Data Sheet

EMI Test Accessories
CISPR 15

All accessories for CISPR 15
Emissions from Luminaries and Ancillary Devices

Triple-Loop Antenna

Artificial Lamps (linear version)

Artificial Lamps (U - type)

Artificial Lamps (circular version)

Single capped artificial Lamps

Transformer

Test Fixture

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OVERVIEW

Most lighting equipment is covered by the scope of CISPR 15, that applies to the emission of radio frequency disturbances from:

- all lighting equipment with a primary function of generating and/or distributing light intended for illumination purposes, and intended either for connection to the low voltage electricity supply or for battery operation;
- the lighting part of multi-function equipment where one of the primary functions of this is illumination;
- independent auxiliaries exclusively for use with lighting equipment;
- UV and IR radiation equipment;
- neon advertising signs;
- street/flood lighting intended for outdoor use;
- transport lighting (installed in buses and trains).

Excluded from the scope of this standard are:

- lighting equipment which utilize ISM frequencies for their operation (covered by CISPR 11);
- lighting equipment for aircraft and airports (covered by Civil Authority requirements)
- lighting which is not primarily intended for illumination purposes (such as photocopiers or slide projectors which are covered by CISPR 14 and display or indicator back lighting which are covered by the relevant product standard).

CISPR 15 specifies the following tests:

Luminaries, which use only *incandescent lamps* with no electronic switching functions incorporated are not required to undergo testing to meet the requirements of this standards;

Insertion loss
Applicable to fluorescent lamp luminaries with switch type starter circuits. Measurement are made over the frequency range 150kHz to 1.605MHz using dummy lamps fitted in place of the fluorescent tubes.

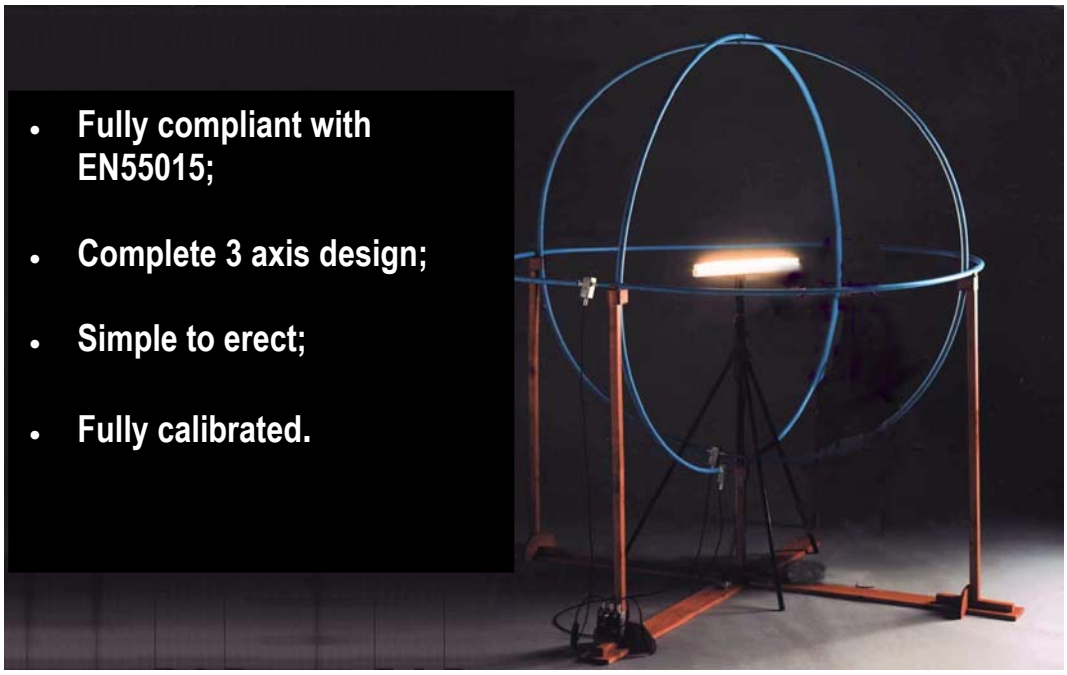
Disturbance Voltage (mains and control terminals)
These tests are applicable to all other luminaries in the 9kHz÷30MHz frequency range. Conducted Emission back down the mains lead is measured preferably with a LISN (Line Impedance Stabilization Network), or alternatively with a voltage probe if a LISN is not suitable.

