ECMG Worldwide Certification Solutions
ECMG-Worldwide-Certification-Solution, Inc.
www.ecmg-global.com

FCC Test Report

On Model Name: Self-Ballasted Lamps and Lamp Adapters

Model Number: ELS-MGU2415,ELS-MGU2418,ELS-MGU2423,ELS-MGU2424 (26)

Model Tested: ELS-MGU2424 (26)

Brand Name: FSL

FCC ID Number: P6CFSL0812B

Prepared for

FOSHAN ELECTRICAL AND LIGHTING CO.,LTD.

According to FCC Part 18

Test Report #:	FOS-0812-10118-FCCID
Prepared by:	May Wang
Reviewed by:	Jawen Yin
QC Manager:	Paul Chen

Test Report Released by: Paul J. Chen Feb. 10, 2009

Paul Chen Date

List of Attached Files

Exhibit Type	File Description	File Name
731 Form	731 Form	P6CFSL0812B_731 form.pdf
Test Report	Test Report	P6CFSL0812B_Test report.pdf
Operational Description	Technical Description	P6CFSL0812B_operational description.pdf
External Photos	External Photos	P6CFSL0812B_External Photos.pdf
Internal Photos	Internal Photos	P6CFSL0812B_Internal Photos.pdf
Block Diagram	Block Diagram	P6CFSL0812B_Block Diagram.pdf
Schematics	Circuit Diagram	P6CFSL0812B_Schematics.pdf
ID Label&Location	Label Artwork and Location	P6CFSL0812B_Label & Location.pdf
User Manual	User Manual	P6CFSL0812B_User Manual.pdf
Test setup photos	Test setup photos	P6CFSL0812B_Test Setup Photos.pdf

Test Location

Tests performed at ECMG Worldwide Certification Solution Inc. (China) in a Certified ANSI Semi-Anechoic Chamber and Shielded Room performed testing.

Test Site Location:	*Shenzhen Academy of Metrology and Quality Inspection.* *Bldg. of Metrology & Quality Inspection, Longzhu Road, Shenzhen, Guangdong, China.*
Tel:	*86-755-26941617*
Fax:	*86-755-26941615*
FCC Registration Number:	*274801*
CNAS Nunber:	*L0579*

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Opinions and Interpretations

This test report relates to the abovementioned equipment under test (EUT). Without the permission of ECMG Worldwide Certification Solution Inc. Test Lab this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark on this or similar products. The manufacturer has sole responsibility of continued compliance of the device.

Statement of Measurement Uncertainty

The data and results referenced in the document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities that can account for a nominal measurement error. Furthermore, component and process variability of devices similar to that tested may result in additional deviation.

Administrative Data

Test Sample	*: Self-Ballasted Lamps and Lamp Adapters*
Model Number	*: ELS-MGU2415、ELS-MGU2418、ELS-MGU2423、ELS-MGU2424 (26)*
Model Tested	*: ELS-MGU2424 (26)*
Date Tested	*: January 20, 2009*
Applicant	*: FOSHAN ELECTRICAL AND LIGHTING CO.,LTD*
	15 North Fenjiang Road, Foshan, Guangdong,China.
Telephone	*: 86-757-82966159*
Fax	*: 86-757-82961013*

EUT Description

FOSHAN ELECTRICAL AND LIGHTING CO.,LTD model tested ELS-MGU2424 (26) (referred to as the EUT in this report) is a Self-Ballasted Lamps and Lamp Adapters.

Type of Derive

Details Please refer to differences statement letter.

Note :

Model of ELS-MGU2415、ELS-MGU2418、ELS-MGU2423、ELS-MGU2424（26）are series products,They are the same products except for appearance and power, for example they have the same circuit function and PCB.

The worst product is model ELS-MGU2424（26）,so it is used for all test.

Test Summary

The Electromagnetic Compatibility requirements on model ELS-MGU2424 (26) for this test are stated below. All results listed in this report relate exclusively to this above-mentioned model as the Equipment Under Test. This report confers no approval or endorsement upon any other component, host or subsystem used in the test set-up.

