6 Nm
		Resistance to Heat and Fire	Clause 18 as per IS 13021 Part 1: 1991		35 to 3 Ball Dia 5mmFo Vernier to 300 r	00°C ameter: rce 1: 20.0N, caliper: 0.01mm nm
					Glow wire tes Tip Ten to 960°0	t apparatus : nperature 550°C C
		Resistance to corrosion	Clause 19 as per IS 13021 Part 1: 1991		Qualitat	tive
	AC Supplied electronic ballasts	Marking.	Clause 5 as per IS 13021 Part 2: 1991			
	fluorescent lamps. Performance	Starting Conditions	Clause 7 as per IS 13021 Part 2: 1991		Voltage Current	: 0.01 to 600V : 0.001 to 2 A
	Kequirements	Operating Conditions.	Clause 8 as per IS 13021 art 2: 1991		Power :	0.01 w to 600 w
		Circuit Power Factor.	Clause 9 as per IS 13021 Part 2: 1991			
		Supply Current.	Clause 10 as per IS 13021 Part 2: 1991			

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specificati against which tests are performed	ion	Range of T Limits of D	Testing / Detection
		Maximum current in any lead to a cathode.	Clause 11 as per IS 13021 Part 2: 1991			
		Current Waveforms.	Clause 12 as per IS 13021 Part 2: 1991			
		Magnetic Screening.	Clause 13 as per IS 13021 Part 2: 1991			
		Operational Tests for Abnormal conditions.	Clause 16 as per IS 13021 Part 2: 1991		Qualitative	
		Endurance.	Clause 17 as per IS 13021 Part 2: 1991		Temperature 40°C to 180°	°C
	AC and/or DC Supplied electronic	Marking.	Clause 5 as per IEC 60929 Edition 4.0 2011-05			
	tubular fluorescent lamps- Performance Poquiromonts	Starting Conditions	Clause 7 as per IEC 60929 Edition 4.0 2011-05		Voltage: 0.0 Current: 0.00 Power : 0.01	1 to 600V 01 to 2 A W to 600W
	Kequii ements.	Operating Conditions.	Clause 8 as per IEC 60929 Edition 4.0 2011-05		Voltage: 0.0 Current: 0.00 Power : 0.01	1 to 600V 01 to2 A W to 600W
		Circuit Power Factor.	Clause 9 as per IEC 60929 Edition 4.0 2011-05			
		Supply Current.	Clause 10 as per IEC 60929 Edition 4.0 2011-05)		

Lab	oratory	UL India Pvt. Ltd, 413, S	Sector 8, IMT Manesar,	Gurgao	on, Har	yana
Acc	reditation Standar	d ISO/IEC 17025: 2005				
Disc	cipline	Photometry Testing		Issue I	Date	05.08.2014
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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specificat against which tests are performed	ion 9	Range Limits	of Testing / of Detection
		Maximum current in any lead to a cathode.	Clause 11 as per IEC 6092 Edition 4.0 2011-05	9		
		Lamp operating Current Waveforms.	Clause 12 as per IEC 6092 Edition 4.0 2011-05	9		
		Operational Tests for Abnormal conditions.	Clause 14 as per IEC 6092 Edition 4.0 2011-05	9		
		Endurance.	Clause 15 as per IEC 6092 Edition 4.0 2011-05	9	Temper 180°C	ature:-40°C to
	Lamp control gear – Particular	Marking.	Clause 7 as per IEC 61347 Edition 2.0 2011-05	-2-3	Qualitat	ive
	a.c. and/or d.c. supplied electronic	Protection against accidental contact with live parts.	Clause 8 as per IEC 61347 Edition 2.0 2011-05	-2-3	30N, 50 Specifie	V, ed gauges
	control gear for fluorescent lamps.	Terminals.	Clause 9 as per IEC 61347 Edition 2.0 2011-05	-2-3	0.2 to 1. 1Nm to	2 Nm 6 Nm
		Provisions for earthing.	Clause 10 as per IEC 6134 Edition 2.0 2011-05	7-2-3	0.001 Ω	to1.8000Ω
		Moisture resistance and insulation.	Clause 11 as per IEC 6134 Edition 2.0 2011-05	7-2-3	Tempera -40°C t Humidit 50 to 12 0.100 tc	ature o 180°C ty : 10 to 95%rh 00V DC 99999 MΩ

