



KEMA

MEASUREMENT/TECHNICAL REPORT

Sylvania Lighting International Ltd.

FCC ID: NU726020A

15th of May 1998

This report concerns (check ane):		☑ Original grant	☐ Class II change	
Equipment type: F	RF lighting devices (ISM)			
Measurement prod	edure used:	· · · · · · · · · · · · · · · · · · ·		
MP-5:1986				
Application for Certification prepared by:		Applicant for the device:		
Name Company Name	: H.T. Jonker : KRQ Nederland B.V.	Name Company Name	: Mr. B. Grabham : Sylvania Lighting International	
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1.4 Test Methodology

Conducted emission testing was performed according to the procedures as mentioned in Section 18.307(c) of 47CFR, Part 18 subpart C. According to Section 18.203(a) this type of device shall be classified as a consumer ISM (lighting) device and thus is subject to certification. The measurements were performed in accordance with the test methodology of Measurement Procedure MP-5:1986.

Due to the operating frequency, generated in the device (52 kHz working frequency) and according to Section 18.309 the highest frequency of interest is 30 MHz. No field strength limits for (RF lighting devices) apply for the DUT, according to Section 18.305(c) of 47CFR.

1.5 Test Facility

The open area test site and conducted measurement facility used to collect the radiated and conducted measurement data are located at the premises of KEMA Nederland B.V., Utrechtseweg 310, in Arnhem, The Netherlands. The FCC has per Public Notice declared this measurement facility had been reviewed and to be in compliance with the requirements of Section 2.948 of the FCC Rules. It was accepted by letter with accreditation number 31040/SIT; 1300F2, dated January 13 1998.

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3 SYSTEM TEST CONFIGURATION

3.1 Justification

The system was configured for testing in a typical fashion (as a customer would normally use it). The lamp was mounted into a separate fitting. According to Section 7.1 of MP-5 the fitting was connected to a power supply lead of approximately 1 m.

3.2 Configuration of Tested System

3.2.1 Device under test

Device : Energy saving light

Trade mark (brand): - Sylvania

- SLi - ABCO

- Westinghouse

Type : Mini-Lynx 7W/728

Serial number : proto

FCC ID : NU726020A Power supply : $120 V_{ac} / 60 Hz$

Operating frequency: 52 kHz
Enclosure : plastic/metal

Interface cabling : not applicable Shield termination : not applicable

3.2.2 Auxiliary equipment

Not applicable

3.3 Special Accessories

Not applicable

3.4 Modifications

Not applicable

8 CONDUCTED EMISSION DATA

8.1 Test procedure

In accordance with Section 18.307(c) the conducted radio frequency disturbance voltages between each of the power lines (live, neutral) and the ground terminal were determined over the frequency range from 450 kHz to 30 MHz. The AC power line conducted emission measurements were performed at the line voltage of 120 $V_{\rm ac}$ and at the power frequency of 60 Hz.

The measurement shall show compliance of this consumer (ISM) lighting device with the conducted limit of 250 μ V (48 dB μ V). The test set-up was in accordance with the requirements of MP-5:1986.

The initial step in collecting conducted data is a peak scan measurement over the frequency range of interest. Significant peaks are then marked, and these signals are then quasi-peaked. In accordance with Section 2.2.2 of MP-5 the detector function of the measurement receiver was set to the CISPR Quasi-Peak function for this lighting device. This procedure is implemented in the utilised test receiver by the incorporated EMI software. The test receiver employs a CISPR quasi-peak detector function with a bandwidth of 9 - 10 kHz.

8.2 Test Instrumentation Used for Conducted Measurements

Туре	Manufacturer	Serial no.	ORS No.	Cal interval
ESH3-Z5	Rohde & Schwarz	840062/017	077959	yearly (07-98)
ESHS 10	Rohde & Schwarz	840048/009	077969	yearly (07-98)
	ESH3-Z5	ESH3-Z5 Rohde & Schwarz	ESH3-Z5 Rohde & Schwarz 840062/017	ESH3-Z5 Rohde & Schwarz 840062/017 077959

Note : The Object Registration Number (ORS) is a unique number within the KEMA quality system, which identifies the equipment.



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8.3 Measured Data (Mains conducted disturbance voltage)

Standard

FCC, Part 18 Subpart C Section 18.307(c)

Limits

Frequency	Limit	Limit	
[MHz]	(μ∨)	[dB(µV)]	
0.45 - 30.0	250.0	48.0	

Port

AC mains supply line/neutral

Results

Frequency	Level Line	Level Neutral	Limit
[MHz]	[dB(μV)]	[dB(µV)]	[dB(μV)]
0.541	44.2	44.7	48.0
0.705	42.6	42.1	48.0
0.922	38.0	38.3	48.0
1.034	36.9	36.7	48.0
1.738	29.3	29.1	48.0
2.284	21.8	21.3	48.0
3.641	32.6	32.3	48.0
3.914	34.9	34.7	48.0

Measurement uncertainty: 2 dB

Note

According to section 2.2.2 of MP-5 all readings are quasi-peak unless

stated otherwise, using a quasi-peak bandwidth of 9 - 10 kHz.

Judgement:

Pass (Passed by 3.3 dB)

Test personnel:

Tester Signature

Date: 1998-15-13

Name

: H.T. Jonker



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GENERAL INFORMATION

1.1 Client information

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Manufacturer : Sylvania Lighting International Lighting Ltd. (applicant)

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Country: United Kingdom

Agent : KEMA Registered Quality Nederland B.V.

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1.2 Product Description type Mini-Lynx 7W/827

The Sylvania/Magnetek Mini-Lynx self ballasted lamps are designed to replace a standard incandescent lamp to provide an energy efficient light source.

The working principle is the following: it is an AC/AC inverter that provides an almost sinusoidal high frequency voltage and current wave to the lamp. As showed in the block diagrams the AC input voltage is rectified in a DC voltage of amplitude 120*1.41 then with a half bridge switching oscillator it is converted to a square wave. The first sinusoidal harmonic component of this square wave is then fed to the lamp through a low pass filter which is a series resonant circuit. The half bridge is self oscillating and is driven by a saturating toroid.

It has also included a PTC to provide cathode pre-heating during start.

The Mini-Lynx 7W/827 is manufactured by Sylvania Lighting International Ltd. and will be marketed under four different brand names: Sylvania-, SLi-, ABCO- and Westinghouse Mini Lynx 7W/827.