Emission Tests				
Specifications	***Description***	***Test Results***	***Test Point***	***Remark***
FCC Part 18.307 FCC/OST MP-5	*Conducted Emission*	*Passed*	*AC Input Port*	*Attachment 1*
FCC Part 18.305 FCC/OST MP-5	*Radiated Emission*	*Passed*	*Enclosure*	*Attachment 2*

Test Mode Justification

This device complies with Part 18 of the FCC rules. The EUT was tested in the lighting mode.

EUT Exercise Software

This device is not programmable and does not software.

Equipment Modification

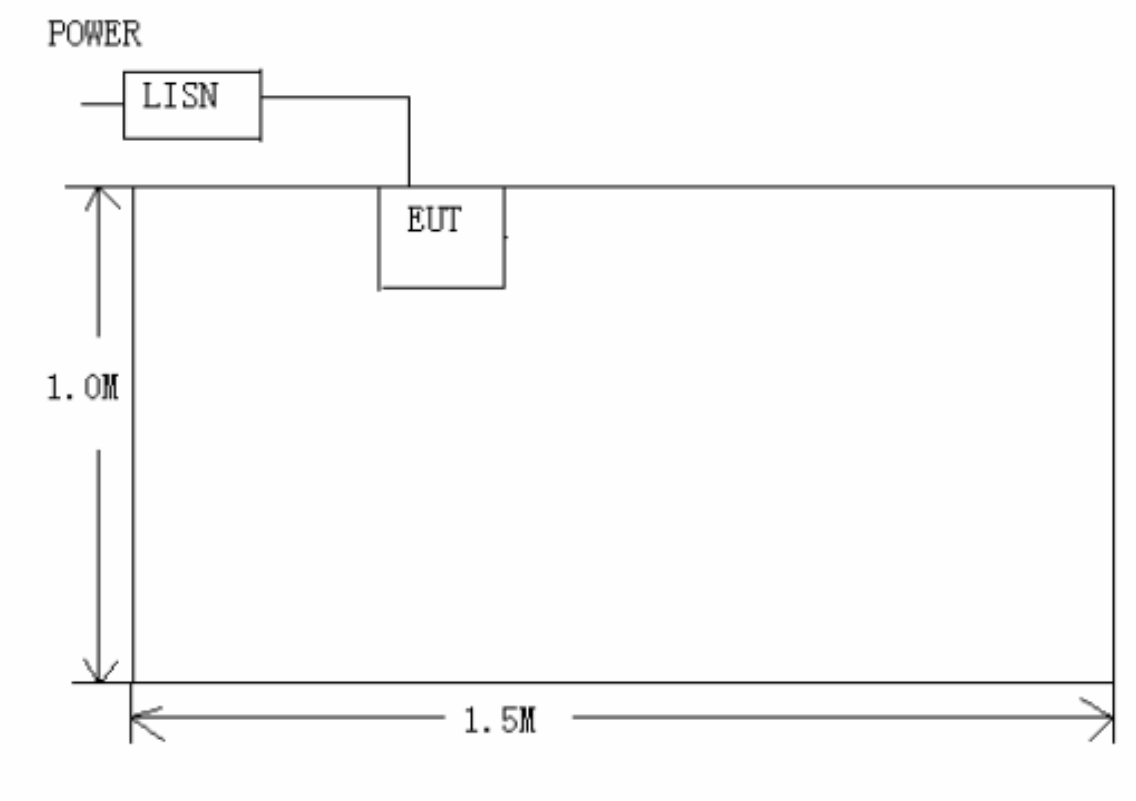
Any modifications installed previous to testing by FOSHAN ELECTRICAL AND LIGHTING CO.,LTD will be incorporated in each production model sold or leased in United States.

There were no modifications installed by ECMG Worldwide Certification Solution Inc. (China) test personnel.