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specificat against which tests are performed	ion	Range Limits	of Testing / of Detection
		Electric Strength.	Clause 12 as per IEC 61347 Edition 2.0 2011-05	7-2-3	0.20 to 0.01 to	5.00 kV AC 10 , 100.0mA
		Thermal endurance test for windings.	Clause 13 as per IEC 61347 Edition 2.0 2011-05	7-2-3	35 to 3	300°C
		Fault conditions	Clause 14 as per IEC 61347 Edition 2.0 2011-05	7-2-3		
		Protection of associated components.	Clause 15 as per IEC 61347 Edition 2.0 2011-05	7-2-3		
		Abnormal conditions.	Clause 16 as per IEC 61347 Edition 2.0 2011-05	7-2-3		
		Behavior of control gear at end of lamp life.	Clause 17 as per IEC 61347 Edition 2.0 2011-05	7-2-3	Qualita	tive
		Construction.	Clause 18 as per IEC 61347 Edition 2.0 2011-05	7-2-3	0.01 to	300mm
		Creepage distances and clearances.	Clause 19 as per IEC 61347 Edition 2.0 2011-05	7-2-3	0.01 to	300mm
		Screws, current-carrying parts and connections.	Clause 20 as per IEC 61347 Edition 2.0 2011-05	7-2-3	0.2 to 1 1Nm to	.2 Nm 6 Nm
		Resistance to heat fire and tracking	Clause 21 as per IEC 61347 Edition 2.0 2011-05	7-2-3	35 to 3 Ball Di Force I: Vernier 0.01mm Glow w : Tip Te to 960° 0.1 s to	300°C ameter: 5mm : 20.0N, · caliper: n to 300 mm vire test apparatus emperature 550°C C o 60 Min

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specificatic against which tests are performed	on R L	ange of Testing / imits of Detection
		Resistance to corrosion.	Clause 22 as per IEC 61347- Edition 2.0 2011-05	2-3	
	Ballasts for fluorescent lamps- for switch start	Terminals for external wiring.	Clause 4 as per IS 1534 Part 1 – 1977	0 1	.2 to 1.2 Nm Nm to 6 Nm
	circuits.	Screws, current-carrying parts and constructions.	Clause 5 as per IS 1534 Part 1 – 1977	0 1	.2 to 1.2 Nm Nm to 6 Nm
		Provisions for Earthing.	Clause 6 as per IS 1534 Part 1 – 1977	0.	Ω to 1.8000 $Ω$
		Creepage distances and clearances.	Clause 7 as per IS 1534 Part 1 – 1977	0	.01 to 300mm
		Marking.	Clause 8 as per IS 1534 Part 1 – 1977		
		Qualitative Examination.	Clause 9.4 as per IS 1534 Part 1 – 1977		
		Protection against accidental contacts and electric shock.	Clause 9.5 as per IS 1534 Part 1 – 1977	3) g:	0N, 50V, Specified auges
		Voltage across capacitors.	Clause 9.6 as per IS 1534 Part 1 – 1977	0	.01 V to 300 V
		Moisture resistance and Insulation	Clause 9.7 as per IS 1534 Part 1 – 1977	T 4 H 5 0	emperature 0°C to 180°C lumidity : 10 to 95%rh 0 to 1200V DC .100 to 9999 MΩ

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specificat against which tests are performed	ion Rang Limi	e of Testing / s of Detection
		Tests for thermal endurance of windings.	Clause 9.8 as per IS 1534 Part 1 – 1977	35 to 50 to 0.100 0.20 t 0.01 t	300°C 1200V DC to 9999 MΩ o 5.00 kV AC o 100.0mA
		Test for limitations of Ballast Heating.	Clause 9.9 as per IS 1534 Part 1 – 1977	Ambi	ent to 300°C
		Test for Mechanical strength.	Clause 9.10 as per IS 1534 Part 1 – 1977	30N, gauge	50V, Specified
				0.20N ,0.701	Im,0.35Nm,0.50Nm Nm,1.00Nm
		Resistance to Heat	Clause 9.11 as per IS 1534 Part 1 – 1977	Glow : Tip to 960 60598	wire test apparatus Temperature 550°C)°C As per UL/IEC 3
		Test for Resistance to corrosion.	Clause 9.12 as per IS 1534 Part 1 – 1977	Quali	tative
		Performance.	Clause 9.13 as per IS 1534 Part 1 – 1977	Volta Curre Powe	ge: 0.01 to 600V nt: 0.001 to 2 A r : 0.01 W to 600W
	Ballasts for tubular fluorescent lamps – Performance requirements.	Marking.	Clause 5 as per IEC 60921 Edition 2.1 2006-06	Quali	tative

