



Engineering Statement

All measurement data on the attached reports was taken pursuant to FCC Rules and Regulations (Part 18, Sub-part C RF Lighting Devices) on the Philips Consumer Electronics Company site at Knoxville, Tennessee, which is recognized by the FCC. Although this data is taken under stringent laboratory conditions and to the best of our knowledge, represents accurate data, it must be recognized that emissions from this type equipment may be greatly affected by the final installation of the equipment. Therefore, Philips Consumer Electronics Company, while supporting the accuracy of the data in this report, takes no responsibility for use of equipment based on these tests. The manufacturer of this equipment must take full responsibility for any field problems which may arise, and agrees that Philips Consumer Electronics Company, in performing its functions in accordance with its objectives and purposes, does not assume or undertake to discharge any responsibility of the manufacturer to any other party or parties.

The measurement report was compiled and approved by:

A handwritten signature in cursive script, appearing to read "Richard Moyers", written over a horizontal line.

Richard Moyers
Lead Business Coordinator, EMI/EMC

A handwritten signature in cursive script, appearing to read "Fred A. Fisher", written over a horizontal line.

Fred A. Fisher
Manager Regulatory FCC/DOC

LIST OF TEST EQUIPMENT

PCEC REPORT #81261-1

<u>EQUIPMENT</u>	<u>MODEL NO.</u>	<u>SERIAL NO.</u>	<u>CAL DATE</u>	<u>DUE DATE</u>
* HP Spectrum Analyzer	HP8568B	2216A02236	07/97	07/98
* HP Spectrum Analyzer	HP8568B	2314A02597	03/98	03/99
HP Spectrum Analyzer	HP8566B	3014A06612	07/97	07/98
HP QP Adapter	HP85650A	A1001	07/97	07/98
HP RF Pre-Selector	HP85685A	2724A00627	07/97	07/98
* HP Spectrum Analyzer	HP8566A	2637A03486	03/98	03/99
* HP QP Adapter	HP85650A	2043A00279	03/98	03/99
* HP RF Pre-Selector	HP85685A	2724A00595	07/97	07/98
* Fischer LISN	50/250uh		NCR	NCR
* RF Screen Room			NCR	NCR
* System Controller	HP9000		NCR	NCR
System Controller	HP9836		NCR	NCR
* System Controller	HP9816		NCR	NCR
Eaton Field Int Mtr	NM17/27A	062603355	08/96	08/97
Eaton Field Int Mtr	NM37/57A-SL	062603355	08/96	08/97
Eaton QP Adapter	CCA7	017703080	08/96	08/97
* Bicon Antenna	EMCO 3110	9209-1549	08/97	08/98
Bicon Antenna	EMCO 3110	9304-1679	08/97	08/98
* Log Perodic Antenna	EMCO 3146	9210-3455	08/97	08/98
Log Perodic Antenna	EMCO 3146	9209-01549	08/97	08/98
Conical Log Spiral Ant.	EMCO 3102	90032701	08/95	08/96
Conical Log Spiral Ant.	EMCO 3102	90032790	08/95	08/96
Horn Antenna	EMCO 3115	90053462	08/95	08/96
Horn Antenna	EMCO 3115	90053459	09/95	09/96
Loop Antenna	EMCO 6512	1198	09/96	06/98
Field Str. Meter	Holiday 3004	33311	12/95	12/96
RF Survey Meter	Holiday 3600	none	11/95	11/96
Power Analyzer	Magtrol 4612B	OE2289	03/98	03/99
AC Power Supply	Elgar 3001	7911	NCR	NCR
Signal Generator	HP8640B	1851A09701	03/98	03/99
Sweep Generator	HP83620A	3213A01206	04/98	04/99

NOTE: AN * INDICATES THAT THE INSTRUMENT WAS USED DURING TESTING OF THE EUT.