Test System Details

EUT					
Model Number:	ELS-MGU2415、ELS-MGU2418、ELS-MGU2423、ELS-MGU2424 (26)				
Model Tested:	ELS-MGU2424 (26)				
Input Voltage:	120VAC/60Hz				
Description:	Self-Ballasted Lamps and Lamp Adapters				
Manufacture:	FOSHAN ELECTRICAL AND LIGHTING CO.,LTD				
Support Equipment					
Description	**Model Number**		**Serial Number**		**Manufacturer**
None					
Cable Description					
Description	**From**	**To**	**Length (Meters)**	**Shielded (Y/N)**	**Ferrite (Y/N)**
None					

Configuration of Tested System

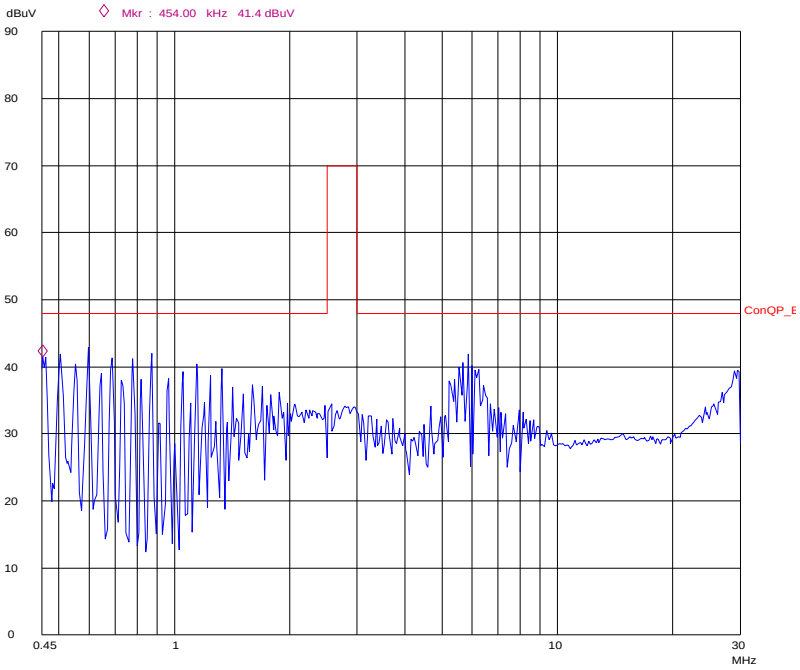


ATTACHMENT 1 - CONDUCTED EMISSION TEST RESULTS

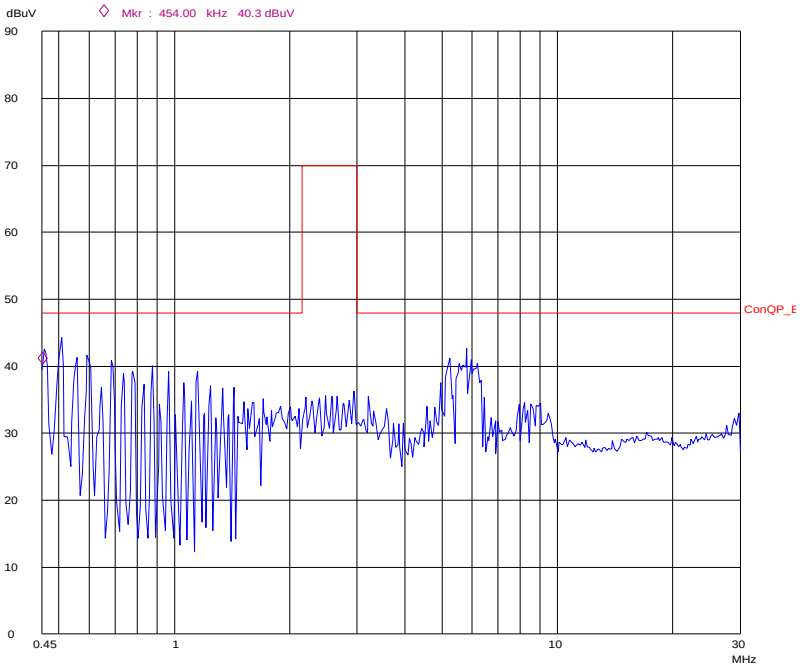
CLIENT:	FOSHAN ELECTRICAL AND LIGHTING CO.,LTD	**TEST STANDERD:**	FCC Part 18: 2007
MODEL NUMBERS:	ELS-MGU2415、ELS-MGU2418、ELS-MGU2423、ELS-MGU2424 (26)	**PRODUCT:**	Self-Ballasted Lamps and Lamp Adapters
EUT MODEL:	ELS-MGU2424 (26)	**EUT DESIGNATION:**	Lighting Equipment
TEMPERATURE:	23°C	**HUMIDITY:**	47%RH
ATM PRESSURE:	101.0kPa	**GROUNDING:**	None
TESTED BY:	May Wang	**DATE OF TEST:**	January 20, 2009
TEST REFERENCE:	FCC/OST MP-5 (1986)		
TEST PROCEDURE:	a.The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface. b.Connect EUT to the power mains through a line impedance stabilization network (LISN) . c.The LISN provides 50ohm coupling impedance for the measuring instrument. d. Both sides of AC line were checked for maximum conduced interference. e. The frequency range from 150KHz to 30MHz was searched.. f. Set the test-receiver system to Peak Detect Function and Specified bandwidth. g. If the emission level of the EUT in peak mode was 20 dB lower than the specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be tested using the quasi-peak method in about six maximal points and the results will be reported.		
TESTED RANGE:	450kHz to 30MHz		
TEST VOLTAGE:	120VAC / 60Hz		
RESULTS:	**For Model: ELS-MGU2424 (26)** According to the recorded data in following data table, the EUT complied with the FCC Part 18: 2007, with the worst margin reading of: **-9.8 dB** at **0.596 MHz** in the **Line** conductor mode. The test results relate only to the equipment under test provided by client.		
CHANGES OR MODIFICATIONS:	There were no modifications installed by ECMG Worldwide Certification Solution Inc. (China) test personnel.		
M. UNCERTAINTY:	Freq. ± 2x10-7 x Center Freq., Amp ± 2.6 dB		