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specificati against which tests are performed	on Rai Lim	nge of Testing / hits of Detection			
		Voltage at terminations of lamp or starter.	Clause 6 as per IEC 60921 Edition 2.1 2006-06	Vol Cur Pov	tage: 0.01 to 600V rent: 0.001 to 2 A			
		Pre-heating conditions.	Clause 7 as per IEC 60921 Edition 2.1 2006-06	10,				
		Lamp power and current.	Clause 8 as per IEC 60921 Edition 2.1 2006-06					
		Circuit power-factor.	Clause 9 as per IEC 60921 Edition 2.1 2006-06					
		Supply current.	Clause 10 as per IEC 60921 Edition 2.1 2006-06					
		Maximum current in any lead to a cathode.	Clause 11 as per IEC 60921 Edition 2.1 2006-06					
		Current waveform.	Clause 12 as per IEC 60921 Edition 2.1 2006-06					
		Magnetic screening.	Clause 13 as per IEC 60921 Edition 2.1 2006-06					
	Lamp control gear Particular	Marking.	Clause 7 as per IEC 61347- First Edition 2001-04	2-11 Qua	litative			
	miscellaneous electronic circuits	Protection against accidental contact with live parts.	Clause 8 as per IEC 61347-2 First Edition 2001-04	2-11 30N gau	l, 50V, Specified ges			
	luminaires	Terminals.	Clause 9 as per IEC 61347- First Edition 2001-04	2-11 0.2 1Ni	to 1.2 Nm n to 6 Nm			

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	on	Range Limits	e of Testing / of Detection	_	
		Provisions for earthing.	Clause 10 as per IEC 61347- First Edition 2001-04	-2-11	0Ω to	1.8000Ω		
		Moisture resistance and insulation.	Clause 11 as per IEC 61347- First Edition 2001-04	-2-11	Tempe 40°C to Humid 10 to 9 50 to 1 0.100 t	rature – 5 180°C ity : 5% RH 200V DC 6 9999 MΩ		
		Electric Strength.	Clause 12 as per IEC 61347- First Edition 2001-04	-2-11	0.20 to 0.01 to	5.00 kV AC 100.0mA		
		Thermal endurance for windings.	Clause 13 as per IEC 61347- First Edition 2001-04	-2-11	35 to	300°C		
		Faults conditions.	Clause 14 as per IEC 61347- First Edition 2001-04	-2-11	0.1 to 3	800V		
		Construction.	Clause 15 as per IEC 61347- First Edition 2001-04	-2-11	0.01 to	o 300mm		
		Creepage distances and clearances.	Clause 16 as per IEC 61347- First Edition 2001-04	-2-11	0.01 to	300mm		
		Screws, current-carrying parts and connections.	Clause 17 as per IEC 61347- First Edition 2001-04	-2-11	0.2 to 1 1Nm to	1.2 Nm o 6 Nm		

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Disc	ipline	Photometry Testing	Is	ssue	Date	05.08.2014			
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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	n	Range Limits	e of Testing / of Detection			
		Resistance to heat, fire and tracking.	Clause 18 as per IEC 61347-2 First Edition 2001-04	2-11	35 - 3 Ball Di Force I Vernie: 0.01mi Glow v Tip Te: to 960° 0.1 s t	00°C iameter: 5mm : 20.0N, r caliper: n to 300 mm vire test appratus : mperature 550°C °C to 60 Min			
		Resistance to corrosion.	Clause 19 as per IEC 61347-2 First Edition 2001-04	2-11					
	Self-Ballasted lamps for General	Marking	Clause 6 as per IS 15111 (Part 1): 2002		Qualita	ttive			
li ₄ (C	(CFL).	Interchangeability	Clause 7 as per IS 15111 (Part 1): 2002		Go and for Bay caps.	l No go Gauges yonet and Screw			
		Protection against electric shock.	Clause 8 as per IS 15111 (Par 2002	rt 1):	30N, 5 gauges 30N, 5 gauges	0V, Specified 0V, Specified			
					30N, 5 gauges Gauges 60061-	0V, Specified s (As per IEC : 3)			

