

## **TITLE 24 REPORT**

### **Title 24 Report for:**

Robert Cabral Station  
Security Kiosk  
STOCKTON, CA

### **Project Designer:**

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### **Report Prepared By:**

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### **Job Number:**

1681a

### **Date:**

7/27/2009

The EnergyPro computer program has been used to perform the calculations summarized in this compliance report. This program has approval and is authorized by the California Energy Commission for use with both the Residential and Nonresidential 2005 Building Energy Efficiency Standards.

This program developed by EnergySoft, LLC - [www.energysoft.com](http://www.energysoft.com).

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# CERTIFICATE OF COMPLIANCE

(Part 1 of 4)

**LTG-1-C**

<b>PROJECT NAME</b> Robert Cabral Station		<b>DATE</b> 7/27/2009
<b>PROJECT ADDRESS</b> Security Kiosk STOCKTON		Building Permit #  
<b>PRINCIPAL DESIGNER - LIGHTING</b>	<b>TELEPHONE</b>	
<b>DOCUMENTATION AUTHOR</b> Sacramento Design Group		Checked by/Date Enforcement Agency Use

## GENERAL INFORMATION

<b>DATE OF PLANS</b> 20 May 09	<b>BUILDING CONDITIONED FLOOR AREA</b> 0 Sq.Ft.	<b>CLIMATE ZONE</b> 12		
<b>BUILDING TYPE</b>	<input checked="" type="checkbox"/> NONRESIDENTIAL	<input type="checkbox"/> HIGH RISE RESIDENTIAL	<input type="checkbox"/> HOTEL/MOTEL GUEST ROOM	
	<input type="checkbox"/> CONDITIONED SPACES	<input checked="" type="checkbox"/> UNCONDITIONED SPACES	<input type="checkbox"/> INDOOR & OUTDOOR SIGNS	
<b>PHASE OF CONSTRUCTION</b>	<input checked="" type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> ADDITION	<input type="checkbox"/> ALTERATION	
<b>METHOD OF LIGHTING COMPLIANCE</b>	<input type="checkbox"/> COMPLETE BUILDING	<input type="checkbox"/> AREA CATEGORY	<input type="checkbox"/> TAILORED	<input type="checkbox"/> PERFORMANCE
	<input type="checkbox"/> COMMON LIGHTING			

## STATEMENT OF COMPLIANCE

This Certificate of Compliance lists the building features and performance specifications needed to comply with Title 24, Parts 1 and 6 of the California Code of Regulations. This certificate applies only to building lighting requirements. The documentation preparer hereby certifies that the documentation is accurate and complete.

DOCUMENTATION AUTHOR	SIGNATURE	DATE
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The Principal Lighting Designer hereby certifies that the proposed building design represented in this set of construction documents is consistent with the other compliance forms and worksheets, with the specifications, and with any other calculations submitted with this permit application. The proposed building has been designed to meet the lighting requirements contained in Sections 110, 119, 130 - 132, 146, 148 & 149 of Title 24, Part 6.

- The plans & specifications meet the requirements of Part 6 (Sections 10-103a).
- The installation certificates meet the requirements of Part 6 (10-103a 3).
- The operation & maintenance information meet the requirements of Part 6 (10-103c).

Please Check One: (These sections of the Business and Professions Code are printed in full in the Nonresidential Manual.)

- I hereby affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code to sign this document as the person responsible for its preparation; and that I am licensed in the State of California as a civil engineer or electrical engineer, or I am a licensed architect.
- I affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code by Section 5537.2 or 6737.3 to sign this document as the person responsible for its preparation; and that I am a licensed contractor performing this work.
- I affirm that I am eligible under the exemption to Division 3 of the Business and Professions Code to sign this document because it pertains to a structure or type of work described as exempt pursuant to Business and Professions Code Sections 5537, 5538 and 6737.1.