TEST PROCEDURE (ANSI C63.4 - 1992)

PCEC REPORT #81261-1
FCC ID: EWOHFL120139RS

ACRONYMS

(E.M.I.) Electromagnetic Interference
(E.U.T.) Equipment Under Test
(L.I.S.N.) Line Impedance Stabilizing Network

PROCEDURE-CONDUCTED LINE EMISSIONS

The EUT was placed in an RF Shield room on a wooden table 80 cm above the (2) 50 ohm/250 microhenry LISN's. The AC power leads were connected to two (2) 50 ohm/250 microhenry L.I.S.N.s. The system was energized and placed into its normal operating mode. The 50 ohm output of the L.I.S.N., was connected to the HP8568B RF Spectrum Analyzer. The spectrum was observed from 450 KHz to 30 MHz to identify the frequency of the emission that had the highest amplitude relative to the limit. For each mode of operation and for each current carrying conductor, cable and/or wire manipulation was performed while observing the spectrum analyzer. For this series of tests the emission that had the highest amplitude relative to the limit was recorded.

Based on the preliminary tests, the EUT, and the cable and/or wire configuration and mode of operation which produced the highest emission relative to the limit was selected for the final AC powerline conducted emissions test. The final test on all current carrying conductors of the power cords that comprise the EUT was performed without variation of the configuration determined during the preliminary tests.

The X-Y plots of EMI generated by the E.U.T. were taken. The 6 highest readings from 450 KHz - 30 MHz for each side of the line are recorded. Unless otherwise specified, all Conducted Emissions are recorded as "PEAK" spectrum analyzer readings.

PROCEDURE-SPURIOUS RADIATION

The EUT was placed on a wooden table 80 cm above the floor of an RF screen cage. A receiving Bicon antenna was placed 1 meter away from the EUT on a wooden tri-pod 1 meter above the floor of the RF screen cage. The receiving antenna was connected to the 50 Ω input of the HP8568B spectrum analyzer. The EUT was powered by a 120 VAC supply, and was configured into it's normal operational mode.

TEST PROCEDURES CONT'D

The 30 to 40 MHZ band was observed on the spectrum analyzer while the EUT power and control leads were adjusted to maximize emissions. The peak frequencies for this band were recorded. This search for emissions continued from 40 MHZ up to the upper frequency required per FCC 15.33 (b) (1). Upon completion of the pre-scan, the EUT was placed on a wooden table 80 cm above a rotatable wooden turntable mounted level with the metal ground plane of the 3 meter test site.

The EUT was booted up into its normal operational mode. The worst case cable configuration determined by the pre-scan was duplicated and re-maximized at the worst case frequency. Based on this configuration all frequencies located during the 1 meter pre-scan were measured at the 3 meter test distance. The receiving antennas were varied in height from 1 to 4 meters and the remote turntable was rotated 360° to find the maximum emissions. This test was performed for all modes of operation.

For all measured frequencies above 999MHZ the Conical Log Spiral antenna and/or the Double Ridged Guide Antenna was placed 3-meters away from the system on a 4-meter fiberglass mast. The receiving antenna was connected to an HP8566B spectrum analyzer via 60 ft. of 50ohm Heliax (wave guide) cable.