18.307 Conducted limit:

Frequency of Emission (MHz)	*Consumer Equipment*	
	Maximum RF line voltage measured with a 50 uH/50 ohm LISN (uV)	*Quasi-Peak (dBuV)*
0.45-2.51	*250*	*48*
2.51-3.0	*3000*	*70*
3.0-30	*250*	*48*
Note :Emission Level dB (μ V) = 20 log Emission Level (μ V)		



Line L Conducted Emission Graph



Line N Conducted Emission Graph

Test Data :

Line	Frequency (MHz)	Corrected QP Level (dBuV)	Limits QP (dBuV)	Margin QP (dB)	Frequency (MHz)	Corrected AV Level (dBuV)	Limits AV (dBuV)	Margin QP (dB)
L	0.596	38.2	48.0	-9.8	/	/	/	/
L	0.780	31.9	48.0	-16.1	/	/	/	/
L	0.872	27.0	48.0	-21.0	/	/	/	/
N	0.508	37.6	48.0	-10.4	/	/	/	/
N	5.245	32.7	48.0	-15.3	/	/	/	/
N	5.795	31.2	48.0	-16.8	/	/	/	/

1) All readings are using a bandwidth of 9 kHz, with a 30 ms sweep time. A video filter was not used.

2) "QP" means "Quasi-Peak" values, "AV" means "Average" values.

Test Equipment List :

Test Equipment	Model No.	Manufacturer	Serial No.	Last Cal.	Cal. Interval
EMI test receiver	ESCS30	R&S	830245/009	01/22/2008	01/21/2009
AMN	ESH2-Z5	R&S	100002	01/22/2008	01/21/2009

Note: All testing were performed using internationally recognized standards. All test instruments were calibrated.

SIGNED BY: _____ ***REVIEWED BY:*** _____

ENGINEER ***SENIOR ENGINEER***

For Model: ELS-MGU2424 (26)