PRINCIPAL LIGHTING DESIGNER - NAME	SIGNATURE	DATE	LIC. #
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## LIGHTING MANDATORY MEASURES

Indicate location on plans of Note Block for Mandatory Measures

## LIGHTING COMPLIANCE FORMS & WORKSHEETS (Check box if worksheet is included)

- LTG-1-C, Parts 1 of 4 and 2 of 4: Certificate of Compliance. Part 1 of 4 and 2 of 4 are required for all submittals
- LTG-1-C, Part 3 of 4: Certificate of Compliance. Part 3 of 4 submittal is required only if Control Credits are claimed
- LTG-1-C, Part 4 of 4: Certificate of Compliance. Part 4 of 4 submittal is required when lighting controls are installed
- LTG-2-C: Indoor Lighting Schedule
- LTG-3-C: Portable Lighting Worksheet
- LTG-4-C: Lighting Controls Credit Worksheet
- LTG-5-C: Indoor Lighting Power Allowance
- LTG-6-C: Tailored Method Worksheet
- LTG-7-C: Room Cavity Ratio Worksheet
- LTG-8-C: Common Lighting Systems Method Worksheet
- LTG-9-C: Line Voltage Track Lighting Worksheet

# CERTIFICATE OF COMPLIANCE (Part 2 of 4) **LTG-1-C**

PROJECT NAME <b>Robert Cabral Station</b>	DATE <b>7/27/2009</b>
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## INSTALLED INDOOR LIGHTING POWER FOR CONDITIONED AND UNCONDITIONED SPACES

	INSTALLED WATTS
INSTALLED LIGHTING, CONDITIONED SPACES (From LTG-2-C)	0
PORTABLE LIGHTING (From LTG-3-C)	0
LIGHTING CONTROL CREDIT, CONDITIONED SPACES (From LTG-4-C)	0
CONDITIONED SPACE ADJUSTED INSTALLED LIGHTING POWER	0
INSTALLED LIGHTING, UNCONDITIONED SPACES (From LTG-2-C)	150
LIGHTING CONTROL CREDIT, UNCONDITIONED SPACES (From LTG-4-C)	15
UNCONDITIONED SPACE ADJUSTED INSTALLED LIGHTING POWER	135

ALLOWED INDOOR LIGHTING POWER FOR CONDITIONED SPACES

<input type="checkbox"/> COMPLETE BUILDING METHOD (From LTG-5-C)		<b>ALLOWED WATTS</b>
<input type="checkbox"/> AREA CATEGORY METHOD (From LTG-5-C)		
<input type="checkbox"/> TAILORED METHOD (From LTG-5-C)		
ALLOWED LIGHTING POWER	0	

## ALTERNATE COMPLIANCE

- PERFORMANCE METHOD
- COMMON LIGHTING SYSTEM (From LTG-8-C)

<b>ALLOWED INDOOR LIGHTING POWER FOR UNCONDITIONED SPACES (From LTG-5-C)</b>	308
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## MANDATORY INDOOR AND DAYLIGHTING AUTOMATIC CONTROLS

CONTROL LOCATION (Room #)	CONTROL IDENTIFICATION	CONTROL TYPE (Auto Time Switch, Dimming, etc.)	SPACE CONTROLLED	Check if Daylighting	NOTE TO FIELD

## NOTES TO FIELD - For Building Department Use Only



# CERTIFICATE OF COMPLIANCE

(Part 4 of 4) **LTG-1-C**

PROJECT NAME

Robert Cabral Station

DATE

7/27/2009

## Designer:

This form is to be used by the designer and attached to the plans. Listed below are all the acceptance tests for lighting systems. The designer is required to check the boxes by all acceptance tests that apply and list all equipment that require an acceptance test. If all equipment of a certain type requires a test, list the equipment description and the number of systems to be tested in parentheses. The NJ number designates the Section in the Appendix of the Nonresidential ACM Manual that describes the test. Also indicate the person responsible for performing the tests (i.e. the installing contractor, design professional or an agent selected by the owner). Since this form will be part of the plans, completion of this section will allow the responsible party to budget for the scope of work appropriately.