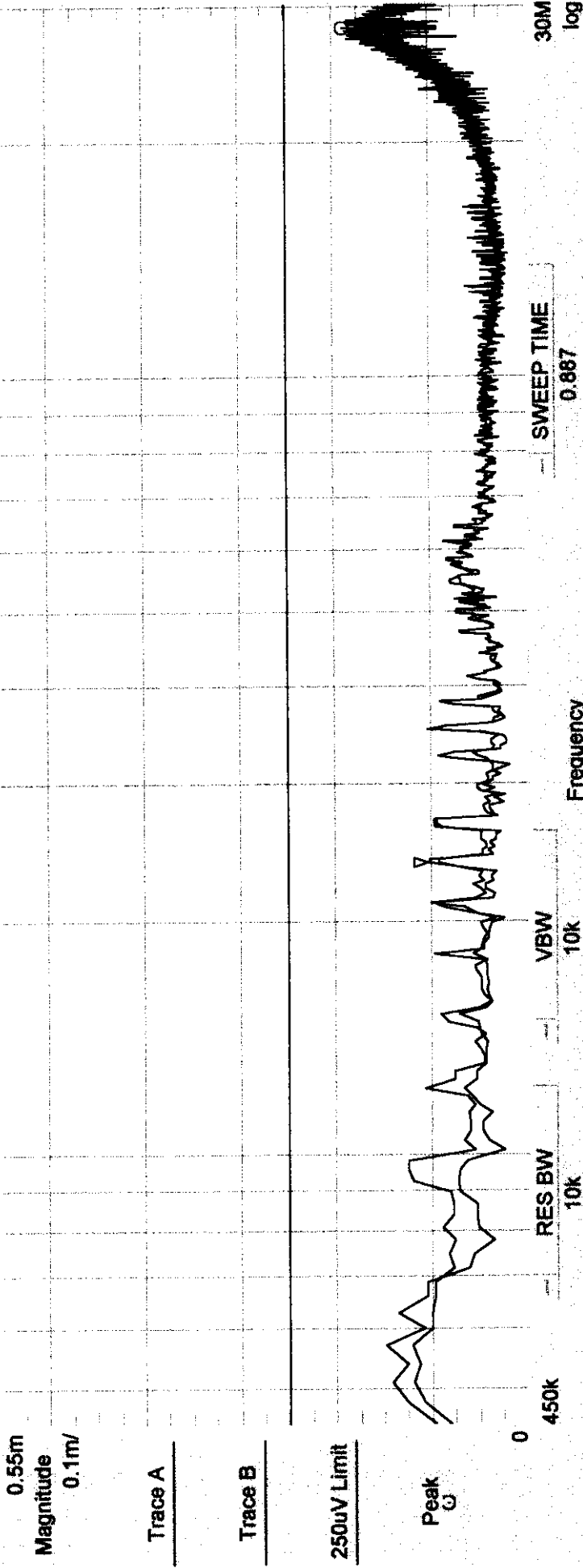
All significant emissions are reported on the attached data report. To verify that the E.M.I. emissions measured were generated by the E.U.T., the system power was interrupted at peak reading while observing the Spectrum Analyzer. Unless otherwise specified, all Radiated Emissions are recorded as "PEAK" spectrum analyzer readings. The Radiated Field Strength was calculated as follows: Maximum Emission Received (dB) + Antenna Factor (dB) + Cable Loss (dB) = Field Strength dBuv/Meter.



LINEAR 0.495m 20 28.05M 0.19m 250uV -0.2998m PEAK

HFL-120-139 RS ADVANCE TRANSFORMER Wed 06May/1998 4:41:19 PM

Class B Line Conducted



V — x: 2369k y: 0.1029m

PEAK PLOT
15min WARM UP TIME
Report # 81261-1

REPORT# 81261-1
DATE OF TEST: 5-6-98

PHILIPS CONSUMER ELECTRONICS COMPANY
EMI LAB
P.O. 14810
KNOXVILLE, TN 37914-1810

RADIATED RF LEVEL

MANUFACTURER: PHILIPS LIGHTING
MODEL: HFL-120-1/39 RS
SUPPORT EQUIPMENT:

FREQUENCY (Mhz)	DbuV/M <u>HORIZ.</u>	DbuV/M <u>VERT.</u>	DbuV/M <u>LIMIT</u>	DbuV/M <u>DELTA</u>
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THE SPECTRUM WAS SCANNED FROM 30 -1000 MHz AND NO SIGNIFICANT EMISSIONS WERE FOUND

QP= QUASI PEAK READING AT THAT FREQUENCY

DELTA REFERS TO THE DB DIFFERENCE BETWEEN THE HIGHER OF THE HORIZONTAL AND THE VERTICAL READINGS AND THE DB LIMIT AT THAT FREQUENCY.

