LAMP REFERENCES

COLOR TEMPERATURE – Each light source has a unique color temperature that sets the appearance for the environment in which it is used. The actual color of the light that is given off from the source is represented in Kelvin and referred to as Correlated Color Temperature (CCT). A lamp can have a warm, midrange or cool appearance depending on its color temperature. These different color temperatures can set a mood, create an environment, improve a person's disposition, influence a person's buying habits and has even been known to affect a person's appetite.

"Warm" light sources have a lower color temperature, usually in the 2500K-3000K range. These lamps produce more light in the red/orange/yellow spectrum. As the color temperature of a lamp increases the lamps appearance becomes "cooler." As the lamp's color temperature increases so does the amount of light produced in the blue end of the spectrum. USHIO America, Inc. offers lamps in a wide variety of color temperatures to suit the needs of most users and to create the best environment possible.

Color Temperature	Common Color Description	Typical Applications
2700K - 3400K	Warm; Warm White	Specialty Retailers, Restaurants, Hotel Lobbies, Residential
3500K	Neutral; Neutral White	Grocery Stores & Produce Markets, Retail Stores, Bank Lobbies
4100K	Cool; Cool White	Offices, Manufacturing, Schools, Hospitals
5000K - 6500K	Daylight; Daylight Plus; Full Spectrum	Printers, Paint Studios, Art Galleries, Car Dealerships

COLOR RENDERING INDEX – An object on display can take on many different appearances depending on the light source that is illuminating it. A lamp has the ability to render an object's colors differently dependent upon the color rendering index properties of the lamp. Color Rendering Index (CRI) is measured on a scale from 0 to 100. The higher the CRI value, the more natural the colors will appear. Objects displayed under lamps with high CRI (usually 80+ CRI) look more appealing to the eye. This is why merchandise in retail stores is predominately lit using high CRI light sources such as the Halogen PAR lamps.

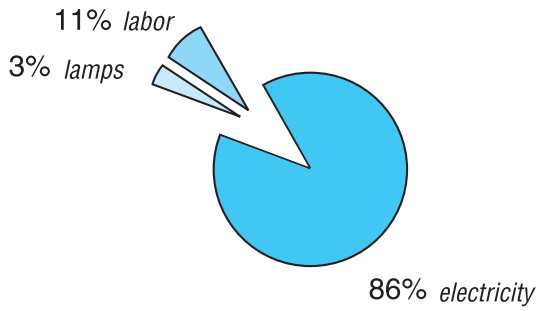
Applications	CRI Range	Color Rendering Properties
Art Galleries, Printing Companies	90–100	Excellent
Retail Stores	80–100	Very Good – Excellent
Restaurants	80–90	Good – Very Good
Grocery Stores, Hospitals	70–90	Good – Very Good
Banks, Car Dealerships, Classrooms, Offices, Manufacturing Areas, Security Lighting, Sporting Arenas	70–80	Good
Parking Lot Lighting, Roadway Lighting, Warehouses	<60–70	Poor

ENERGY SAVINGS – These days, energy in the form of electricity is by far the largest portion of a users lighting expense. Over the lifetime of a lighting system, the electricity to operate the system will represent about 86% of the total costs. Obviously, if a user can reduce their energy consumption, they will reduce their costs.

The annual cost of a lighting system can be broken down into three areas (see pie chart):

1. The initial purchase costs of the lamps (3%).
2. The cost of the electricity to operate the lamps (86%).
3. The costs of labor to replace the lamps (11%).

Ushio America, Inc. understands the need for energy efficient lighting products that produce nearly the same light output (lumens) as their conventional counterparts, but consume considerably less energy doing so.