## Building Departments:

Before an occupancy permit is granted for a newly constructed building or space, or a new lighting system serving a building or space is operated for normal use, all control devices serving the building or space shall be certified as meeting the Acceptance Requirements for Code Compliance. In addition a Certificate of Acceptance, LTG-1-A, Forms shall be submitted to the building department that:

A. Certifies plans, specifications, installation certificates, and operating and maintenance information meet the requirements of § 10-103(b) and Title 24 Part 6.

Test Description	Test Performed By:
<input type="checkbox"/> LTG-2-A: Lighting Control Acceptance Document - Occupancy Sensor Acceptance - Manual Daylight Controls Acceptance - Automatic Time Switch Control Acceptance Equipment requiring acceptance testing _____ _____	
<input type="checkbox"/> LTG-3-A: Automatic Daylighting Controls Acceptance Document Equipment requiring acceptance testing _____ _____	
_____	
_____	
_____	

# INDOOR LIGHTING SCHEDULE

(Part 2 of 2)

**LTG-2-C**

**PROJECT NAME**

Robert Cabral Station

**DATE**

7/27/2009

## INSTALLED LIGHTING POWER FOR UNCONDITIONED SPACES

Luminaire		Lamps/Ballasts				Installed Watts					
Name	Type Description	C	D	E	F	G	H		I	J	
		Lamp Type	Number of Lamps per Luminaire	Watts per Lamp	Number of Ballast per Luminaire	Watts per Luminaire	CEC Default?	Yes	No	Number of Luminaires	Installed Watts (G x I)
	150w Surface Mount Incandescent	150W	1	150		150.0	X			1	150

PAGE TOTAL	150
BUILDING TOTAL (sum of all pages)	150
CONTROL CREDIT (From LTG-4-C)	15
ADJUSTED ACTUAL WATTS	135

# PORTABLE LIGHTING WORKSHEET

**LTG-3-C**

PROJECT NAME Robert Cabral Station	DATE 7/27/2009
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**TABLE 1 - PORTABLE LIGHTING NOT SHOWN ON PLANS FOR OFFICE AREAS >250 SQUARE FEET**

A	B	C	D
ROOM # OR ZONE ID	DEFAULT (W/sqft)	AREA (SF)	TOTAL WATTS (B X C)
TOTAL		0	0

**TABLE 2 - PORTABLE LIGHTING SHOWN ON PLANS FOR OFFICE AREAS >250 SQUARE FEET**

A	B		C	D	E	F	G
ROOM # OR ZONE ID	PORTABLE LIGHTING Description	# OF FIXT.	LUMIN. WATTS PER FIXTURE	TASK AREA (SF)	# OF TASK AREAS	TOTAL AREA (SF) (D x E)	TOTAL WATTS (C x E)
TOTAL						0	0

**TABLE 3 - PLANS SHOW PORTABLE LIGHTING IS NOT REQUIRED FOR OFFICE AREAS > 250 SQUARE FEET**

ROOM # OR ZONE ID	TOTAL AREA (SF)	
TOTAL		0

Designer needs to provide detailed documentation that the lighting level provided by the overhead lighting meets the needs of the space. The details include luminaire types and mounting locations relative to work areas.

**BUILDING SUMMARY - PORTABLE LIGHTING**

BUILDING SUMMARY	TOTAL AREA (SF) (FROM TABLES 1+2+3)	TOTAL WATTS
BUILDING TOTAL	0	0



# LIGHTING CONTROLS CREDIT WORKSHEET (Part 2 of 2) LTG-4-C

## CONTROL CREDITS FOR UNCONDITIONED SPACES

PROJECT NAME: Robert Cabral Station DATE: 7/27/2009

A ROOM # ZONE ID CONDITIONED AREAS	B LIGHTING CONTROL DESCRIPTION	C PLAN REF.	D ROOM AREA (SF)	EIGHTH DAYLIGHTING			H WATTS OF CONTROL LIGHTING	I LIGHTING ADJUST. FACTOR <sup>2</sup>	J CONTROL CREDIT WATTS (H X I)
				E WINDOW WALL RATIO	F GLAZING VLT	G SKYLIGHT EFFECTIVE APERTURE <sup>1</sup>			
Stockton Cabral Station Kiosk	Window Daylighting - 10%		257				150	0.10	15