ABOVE READINGS ARE PEAK READINGS WITH CABLE AND ANTENNA FACTORS INCLUDED EXCEPT AS NOTED QUASI-PEAK READINGS.

TEST DISTANCE BETWEEN DEVICE UNDER TEST AND RECEIVING ANTENNA WAS 10 METERS.

NOTE: AN "*" INDICATES THAT THE DEVICE UNDER TEST EXCEEDS THE FCC CLASS B LIMIT AT THAT FREQUENCY.

SUMMARY OF RESULTS
(ANSI C63.4 - 1992)

PCEC REPORT #81261-1
FCC ID: EWOHFL120139RS

The measurement data (Report #81261-1) indicates the Philips Lighting model HFL-120-1/39 RS **MEETS** the requirements as set forth by the FCC for Class B RF Lighting Devices with the following modifications.

MODIFICATIONS:

NONE

Mass production of final instrument systems utilizing the exact electrical/ mechanical components, lead dress, and RF ground paths as tested by PCEC will not likely cause harmful interference to any radio communication, radio navigation or safety services. Any deviation in design from the system tested by our facility will require further verification of FCC Compliance by PCEC.

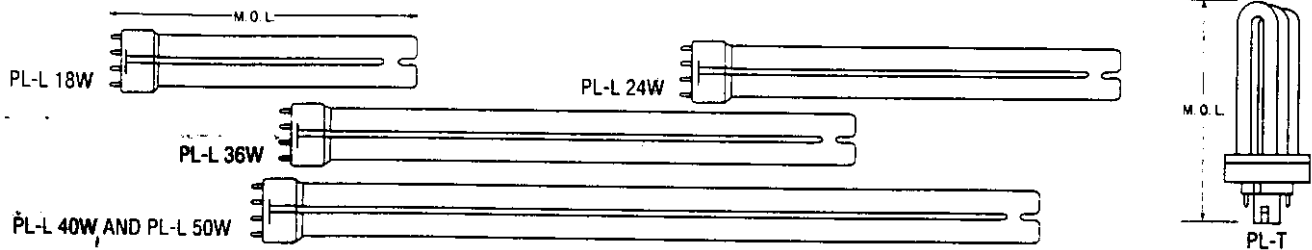
PHILIPS CONSUMER ELECTRONICS COMPANY


Fred A. Fisher

Manager Regulatory FCC/DOC



Compact Fluorescent Lamps



Nominal Lamp Watts	Bulb	Base	Product Number 046677-	Ordering Code	Generic Designation	Pkg. Qty.	Description	M.O.L. (In.)	Avg. Life. Hrs. (202)	Approx. Initial(203) Lumens(204)	Design Lumens (208)	CRI
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PL Long Fluorescent Lamps

High color rendering, high efficacy lamps feature 4 pin base for use with preheat, rapid start, electronic and dimming circuits.

18	PL-L	2G11	SSS	34500-9	PL-L 18W/30	FT18W/2G11/30	25	3000K	8 1/8	12,000	1250	1125	82
				34501-7	PL-L 18W/41	FT18W/2G11/41	25	4100K	8 1/8	12,000	1250	1125	82
24	PL-L	2G11	SSS	34505-8	PL-L 24W/30	FT24W/2G11/30	25	3000K	12 1/8	12,000	1800	1620	82
				34506-2	PL-L 24W/41	FT24W/2G11/41	25	4100K	12 1/8	12,000	1800	1620	82
36	PL-L	2G11	SSS	34511-6	PL-L 36W/30	FT36W/2G11/30	25	3000K	16 1/8	12,000	2900	2610	82
				34942-3	PL-L 36W/35	FT36W/2G11/35	25	3500K	16 1/8	12,000	2900	2610	82
				34513-2	PL-L 36W/41	FT36W/2G11/41	25	4100K	16 1/8	12,000	2900	2610	82
38	PL-L	2G11	SSS	30042-8	PL-L 38W/30	FT40W/2G11/RS30	25	3000K	22 1/8	20,000	3300	2970	82
				30043-4	PL-L 38W/35	FT40W/2G11/RS35	25	3500K	22 1/8	20,000	3300	2970	82
				30044-2	PL-L 38W/41	FT40W/2G11/RS41	25	4100K	22 1/8	20,000	3300	2970	82
50	PL-L	2G11	SSS	34747-6	PL-L 50W/30/RS	FT50W/2G11/RS30	25	3000K	22 1/8	14,000	4300	3870	82
				34753-4	PL-L 50W/35/RS	FT50W/2G11/RS35	25	3500K	22 1/8	14,000	4300	3870	82