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Acc	reditation Standard	d ISO/IEC 17025: 2005	ISO/IEC 17025: 2005					
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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specificati against which tests are performed	on	Range Limits	e of Testing / of Detection		
		Insulation resistance	Clause 9.2 as per IS 15111 (Part 1): 2002		50 to 11 0.100 te	200V DC ο 9999 MΩ		
		Electric strength	Clause 9.3 as per IS 15111 (Part 1): 2002		0.20 to 0.01 to	5.00 kV AC 10 , 100.0mA		
		Mechanical Strength (Torsion resistance)	Clause 10 as per IS 15111 (Part 1): 2002		0.1 to1 0.1 to 5	4Nm 5 Nm		
		Cap temperature rise	Clause 11 as per IS 15111 (Part 1): 2002		Ambier	nt to 300°C		
		Resistance to heat	Clause 12 as per IS 15111 (Part 1): 2002		35 to Ball Di Force 1 Vernier 0.01mr	300°C ameter: 5mm : 20.0N, c caliper: n to 300 mm		
		Resistance to flame and ignition	Clause 13 as per IS 15111 (l 1): 2002	Part	Glow v :Tip Te to 960° 60598	vire test apparatus emperature 550°C C As per UL/IEC		
		Fault Condition.	Clause 14 as per IS 15111 (Part 1): 2002		0.1 to 3	300V		
		Dimensions	Clause 6 as per IS 15111 (Part 2): 2002		0.01 to	300mm		

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specificati against which tests are performed	ion l	Range of Testing / Limits of Detection				
		Starting and run-up	Clause 8 as per IS 15111 (Part 2): 2002		Spectrum : 350nm to 800nm Luminous Flux: Up to 100000 lm CCT : Up to 10000K, CRI : Up to 100 Co-ordinates: Up to 1 0.1 s to 60 Min				
		Lamp wattage	Clause 9 as per IS 15111 (Part 2): 2002	(Voltage: 0.01 to 600V Current: 0.001 to 2 A Power : 0.01 W to 600W				
		Luminous flux, Efficacy	Clause 10,15 as per IS 1511 (Part 2): 2002		Spectrum : 350nm to 800nm Luminous Flux: Up to 100000 lm				
		Colour	Clause 11 as per IS 15111 (Part 2): 2002	(0.001 to 0.5 co-ordinates				
		Lumen maintenance	Clause 12 as per IS 15111 (Part 2): 2002	(0.1 hrs to 10000 Hrs.				
		Life	Clause 13 as per IS 15111 (Part 2): 2002	(0.1 hrs to 10000 Hrs.				
		Harmonics	Clause 14 as per IS 15111 (Part 2): 2002	1	1 to 100th harmonic				
		Power Factor	Clause 16 as per IS 15111 (Part 2): 2002	, (1	Voltage:0.01to 600V Current: 0.001 to 2 A Power : 0.01 W - 600W				

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Acc	reditation Standard	d ISO/IEC 17025: 2005	ISO/IEC 17025: 2005					
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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specificat against which tests are performed	ion	Range o Limits o	of Testing / of Detection		
	Self-ballasted lamps for general	Marking.	Clause 4 as per IEC 60968 (Edition 2.0 2012-09)		Qualitati	ve		
	lignung services	Interchangeability	Clause 5 as per IEC 60968 (Edition 2.0 2012-09)		Go and No go Gauges for Bayonet and Screw caps.			
		Protection against electric shock	Clause 6 as per IEC 60968 (Edition 2.0 2012-09)		30N, 50V Specified	/, l gauges		
					30N, 50V Specified	/, l gauges		
					30N, 50V Specified	/, l gauges		
					Gauges (As per I	EC : 60061-3)		
		Insulation resistance	Clause 7.1 as per IEC 6096 (Edition 2.0 2012-09)	8	50 to 120 0.100 to 1	0V DC 9999 MΩ		
		Electric strength	Clause 7.2 as per IEC 6096 (Edition 2.0 2012-09)	8	0.20 to 5 0.01 to 1	.00 kV AC 0 , 100.0mA		
		Mechanical Strength (Torsion resistance)	Clause 8 as per IEC 60968 (Edition 2.0 2012-09)		0.1 to1.4 0.1 to 5 N	Nm Nm		
		Cap temperature rise	Clause 9 as per IEC 60968 (Edition 2.0 2012-09)		Ambient	to 300°C		