PAGE TOTAL 15

BUILDING TOTAL 15

1) From Equation 146-A  
2) From Table 146-A

Enter in LTG-2-C: Lighting Control Credit

# INDOOR LIGHTING POWER ALLOWANCE

LTG-5-C

PROJECT NAME Robert Cabral Station	DATE 7/27/2009
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**ALLOWED LIGHTING POWER (Choose One Method)**

**COMPLETE BUILDING METHOD - CONDITIONED SPACES**

BUILDING CATEGORY (From Section 146 Table 146-B)	WATTS PER SF	COMPLETE BLDG. AREA	ALLOWED WATTS

**AREA CATEGORY METHOD - CONDITIONED SPACES**

AREA CATEGORY (From Section 146 Table 146-C)	WATTS PER SF	AREA (SF)	ALLOWED WATTS

PAGE TOTAL      0      0

BUILDING TOTAL      0      0  
                                    AREA      WATTS

**TAILORED METHOD - CONDITIONED SPACES**

TOTAL ALLOWED WATTS (From LTG-6-C or from computer run.)      0

**UNCONDITIONED SPACES**

Complete Building and Area Category Methods Category (From Section 146 Table 146-B&C)	WATTS PER SF	AREA (SF)	ALLOWED WATTS
Office	1.20	257	308

PAGE TOTAL      257      308

BUILDING TOTAL      257      308  
                                    AREA      WATTS

**TAILORED METHOD - UNCONDITIONED SPACES**

TOTAL UNCONDITIONED SPACES ALLOWED WATTS (From LTG-5-C and LTG-6-C)      0

# ROOM CAVITY RATIO WORKSHEET (RCR ≥ 3.5)

LTG-7-C

PROJECT NAME Robert Cabral Station	<b>FOR ENFORCEMENT AGENCY USE ONLY</b>	
DOCUMENTATION AUTHOR	DATE 7/27/2009	PLAN CHECK BY _____ DATE _____

### RECTANGULAR SPACES

A	B	C	D	E	F
Room Name	Task/Activity Description	Room Length (L) (ft)	Room Width (W) (ft)	Room Cavity Height (H) (ft)	Room Cav. Ratio $5 \times H \times (L + W) / (L \times W)$

### NON-RECTANGULAR SPACES

A	B	C	D	E	F
Room Name	Task/Activity Description	Room Area (A) (sf)	Room Perimeter (P) (ft)	Room Cavity Height (H) (ft)	Room Cav. Ratio $2.5 \times H \times P / A$

# CERTIFICATE OF COMPLIANCE

(Part 1 of 2) **OLTG-1-C**

<b>PROJECT NAME</b> Robert Cabral Station		<b>DATE</b> 7/27/2009
<b>PROJECT ADDRESS</b> Security Kiosk STOCKTON		Building Permit #  
<b>PRINCIPAL DESIGNER - LIGHTING</b>	<b>TELEPHONE</b>	
<b>DOCUMENTATION AUTHOR</b> Sacramento Design Group		<b>TELEPHONE</b> (877) 581-0866

## GENERAL INFORMATION

<b>DATE OF PLANS</b> 20 May 09	<b>OUTDOOR LIGHTING ZONE</b> <input type="checkbox"/> LZ1 <input type="checkbox"/> LZ2 <input checked="" type="checkbox"/> LZ3 <input type="checkbox"/> LZ4
<b>FUNCTION TYPE</b>	<input checked="" type="checkbox"/> OUTDOOR LIGHTING <input type="checkbox"/> OUTDOOR SIGNS <input type="checkbox"/> INDOOR SIGNS
<b>PHASE OF CONSTRUCTION</b>	<input checked="" type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> ADDITION <input type="checkbox"/> ALTERATION

## STATEMENT OF COMPLIANCE

This Certificate of Compliance lists the outdoor lighting system specifications need to comply with Title 24, Parts 1 and 6 of the California Code of Regulations.