LAMP REFERENCE

LAMP SPECIFICATION ABBREVIATIONS

RATINGS

W	Watts
V	Volts
kV	kiloVolts
A	Amps
h	hours
K	kelvin
lm	lumens
cd	candela
cp	candle power
nm	nanometers
CRI	Color Rendering Index

DIMENSIONS

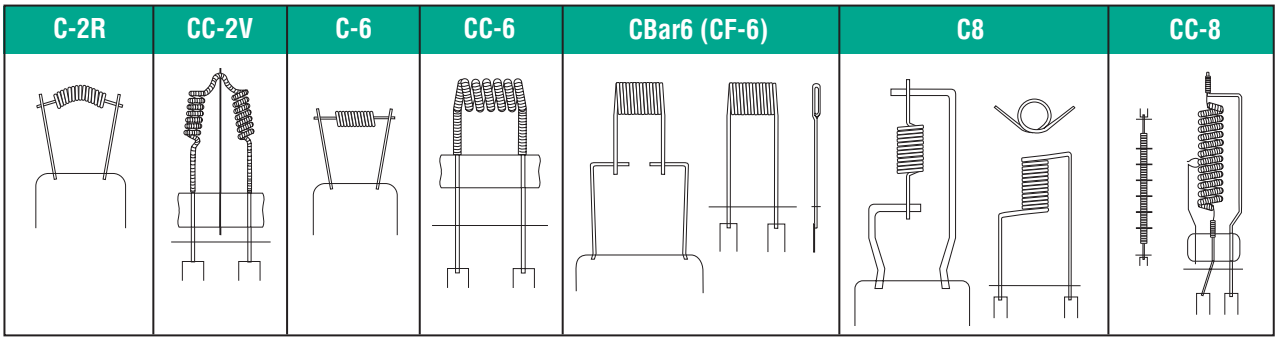
LL	Light Length (filament length)
LCL	Light Center Length
C-to-C	Contact to Contact
MOL	Maximum Overall Length
Dia	Diameter
max	Maximum
in	inches
mm	millimeters

All dimensions are approximate measurements in inches (in) unless otherwise noted.

BURN POSITION

BD	Base Down
BD/Hor	Base Down to Horizontal
BU	Base Up
Horiz	Horizontal
H±4	Within ±4° of horizontal position
H±45	Within ±45° of horizontal position
H±60	Within ±60° of horizontal position
Univ	Universal 360° / Any Position

LAMP FILAMENT TYPES



ANNUAL ENERGY COST CALCULATION WORKSHEET

For Fluorescent or PulseStrike™ Metal Halide lamps, be sure to use the total fixture wattage (which includes the new ballast wattage savings) to calculate your new true wattage savings.

Step 1. Calculate the total kilowatts saved by replacing the inefficient lamps with more efficient lamps

Original Lamp Wattage		*Replacement Lamp Wattage*		*Watts Saved per Lamp*		*# of Lamps to Replace*		*Total Watts Saved*			*Total Kilowatts Saved*
W	–	*W*	=	*W*	X	*lamps*	=	*W*	÷ 1000	=	*kW*

Step 2. Calculate the total kWh per year saved by this upgrade

Total Kilowatts Saved		*Hours Used per Day*		*Days Used per Week*		*Weeks Used per Year*		*Total kWh Saved per Year*
kW	X	*hrs/day*	X	*days/wk*	X	*wks/yr*	=	*kWh/yr*

Step 3. Calculate the total energy costs saved per year by this upgrade:

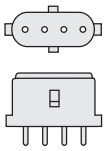
Total Kilowatts Saved per Year		*Your Energy Cost per kWh (typically $0.10)*		*Total Energy Cost Savings per Year*
kWh/yr	X	$	=	$

Step 4. Compute the payback of the upgrade:

Initial Cost of Lighting Upgrade		*Total Energy Cost Savings per Year*		*# of Years for Payback on Investment*
	÷		=	*years*

LAMP BASE TYPES

2G7



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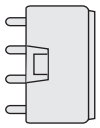

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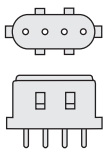

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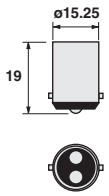