PL Triple 4 pin Fluorescent Lamps

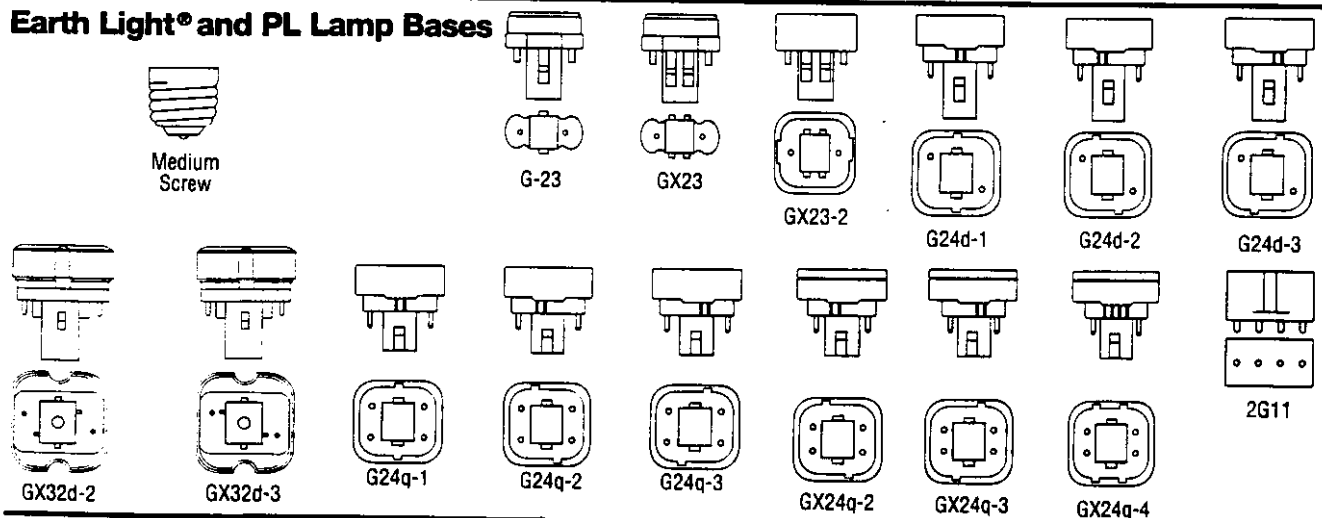
High color rendering, high efficacy lamps feature 4 pin base for use with preheat, rapid start, electronic and dimming circuits.