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specificati against which tests are performed	on	Range Limits	e of Testing / of Detection		
		Resistance to heat	Clause 10 as per IEC 60968 (Edition 2.0 2012-09)		35 to Ball D 5mmFe Vernie 0.01mm	300°C iameter: orce 1: 20.0N, r caliper: m to 300 mm		
		Resistance to flame and ignition	Clause 11 as per IEC 60968 (Edition 2.0 2012-09)		Glow v :Tip Te to 960°	wire test apparatus emperature 550°C °C		
		Fault Condition.	Clause 11 as per IEC 60968 (Edition 2.0 2012-09)		0.1 to 3	300V		
		Dimensions	Clause 3 as per IEC 60969 (Edition 1.2 2001-03)		0.01to	300mm		
		Starting and run-up	Clause 5 as per IEC 60969 (Edition 1.2 2001-03)		Spectro 350nm Lumin Up to 2 CCT : CRI : U Co-ord 0.1s to	um : to 800nm ous Flux: 100000 lm Up to 10000K, Jp to 100 linates: Up to 1 60 Min		
		Lamp wattage	Clause 6 as per IEC 60969 (Edition 1.2 2001-03)		Voltag Curren Power	e: 0.01 to 600V t: 0.001 to 2 A : 0.01 W to 600W		

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Acc	reditation Standard	d ISO/IEC 17025: 2005	ISO/IEC 17025: 2005					
Disc	cipline	Photometry Testing		Issue D	Date	05.08.2014		
Cert	ificate Number	T-2233		Valid U	Jntil	04.08.2016		
Last	aboratory ccreditation Standar iscipline ertificate Number ast Amended on No. Product / Material of Test Compact Fluorescent Lamps. Single-Ended Compact Fluorescent Lamps.	nded on -		Page		43 of 50		
S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	on	Range Limits	e of Testing / of Detection		
		Luminous flux	Clause 7 as per IEC 60969 (Edition 1.2 2001-03)		Spectru 350nm	im : to 800nm		
		Colour	Clause 8 as per IEC 60969 (Edition 1.2 2001-03)		Up to 100000 lm CCT : Up to 10000K, CRI : Up to 100 Co-ordinates: Up to 1			
		Lumen maintenance	Clause 9 as per IEC 60969 (Edition 1.2 2001-03)		0.1 hrs	to 10000 Hrs.		
		Life	Clause 10 as per IEC 60969 (Edition 1.2 2001-03)	1	0.1 hrst	to 10000 Hrs.		
		Harmonics	Clause 11 as per IEC 60969 (Edition 1.2 2001-03)		1 to 10	0th harmonic		
	Compact Fluorescent Lamps.	Life	IES LM-65-10		0.1 Hrs	to 10000 Hrs.		
	Single-Ended Compact Fluorescent Lamps.	Lumens and/or candelas and electrical values (volts, amperes, watts), chromaticity co-ordinates and CRI.	IES LM-66-11		Voltage Current Power Spectru 350nm Lumino Up to 1 CCT : 1	e: 0.01 to 600V t: 0.001 to 2 A : 0.01 W - 600W im : to 800nm ous Flux: 00000 lm Up to 10000K, la to 100		

CRI : Up to 100 Co-ordinates: Up to 1

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Acc	reditation Standar	d ISO/IEC 17025: 2005	ISO/IEC 17025: 2005					
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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specificati against which tests are performed	on	Range Limits	e of Testing / of Detection		
	Compact Fluorescent Lamps	Marking	Clause 4.2 & 4.3 as per AN C78.5-2003	SI	Qualita	tive		
		CRI	Clause 4.5 as per ANSI C78 2003	3.5-	Voltage Curren Power Spectru 350nm Lumine Up to 1 CCT : CRI : U Co-ord	e: 0.01 to 600V t: 0.001 to 2 A : 0.01 W to 600W im : to 800nm ous Flux: 00000 lm Up to 10000K, Jp to 100 inates: Up to 1		
		Input Power	Clause 4.6 as per ANSI C78 2003	3.5-	Voltage 0.01 - 6 Curren 0.001 t 0.01 W	e: 500V t: o 2 APower : ' to 600W		
		Starting time	Clause 4.7 as per ANSI C78 2003	3.5-	Spectru 350nm Lumino Up to 1 CCT : CRI : U Co-ord 0.1 s to	im : to 800nm ous Flux: .00000 lm Up to 10000K, Jp to 100 inates: Up to 1 o 60 Min		
		Run-up time	Clause 4.8 as per ANSI C78 2003	3.5-	0.1 s to	60 Min		