Radiated Disturbance
This test is applicable to any luminaries which requires disturbance voltage tests and supplies the lamps at frequencies in excess of 100Hz. The test is performed within an enclosed loop antenna of 2m loop diameter. Antennas of this type are known as a Van Veen Loop and consist of three orthogonal loops enclosing a platform where the EUT is positioned. Frequency rang of measurement is 9kHz ÷30MHz.

The signals from the loop antenna, LISN or voltage probe are analyzed by through CISPR16-1-1 EMI receiver.

TLA-300 Loop Antenna

Developed specifically to meet the requirements of EN55015 for the testing of luminaries. Fully compliant and calibrated with 3 orthogonal loops mounted on a wooden frame. Loop diameter: 2metre.



TLA-300 is a calibrated **2-metre large loop antenna** manufactured to comply with product standard **CISPR 15** and **CISPR 16-1**. The calibrated frequency range of the TLA-300 is 9kHz to 30MHz and each antenna is supplied complete with antenna factor data so that it can be used with any EMC receiver or spectrum analyser capable of antenna factor compensation. The performance of the loops is matched to the 'ideal' loop curves as shown in EN 55015 using the prescribed test set-up.
The TLA-300 is a compete 3-axis antenna with a switching unit to select each loop in turn. The loops are 2m in diameter with the lowest point 0,5m above ground and are fitted with specially designed current transducers in fully screened housings. Ambient interference is strongly suppressed in open area measurements.
TLA-300 is designed to be collapse down to sub unit of convenient size.

Specifications in brief:

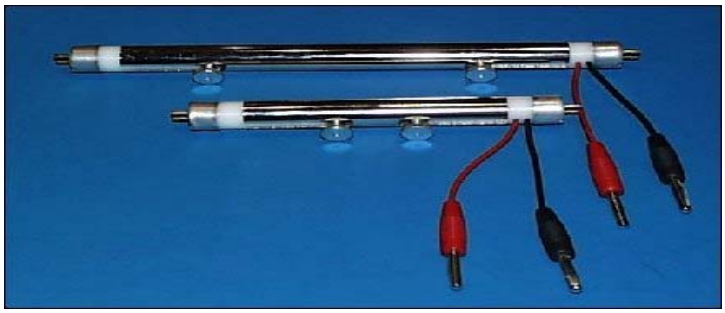
Design:	Fully compliant with EN 55015	
Frequency Range	9kHz to 30MHz	
Loops:	Triple independent loops, 2m diameter, switchable between X, Y, Z	
Sensor:	Matched inductively coupled	
Selector:	Loop selection by patch panel switch	
Output:	50 ohm BNC	
Calibration:	Each axis tested and correction data included with antenna	
Antenna Factor:	Matched to EN 55015, figure B4	
Power reqd:	None	
Dimensions:	2,6 x 2,1 x 2,1 m (height / width X / width Y)	

Dummy Lamps

Sets of dummy lamps, which are used in the circuits of Insertion loss measurement. Dummy lamps simulate the RF properties of the fluorescent lamps