This certificate applies only to building lighting requirements.

The documentation preparer hereby certifies that the documentation is accurate and complete.

DOCUMENTATION AUTHOR	SIGNATURE	DATE
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The Principal Lighting Designer hereby certifies that the proposed outdoor lighting and signs design represented in this set of construction documents is consistent with the other compliance forms and worksheets, with the specifications, and with any other calculations submitted with this permit application. The proposed building has been designed to meet the lighting requirements contained in Sections 110, 119, 130 through 132, and 146, and 149 of Title 24, Part 6.

Please Check One: (These sections of the Business and Professions Code are printed in full in the Nonresidential Manual.)

- I hereby affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code to sign this document as the person responsible for its preparation; and that I am licensed in the State of California as a civil engineer or electrical engineer, or I am a licensed architect.
- I affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code by Section 5537.2 or 6737.3 to sign this document as the person responsible for its preparation; and that I am a licensed contractor performing this work.
- I affirm that I am eligible under the exemption to Division 3 of the Business and Professions Code to sign this document because it pertains to a structure or type of work described as exempt pursuant to Business and Professions Code Sections 5537, 5538 and 6737.1.

PRINCIPAL LIGHTING DESIGNER - NAME	SIGNATURE	DATE	LIC. #
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## LIGHTING COMPLIANCE FORMS & WORKSHEETS (Check box if worksheet is included)

- OLTG-1-C: Certificate of Compliance. Required on plans for all submittals for outdoor lighting. Part 2 of 2 may be incorporated in schedules on the plans.  
Either LTG-1-C or OLTG-1-C may be used for signs as follows:  
1. Use LTG-1-C if the project consists solely of indoor signs.  
2. Use LTG-1-C if the project consists of indoor lighting, outdoor or indoor signs, but no other outdoor lighting.  
3. Use OLTG-1-C if the project consists solely of outdoor signs.  
4. Use OLTG-1-C if the project consists of outdoor lighting, outdoor or indoor signs, but no other indoor lighting.
- OLTG-2-C: LIGHTING COMPLIANCE SUMMARY. Applicable parts required for ALL outdoor lighting allowances (Except Signs).
- OLTG-3-C: AREA CALCULATIONS WORKSHEET. Applicable parts required for all outdoor area calculations.
- OLTG-4-C: SIGN LIGHTING COMPLIANCE. Required for all internally and externally illuminated signs, for both indoor and outdoor signs.

# CERTIFICATE OF COMPLIANCE

(Part 2 of 2) **OLTG-1-C**

PROJECT NAME Robert Cabral Station	DATE 7/27/2009
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## Lighting Schedules on Plans Show that Outdoor Lighting Meets Allowed Lighting Power

<input type="checkbox"/>	Lighting power allowance for general site illumination on OLTG-2-C Part 1 of 4
<input checked="" type="checkbox"/>	Not Applicable
<input type="checkbox"/>	Lighting power allowance for local ordinances or for security multipliers on OLTG-2-C Part 2 of 4
<input checked="" type="checkbox"/>	Not Applicable
<input checked="" type="checkbox"/>	Lighting power allowances for specific applications, other than vehicle service stations with canopies on OLTG-2-C Part 3 of 4
<input type="checkbox"/>	Not Applicable
<input type="checkbox"/>	Lighting power allowances for vehicle service station canopies on OLTG-2-C part 4 of 4
<input checked="" type="checkbox"/>	Not Applicable
<input checked="" type="checkbox"/>	Sign lighting compliance on OLTG-4-C
<input type="checkbox"/>	Not Applicable