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Disc	ipline	Photometry Testing	Photometry Testing		Date	05.08.2014		
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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specificat against which tests are performed	ion 9	Range Limits	of Testing / of Detection		
		Luminous flux, Efficacy	Clause 4.9 & 4.11 as per A C78.5-2003	NSI	Spectru 350nm Lumino Up to 1 CCT : U CRI : U Co-ordi	um : to 800nm ous Flux: 00000 lm Up to 10000K, Up to 100 inates: Up to 1		
		Lumen Maintenance and Life Test	Clause 4.10 & 4.12 as per A C78.5-2003	ANSI	0.1 Hrs Spectru 350nm Lumino Up to 1	to 10000 Hrs. im : to 800nm ous Flux: 00000 lm		
		Power Quality	Clause 4.13 as per ANSI C 2003	78.5-	Voltage Current Power :	e: 0.01 to 600V c: 0.001 to 2 A c 0.01 W to 600W		
		Lamp current operating frequency	Clause 4.14 as per ANSI C 2003	78.5-	50 Hz t	o 2 MHz		
	Single-Based Fluorescent Lamps	Product Drawing (Overall length, Tube diameter, Tube length)	Clause 8 as per ANSI C78. 2005	901-	0.01 -30	00mm		
		Applications of Lamps on More than One Type of Circuit	Clause 9 as per ANSI C78. 2005	901-	Qualita	tive		
		Lamp Physical and Dimensional Requirements	Clause 10 as per ANSI C78 2005	3.901-	Gauges (As per	IEC : 60061-3)		

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		Lamp Electrical Characteristics	Clause 11 as per ANSI C78. 2005	901-	Voltage Current Power :	:: 0.01 - 600V : 0.001 - 2 A 0.01 W - 600W		
		Thermal Conditions	Clause 12 as per ANSI C78. 2005	901-	35 to 3	300°C		
	LED Modules for General Lighting	Marking.	Clause 4 as per IS 16103 – Part 2 : 2012		Qualitat	tive		
		Dimensions.	Clause 5 as per IS 16103 – Part 2 : 2012		0.01 to	300mm		
		Module Power	Clause 7 as per IS 16103 – Part 2 : 2012		Voltage Current Power :	: 0.01 to 600V : 0.001 to 2 A 0.01 W to 600W		
		Light Output	Clause 8 as per IS 16103 – Part 2 : 2012		Voltage Current Power : Test dis Field ar 0.011x t	:: 0.01 to 600V :: 0.001 to 2 A 0.01 W to 600W stance $\le 8.7m$, ngle $\ge 10^\circ$, o 100000 lx,		
		Chromaticity co-ordinates, Correlated Colour temperature (CCT) and Colour Rendering	Clause 9 as per IS 16103 – F : 2012	Part 2	Spectru 350nm CCT : U CRI : U Co-ordi Temper 40°C to 50 to 12 0.100 to	m : to 800nm Jp to 10000K, p to 100 nates: Up to 1 ature – 180°C 200V DC 0 9999 MΩ		
		LED module life.	Clause 10 as per IS 16103 – Part 2 : 2012		0.1 Hrs	to 10000 Hrs.		

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	Luminaire Performance	Marking	Clause 4 as per IS 16107 (Part 2/Sec 1): 2012					
		Luminaire Power, Luminous Flux, Lighting Intensity, Angular beam distribution, Luminaire Intensity Distribution, Luminaire efficacy, Chromaticity coordinates and correlated colour temperature (CCT), Photometric and Electric data	Clause 7, 8.1, 8.2, 8.3, 8.4, 8.5,9.1, 9.2 as per IS 16107 2/Sec 1): 2012 Clause 2.1,, 2.2 and 2.3 as p 16107 (Part 1): 2012	(Part er IS	Voltag Curren Power Test di Field a 0.011x Spectru 800nm Lumine 100000 CCT : CRI : U Co-ord	e: 0.01 to 600V t: 0.001 to 2 A : 0.01 W to 600W stance $\leq 8.7m$, ngle $\geq 10^{\circ}$, to 100000 lx, um : 350nm to ous Flux: Up to 0 lm Up to 10000K, Jp to 100 inates: Up to 1		
		LED Luminaire Life.	Clause 10, 10.2 as per IS 16 (Part 2/Sec 1): 2012	107	0.1 Hrs Spectru 350nm Lumine Up to 1 CCT : CRI : U Co-ord	s to 10000 Hrs. um : to 800nm ous Flux: 100000 lm Up to 10000K, Jp to 100 inates: Up to 1		