Conducted Emissions Test Set-up

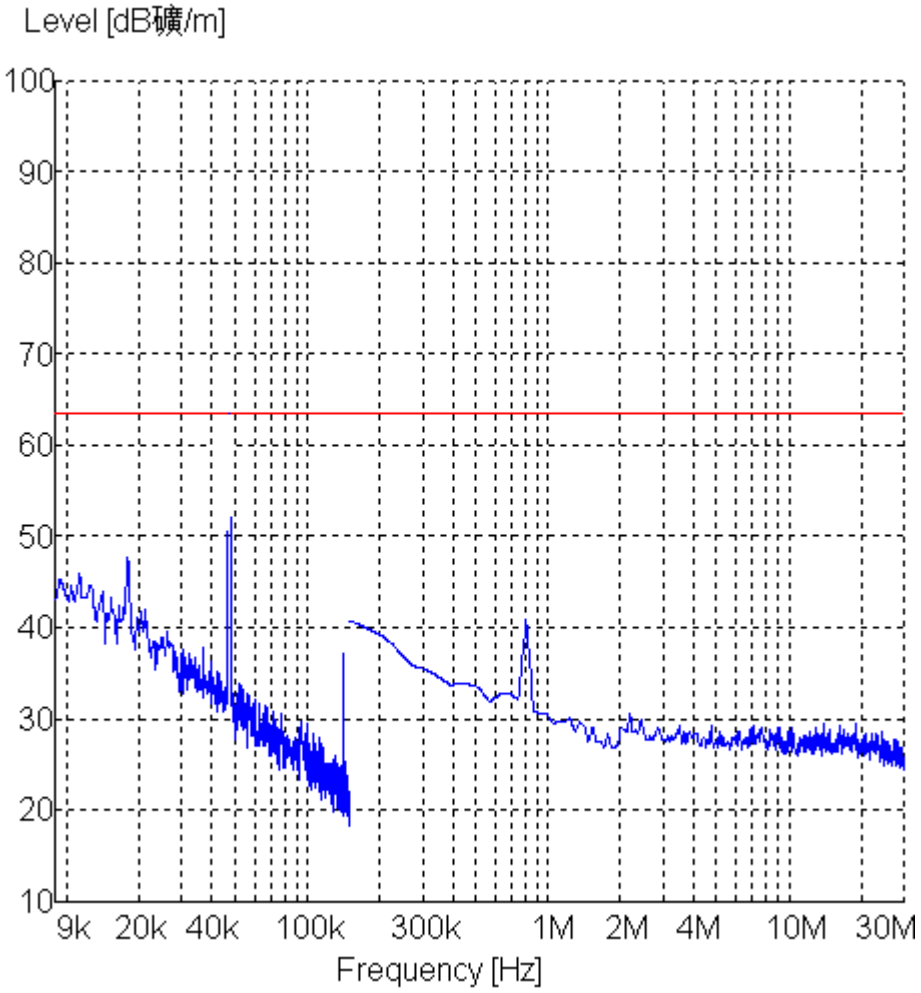
ATTACHMENT 2 - RADIATED EMISSION TEST RESULTS

CLIENT:	FOSHAN ELECTRICAL AND LIGHTING CO.,LTD	**TEST STANDERD:**	FCC Part 18:2007
MODEL NUMBERS:	ELS-MGU2415、ELS-MGU2418、ELS-MGU2423、ELS-MGU2424 (26)	**PRODUCT:**	Self-Ballasted Lamps and Lamp Adapters
EUT MODEL:	ELS-MGU2424 (26)	**EUT DESIGNATION:**	Lighting Equipment
TEMPERATURE:	23°C	**HUMIDITY:**	47%RH
ATM PRESSURE:	101.0kPa	**GROUNDING:**	None
TESTED BY:	May Wang	**DATE OF TEST:**	January 20, 2009
TEST REFERENCE:	FCC/OST MP-5 (1986)		
TEST PROCEDURE:	a. The EUT was placed on a rotatable table with 1.0 meters above ground. b. The EUT was set 3 meters from the interference-receiving antenna, which was mounted on the top of a variable height antenna tower. c. For each suspected emission the EUT was arranged to its worst case and turn table (from 0 degree to 360 degree) to find the maximum reading. d. If the emission level of the EUT in peak mode was 20 dB lower than the specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be tested using the quasi-peak method in about six maximal points and the results will be reported. Explanation of the Correction Factor are given as follows: FS= RA + AF + CF - AG Where: FS = Field Strength RA = Receiver Amplitude AF = Antenna Factor CF = Cable Attenuation Factor AG = Amplifier Gain		
TESTED RANGE:	0.009MHz to 30MHz		
TEST VOLTAGE:	120VAC / 60Hz		
RESULTS:	**For Model: ELS-MGU2424 (26)** According to the recorded data in following data table, the EUT complied with the FCC Part 18:2007, with the worst margin reading of: **-14.8 dB** at **0.525 MHz**. The test results relate only to the equipment under test provided by client.		
CHANGES OR MODIFICATIONS:	There were no modifications installed by ECMG Worldwide Certification Solution Inc. (China) test personnel.		
M. UNCERTAINTY:	Freq. ± 2x10-7 x Center Freq., Amp ± 2.6 dB		