## Mandatory Measures on Plans Show that Outdoor Lighting Meets Outdoor Lighting Controls And Equipment

<input checked="" type="checkbox"/>	Installed lighting power has been determined in accordance with Section 130(c)1
<input type="checkbox"/>	Not Applicable
<input checked="" type="checkbox"/>	All permanently installed luminaires with lamps rated over 100 Watts either have a lamp efficacy of at least 60 lumens per Watt or are controlled by a motion sensor per Section 132(a)
<input type="checkbox"/>	Not Applicable
<input checked="" type="checkbox"/>	All Luminaires with lamps rated greater than 175 Watts in hardscape area, including parking lots, building entrances, canopies, and all outdoor sales areas meet the Cutoff Requirements of Section 132(b)
<input type="checkbox"/>	Not Applicable
<input checked="" type="checkbox"/>	All permanently installed outdoor lighting meets the control requirements of Section 132(c)1
<input type="checkbox"/>	Not Applicable
<input checked="" type="checkbox"/>	Building facades, parking lots, garages, canopies, and outdoor sales areas meet the Multi-Level Lighting Requirements of Section 132(c)
<input type="checkbox"/>	Not Applicable

## MANDATORY AUTOMATIC CONTROLS

CONTROL LOCATION (Room #)	CONTROL IDENTIFICATION	CONTROL TYPE (Auto Time Switch, Dimming, etc.)	AREA CONTROLLED	NOTE TO FIELD

# LIGHTING COMPLIANCE SUMMARY

(Part 3 of 4) **OLTG-2-C**

Project Name

Robert Cabral Station

Date

7/27/2009

## LIGHTING POWER ALLOWANCE FOR SPECIFIC APPLICATIONS (Table 147-B) - Other than Vehicle Station without Canopies

A	Allotted Watts			E	Luminaire	G	Lamps/Ballasts			Design Watts					P
	B	C	D		F		H	I	J	K	L	M	N	O	
Lighting Application Category (Table 147-B)	Length (LF)	Area (sq. ft.)	Allotted LPD W/ft. sq. or W/LF	Allotted Watts (B x C)	Description	Cutoff Designation	Lamp Type	Lamps per Luminaire	Watts per Lamp	Ballast per Luminaire	Watts per Luminaire	If CEC Default	Number of Luminaires (L x N)	Installed Watts (L x N)	Allowed Watts (Min of D or O)
Ext Task	750	0.80	600	C	BRONZELITE 175 W		C	1	175	1.0	175.0	X	3	525	525

# ILLUMINATED AREA CALCULATION WORKSHEET (Part 5 of 5) OLTG-3-C

PROJECT NAME Robert Cabral Station	DATE 7/27/2009
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## A. Drive Up Windows

A	B	C
Width of Window plus 6 feet (LF)	Smaller of 30 feet or distance to the edge of the property line (LF)	Area (sf) (A x B)

**Checklist** Enter each Area in OLTG-2-C (Part 3 of 4) in Column B to calculate allotted watts.

- Section 147 (c)1 B - Each portion of all illuminated areas has been assigned only one lighting application, and the applications are consistent with actual use of the areas.
- Section 147 (c)1 G - Drive up window area includes only illuminated area that is the product of the width of the window plus six feet, and a distance of up to 30 feet outward from the window (not going beyond property lines).

## B. Guarded Facility

A	B	C	D
Area of Guardhouse Interior (SF)	Smaller of 80 ft or distance to the edge of the property line. (LF)	Entrance Area (SF) (B x 25 ft)	Area (sf) (A + B)
0	30	750	750

**Checklist**

- Section 147 (c)1 B - Each portion of all illuminated areas has been assigned only one lighting application, and the applications are consistent with the actual use of the areas.
- Section 147 (c)2 H - The area of guarded facilities includes illuminated areas that include the guardhouse interior area plus the product of the entrance width of 25 feet and length of up to 80 feet (not going beyond the property line).

# LIGHTING INSPECTION CHECKLIST

LTG-I

PROJECT NAME  
Robert Cabral Station

INSPECTION DATE  
7/27/2009

FIXTURE CODE	TYPE	DESCRIPTION	LAMP TYPE	LAMP QUANT.	NUMBER OF FIXTURES	WATTS PER FIXTURE	FIELD NOTES

Type	DESCRIPTION
MH	METAL HALIDE
INC	INCANDESCENT
INC/LV	INCANDESCENT LOW VOLTAGE
CFL	COMPACT FLUORESCENT
FL	FLUORESCENT
O	OTHER