18	PL-T	GX24q-2	SSS	22224-0	PL-T 18W/30/4P	FM18W/GX24q/30	24	3000K	4 1/8	10,000	1200	960	82
				22231-5	PL-T 18W/35/4P	FM18W/GX24q/35	24	3500K	4 1/8	10,000	1200	960	82
				22233-1	PL-T 18W/41/4P	FM18W/GX24q/41	24	4100K	4 1/8	10,000	1200	960	82
26	PL-T	GX24q-3	SSS	34741-9	PL-T 26W/30/4P	FM26W/GX24q/30	24	3000K	4 1/8	10,000	1800	1440	82
				34742-7	PL-T 26W/35/4P	FM26W/GX24q/35	24	3500K	4 1/8	10,000	1800	1440	82
				35366-4	PL-T 26W/41/4P	FM26W/GX24q/41	24	4100K	4 1/8	10,000	1800	1440	82
32	PL-T	GX24q-3	SSS	34743-5	PL-T 32W/30/4P	FM32W/GX24q/30	24	3000K	5 1/8	10,000	2400	1920	82
				34744-3	PL-T 32W/35/4P	FM32W/GX24q/35	24	3500K	5 1/8	10,000	2400	1920	82
				35367-2	PL-T 32W/41/4P	FM32W/GX24q/41	24	4100K	5 1/8	10,000	2400	1920	82
42	PL-T	GX24q-4	SSS	22125-9	PL-T 42W/30/4P	FM42W/GX24q/30	24	3000K	6 1/8	10,000	3200	2560	82
				22126-7	PL-T 42W/35/4P	FM42W/GX24q/35	24	3500K	6 1/8	10,000	3200	2560	82
				22134-1	PL-T 42W/41/4P	FM42W/GX24q/41	24	4100K	6 1/8	10,000	3200	2560	82

SSS — Energy Saving Product

High Color Rendering Lamps

Earth Light® and PL Lamp Bases



BILL OF MATERIAL - CAT. # HFL 120 1/39 RS

DESIGNATION	DESCRIPTION	QUANTITY
R1,R2	RESISTOR, SCF,180K,1W,5%	2
R3,R4	RESISTOR, CF,33,1W,5%	2
R5,R6	RESISTOR, CF,220K,1/2W,5%	2
R7,R8	RESISTOR, CF,62K,1/2W,5%	2
R101	RESISTOR, CF,1K,1/8W,5%	1
R102,R108,R111	RESISTOR, CF,100K,1/8W,5%	3
R103	RESISTOR, CF,820K,1/8W,5%	1
R104,R107,R109	RESISTOR, CF,200K,1/8W,5%	3
R105,R106	RESISTOR, MF,24.9K,1/8W,1%	2
C1	CAPACITOR,MEF,1.5uF,250V,10%	1
C2	CAPACITOR,E,47uF,250V,20%,2KH	1
C3,C4	CAPACITOR, MEF,1.5uF,250V,10%	2
C5	CAPACITOR,CER,5000pF,3KV,20%	1
C6	CAPACITOR,MEF,.1uF,100V,10%	1
C7	CAPACITOR,PP,.068uF,400V,5%	1
C8	CAPACITOR,PP,.01uF,630V,5%	1
C10	CAPACITOR,PP,.0082uF,2KV,5%	1
C12,C13	CAPACITOR,CER,.22uF,100V,10%	2
C101,C104	CAPACITOR,CER,.47uF,50V,20%	2
C102	CAPACITOR,CER,.1uF,50V,10%	1
C103	CAPACITOR,CER,.01uF,50V,5%	1
D1,D2,D3,D4	DIODE, RECT,1A,400V	4
D5,D7	DIODE, FR,1A,600V	2
D6,D8,D107	DIODE, SCHOTTKY,1A,40V	3
D12	DIAC, 34-40V	1
D17-D20,D101	DIODE, SIGNAL,150mA,75V	5
D22	DIODE, ZENER,43V,1/2W,5%	1
D102,D104-D106,D108	DIODE, SIGNAL,150mA,75V	5
D21,D103,D109	DIODE, ZENER,7.5V,1/2W,5%	3
Q1,Q2	TRANSISTOR,2SC4054,5A,850V	2
Q3,Q102	TRANSISTOR,MPSA14(VT)	2
Q101	TRANSISTOR,2N7000,60V,.5A,5ohms	1
Q103	TRANSISTOR,IRLD014	1
U101	IC,14 STAGE RIPPLE OSCILL	1
T1	TRANSFORMER, INPUT,CIT-021	1
T2	TRANSFORMER, CHOKE,CHT-007A	1
T4	TRANSFORMER,POWER,CPT-050A	1
F1	FUSE,7A,125V,PICO	1
V1	VAR,150Vac	1
40-001-037-02	PCB,EOL-RS	1