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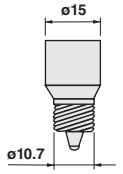

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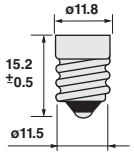

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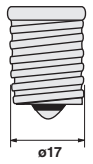

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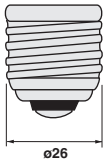

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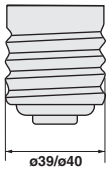

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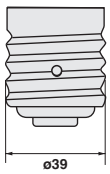

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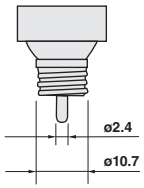

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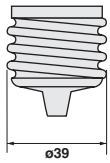

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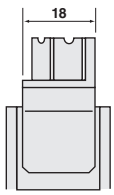

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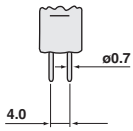

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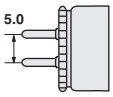

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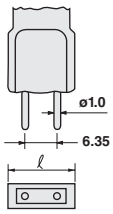

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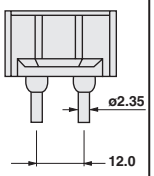

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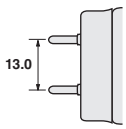

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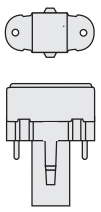

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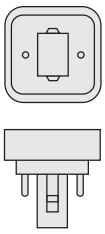

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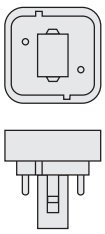

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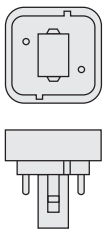

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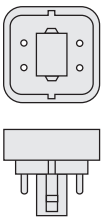

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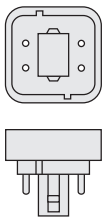

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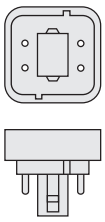

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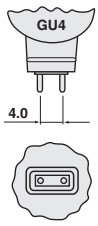

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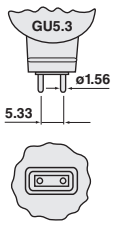

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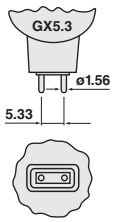

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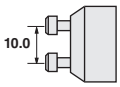

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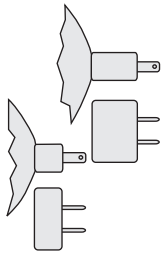

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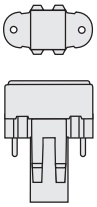

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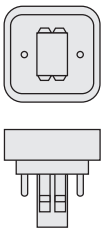

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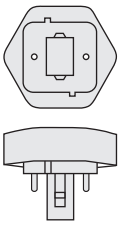

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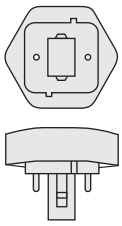

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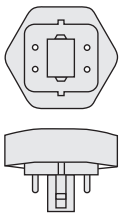

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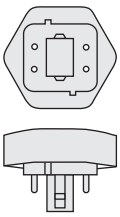

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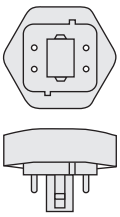

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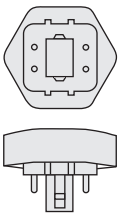

GY6.35

GZ4

GZ10

Pin Blade

R7s-12

RIGID LOOP

RX7s / RX7s-24

WEDGE

All dimensions are in millimeters (mm).

AUDIO/VISUAL & PHOTOGRAPHIC

ENTERTAINMENT

GRAPHIC ARTS

QUARTZ INFRARED HEATER

SCIENTIFIC-MEDICAL

UV / GERMICIDAL & BLACKLIGHT

RECYCLING MADE EASY!

Ushio America has partnered with Veolia to offer RECYCLEPAK lamp and ballast recycling kits through our website at recyclepak.ushio.com.