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	Lamp control gear – Particular requirements for	Marking.	Clause 7 as per IEC 61347-2-3 Edition 2.0 2011-09 / Clause 7 per IEC 61347-2-13 : 2006	3 Qi 7 as	ualitative			
A.C. and/or D. supplied electro control gear for fluorescent lam	supplied electronic control gear for fluorescent lamps/	Protection against accidental contact with live parts.	Clause 8 as per IEC 61347-2-3 Edition 2.0 2011-09 / Clause 8 per IEC 61347-2-13 : 2006	3 30 3 as Sp	DN, 50V, becified gauges			
	requirements for D.C. or A.C. supplied	Terminals.	Clause 9 as per IEC 61347-2-3 Edition 2.0 2011-09 / Clause 9 per IEC 61347-2-13 : 2006	3 0.: 9 as 11	2 to 1.2 Nm Nm to 6 Nm			
	controlgear for LED modules	Provisions for earthing.	Clause 10 as per IEC 61347-2- Edition 2.0 2011-09 / Clause 1 as per IEC 61347-2-13 : 2006	-3 00 10	Ω to 1.8000Ω			
		Moisture resistance and insulation.	Clause 11 as per IEC 61347-2- Edition 2.0 2011-09 / Clause 1 as per IEC 61347-2-13 : 2006	-3 Te 11 18 Hu 50 0.	emperature -40°C to 80°C umidity: 10 to 95% RH to 1200V DC 100 to 9999 MΩ			
		Electric Strength.	Clause 12 as per IEC 61347-2- Edition 2.0 2011-09 / Clause 1 as per IEC 61347-2-13 : 2006	-3 0.1 12 0.0	20 to 5.00 kV AC 01 to 10 , 100.0mA			
		Fault conditions.	Clause 14 as per IEC 61347-2- Edition 2.0 2011-09 / Clause 1 as per IEC 61347-2-13 : 2006	-3 Qi 14	ualitative			

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		Transformer Heating	Clause 15 as per IEC 61347 : 2006	7-2-13	Ambie	nt to 300°C			
		Abnormal conditions.	Clause 16 as per IEC 61347 Edition 2.0 2011-09 / Claus as per IEC 61347-2-13 : 200	7-2-3 se 16 06	Qualita	tive			
		Behavior of control gear at end of lamp life.	Clause 17 as per IEC 61347 Edition 2.0 2011-09	7-2-3	Qualita	tive			
		Construction.	Clause 18 as per IEC 61347 Edition 2.0 2011-09 / Claus as per IEC 61347-2-13 : 200	7-2-3 se 17 06	0.01 to	300mm			
		Creepage distances and clearances.	Clause 19 as per IEC 61347 Edition 2.0 2011-09 / Claus as per IEC 61347-2-13 : 200	7-2-3 se 18 06	0.01 to	o 300mm			
		Screws, current-carrying parts and connections.	Clause 20 as per IEC 61347 Edition 2.0 2011-09 / Claus as per IEC 61347-2-13 : 200	7-2-3 se 19 06	0.2 to 1 1Nm to	1.2 Nm o 6 Nm			
		Resistance to heat fire and tracking.	Clause 21 as per IEC 61347 Edition 2.0 2011-09 / Claus as per IEC 61347-2-13 : 200	7-2-3 ae 20 06	35 to Ball Di Force 1 Vernier to 300 Glow v : Tip T to 960 ^c 0.1 s to	300°C iameter: 5mm : 20.0N, r caliper: 0.01mm mm wire test apparatus emperature 550°C C o 60 Min			

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		Resistance to corrosion.	Clause 22 as per IEC 61347- Edition 2.0 2011-09 / Clause as per IEC 61347-2-13 : 200	-2-3 e 21 06	Clause 61347- 2011-0	22 as per IEC 2-3 Edition 2.0 5		