15.109 Limits of Radiated Emission :

The field strength of radiated emissions at a distance of 3.0 meters shall not exceed the following values:

Frequency of Emission (MHz)	*Field Strength (dBμV/m)*
0.009-30	*63.5*
Note : Emission Level dB (μ V/m) = 20 log Emission Level (μ V/m)	



Field Strength Emission Plots(Peak,Max hold mode)

Test Data :

Signal	Frequency [MHz]	Corrected Reading [dBμV/m]	Delta, QP [dB]	3 Meters Limits [dBμV/m]
0.009MHz-0.15MHz				
1	0.0180	45.6	-17.9	63.5
2	0.0230	42.1	-21.4	63.5
3	0.0580	47.9	-15.6	63.5
0.15MHz-30MHz				
1	0.525	14.8	-22.8	63.5
2	1.825	38.1	-25.4	63.5
3	2.901	28.3	-35.2	63.5

1) All reading are quasi-peak unless stated otherwise,using a QPA bandwidth of 200Hz at 0.009 to 0.15MHz,with a 30ms sweep time,A video is not used.

2) All reading are quasi-peak unless stated otherwise,using a QPA bandwidth of 9kHz at 0.15 to 30MHz,with a 30ms sweep time,A video is not used.

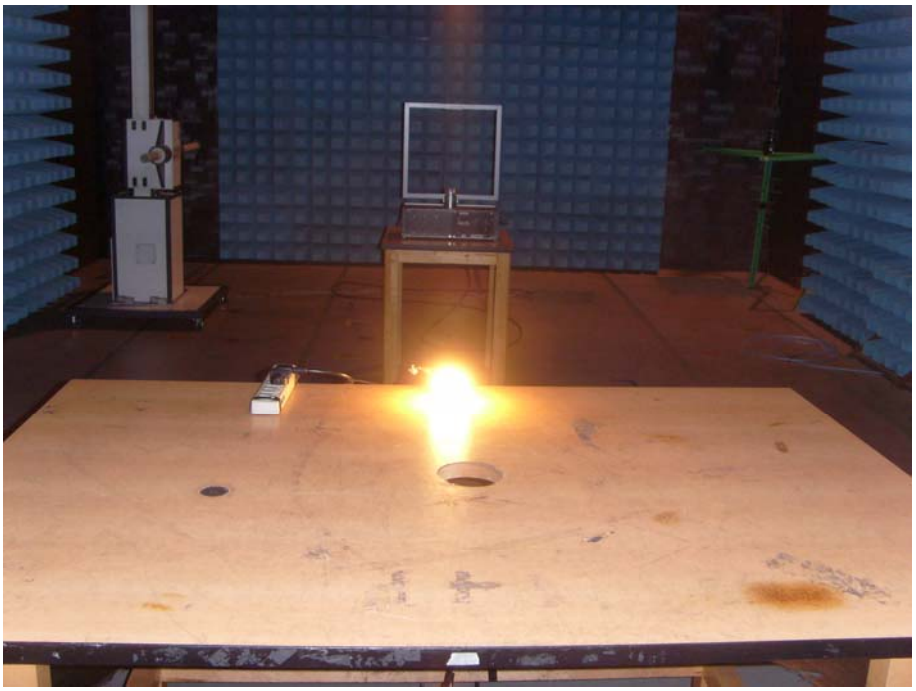
Test Equipment List :

Test Equipment	Model No.	Manufacturer	Serial No.	Last Cal.	Cal. Due
EMI Test Receiver	ESI26	R&S	838736/013	2008/01/25	2009/01/24
Triple Loop Antenna	HXYZ9170	Schwarzbeck	SB2662	2008/01/25	2009/01/24
3m SEMI-ANECHOIC CHAMBER	9X6X6	Albatross projects	---	2008/03/21	2009/03/20
Note: All testing were performed using internationally recognized standards. All test instruments were calibrated.					

SIGNED BY: _____ ***REVIEWED BY:*** _____

ENGINEER ***SENIOR ENGINEER***

For Model: ELS-MGU2424 (26)



Test Set up Photo