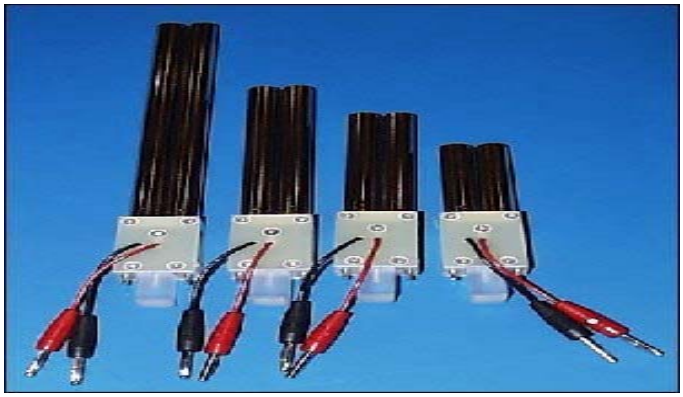
Linear Dummy Lamps

Linear Version	Watt	Length
Dummy Lamp with 38 mm Diameter	58 W	(1500 mm)
Dummy Lamp with 38 mm Diameter	36 W	(1200 mm)
Dummy Lamp with 38 mm Diameter	30 W	(895 mm)
Dummy Lamp with 38 mm Diameter	18 W	(590 mm)
Dummy Lamp with 25 mm Diameter	58 W	(1500 mm)
Dummy Lamp with 25 mm Diameter	36 W	(1200 mm)
Dummy Lamp with 25 mm Diameter	36 W	(970 mm)
Dummy Lamp with 25 mm Diameter	30 W	(895 mm)
Dummy Lamp with 25 mm Diameter	18 W	(590 mm)



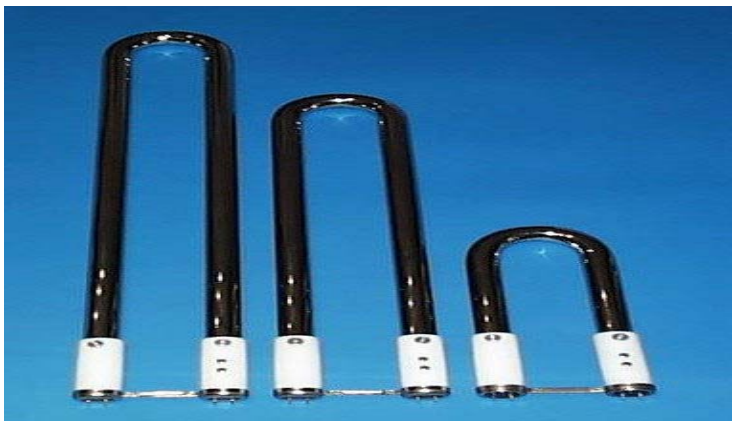
Single Capped Dummy Lamps (diameter 15 mm) with socket 2G7

Socket 2 G 7	Watt	Length
Dummy Lamp with 15 mm Diameter	11 W	(215 mm)
Dummy Lamp with 15 mm Diameter	9 W	(145 mm)
Dummy Lamp with 15 mm Diameter	7 W	(115 mm)
Dummy Lamp with 15 mm Diameter	5 W	(85 mm)



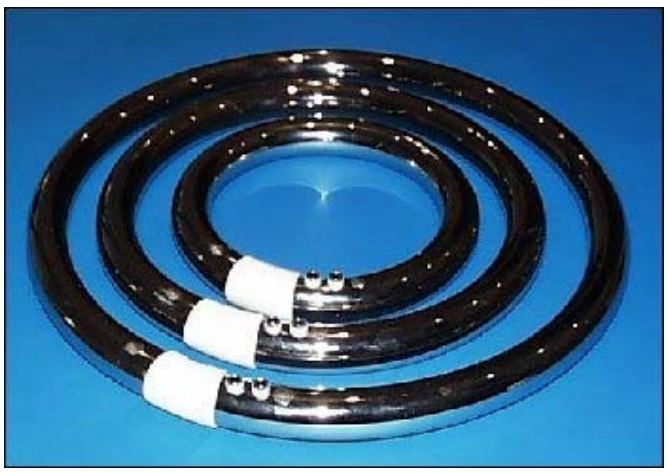
U Version Dummy Lamps

U Version	Watt	Length
Dummy Lamp with 38 mm Diameter	65 W	(765 mm)
Dummy Lamp with 38 mm Diameter	40 W	(607 mm)
Dummy Lamp with 38 mm Diameter	20 W	(310 mm)



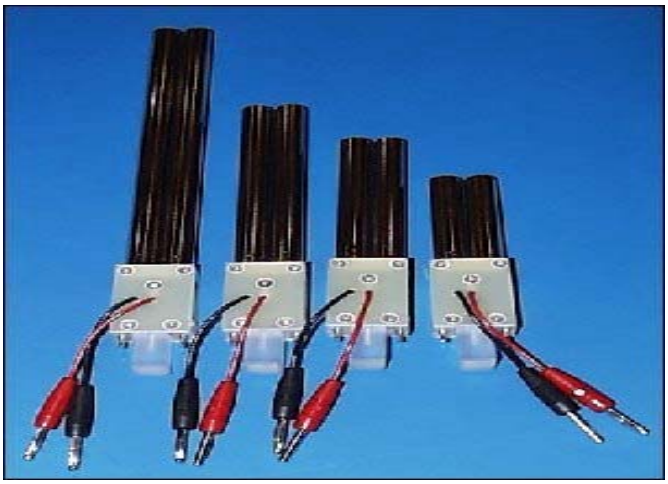
Circular Version Dummy Lamps

Circular Version	Watt	Length
Dummy Lamp with 38 mm Diameter	40 W	(413 mm)
Dummy Lamp with 38 mm Diameter	32 W	(311 mm)
Dummy Lamp with 38 mm Diameter	22 W	(216 mm)



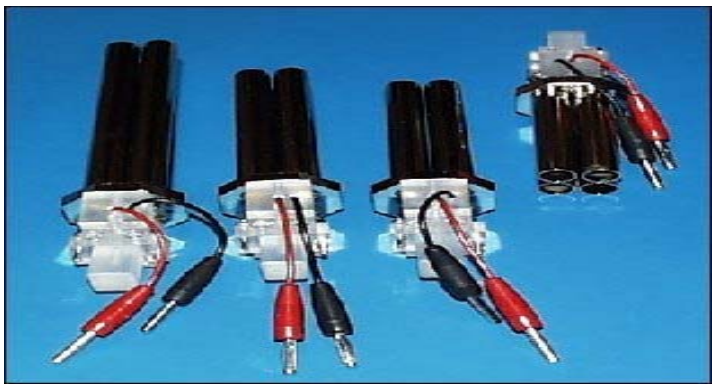
Single Capped Dummy Lamps (diameter 12 mm) with socket G 23

Socket G 23	Watt	Length
Dummy Lamp with 12 mm Diameter	11 W	(214 mm)
Dummy Lamp with 12 mm Diameter	9 W	(144 mm)
Dummy Lamp with 12 mm Diameter	7 W	(114 mm)
Dummy Lamp with 12 mm Diameter	5 W	(85 mm)



Single capped artificial lamps (diameter 12 mm) quad version

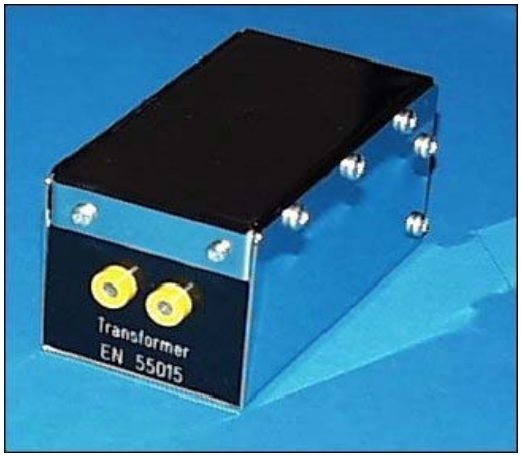
Socket G 24	Watt	Length
Dummy Lamp with 12 mm Diameter	26 W	(193 mm)
Dummy Lamp with 12 mm Diameter	18 W	(153 mm)
Dummy Lamp with 12 mm Diameter	13 W	(138 mm)
Dummy Lamp with 12 mm Diameter	10 W	(110 mm)



Transformer

The low-capacitance balance-to-unbalance transformer is used to obtain a symmetrical voltage from the RF generator.

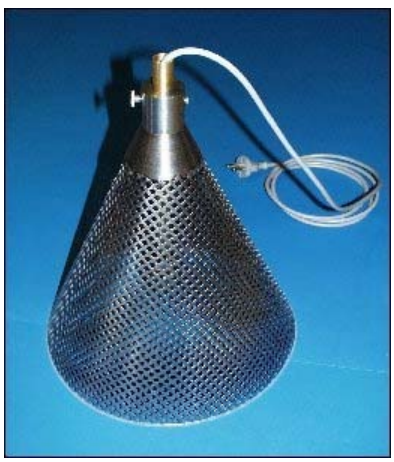
Balance-to-unbalance Transformer	Built into a nickel plated housing (55 x 55 x 100 mm)



The output impedance of the transformer, when the input is terminated by 50Ω, is 150Ω ± 10%, with angle phase less than 10°. The insulation of the transformer is checked as CISPR 15 requirement, in the f=150kHz÷1605kHz frequency range. The transfer characteristic is flat, ±0.5dB.
The transformer is mounted in a metal box and the side where the output terminal are fixed, is constructed of insulating material.

Metal Housing

Conical Metal Housing for self-ballasted fluorescent Lamps		**Type**
Test Fixture	Socket	**E 27**
Test Fixture	Socket	**E 14**
Test Fixture	Socket	**Bajonet**



ORDERING INFORMATION

ER55C	CISPR16-1 EMI Receiver 9kHz-30MHz frequency range, Peak, Quasi Peak & Average Detectors, 200Hz, 9kHz, IF Filters & Pre-selector, complete with: Windows software, Internal generator for auto-calibration and TRANSIENT LIMITER.
LS 16C	Artificial Mains Network (LISN), single phase, 2 x 16A according to CISPR 16, 9kHz-30MHz, for conducted emission measurement
LT 32C	Artificial Mains Network (LISN),single – three phases, 4 x 32A according to CISPR 16, 9kHz-30MHz, for conducted emission measurement
LISN 2VO-150Ohm	V- LISN 150Ω, per insertion loss measurement, according to CISPR 15, 150kHz 30MHz
BUT 15	Balance-to-unbalance Transformer, per insertion loss measurement, according to CISPR 15
HVP1	High Voltage Probe according to CISPR 16-1, 35 dB attenuation, Vmax 380V.
HVP1/1000	High Voltage Probe according to CISPR 16-1, 35 dB attenuation, Vmax 1000V.
TLA 300	2m Van Veen Loop Antenna.
Kal kit	Calibration Loop for any Van Veen Loop antenna.

Linear Version Dummy Lamp 38 mm Diameter, 58 W, 1500 mm 38 mm Diameter, 36W, 1200 mm 38 mm Diameter, 30W, 895 mm 38 mm Diameter, 18W, 590 mm 25 mm Diameter, 58W, 1500 mm 25 mm Diameter, 36 W, 1200mm 25 mm Diameter, 36W, 970mm 25 mm Diameter, 30 W, 895 mm 25 mm Diameter, 18W, 590mm	**U – Version Dummy Lamp** 38 mm Diameter, 65W, 765mm 38 mm Diameter, 40W, 607mm 38 mm Diameter, 20W, 310mm **Circular Dummy Lamps** 38 mm Diameter, 40W, 413mm 38 mm Diameter, 32W, 311mm 38 mm Diameter, 22W, 216mm
Dummy Lamps for 15 mm Fluorescent Lamps 15 mm Diameter, 13W, 517mm 15 mm Diameter, 8W, 288mm 15 mm Diameter, 6W, 212mm 15 mm Diameter, 4W, 136mm	**Dummy Lamps for 15 mm single capped Fluorescent Lamps Socket 2G 7** 15 mm Diameter, 11W, 215mm 15 mm Diameter, 9W, 145mm 15 mm Diameter, 7W, 115mm 15 mm Diameter, 5W, 85mm
Dummy Lamps for 12 mm single capped Flourescent Lamps Quad Tube) Socket G 24 12 mm Diameter, 26W, 149mm 12 mm Diameter, 18W, 130mm 12 mm Diameter, 13W, 115mm 12 mm Diameter, 10W, 87mm	**Dummy Lamps for 12 mm single capped Flourescent Lamps (Twin Tube) Socket G 23** 12 mm Diameter, 11W, 214mm 12 mm Diameter, 9W, 144mm 12 mm Diameter, 7W, 114mm 12 mm Diameter, 5W, 85mm
Conical Metal Housing for self-ballasted flourescent Lamps Test Fixture Socket E 27 Test Fixture Socket E 14 Test Fixture Socket Bajonet	**Balance-to-unbalance Transformer** Built into a nickel plated housing (55 x 55 x 100 mm

Contact Us

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