

To: California Energy Commission

Philips recognizes that the 15 day language stage is late in the regulatory development cycle to be making changes to the Title 24 proposed language and apologizes for this late submission.

Philips does hope however, that since our change proposal will allow systems with higher overall energy savings than what is currently in the 15 day language (and therefore will not adversely affect energy calculations) and follows a precedent that is already present in Title 20 requirements, the California Energy Commission will consider our request at this late stage.

Background

Metal halide systems optimized for the highest system efficacy and lumen maintenance can have dimming ranges that are limited compared to other metal halide light sources. Please see the specifications of the Philips CosmoPolis and Elite lamp systems.

The Philips CosmoPolis™ Outdoor Lighting System combines a revolutionary white light ceramic metal halide lamp and an optimized electronic ballast to maximize performance. These systems offer every advantage for lighting outdoor environments, including improved visibility, enhanced ambiance, long life and low power consumption. The CosmoPolis™ system can minimize environmental impact and reduce energy use by up to 50%.



Watts	60W, 90W, 140W
Approximate Initial Lumens¹	60W: 6,900 lumens 90W: 10,450 lumens 140W: 16,500 lumens
Rated Average Life²	60W: 30,000 hours 90W: 30,000 hours 140W: 30,000 hours
Dependable Service	At 12,000 hours the 60W CosmoWhite lamp has a 90% survival rate and more than 80% lumen maintenance

1. Measured at 100 hours life. Approximate lumen values listed are for horizontal operation of the lamp.
2. Rated average life is the life obtained, on the average, from large representative groups of lamps in laboratory tests under controlled conditions at 10 or more operating hours per start. It is based on survival of at least 50% of the lamps and allows for individual lamps or groups of lamps to vary considerably from the average. Stated lamp life is for lamps burned in the horizontal position. If burned in the vertical position, lamp life is 20,000 hours.

Watts	210W, 315W
Approximate Initial Lumens³	210W: 24,150 lumens 315W: 37,800 lumens
Rated Average Life⁴	30,000 hours
Dependable Service	At 12,000 hours the 315W Elite lamp has a 90% survival rate and more than 80% lumen maintenance

3. Measured at 100 hours life. Approximate lumen values listed are for horizontal operation of the lamp.
4. Rated average life is the life obtained, on the average, from large representative groups of lamps in laboratory tests under controlled conditions at 10 or more operating hours per start. It is based on survival of at least 50% of the lamps and allows for individual lamps or groups of lamps to vary considerably from the average. Lamp life does not vary by lamp position.



These systems have lamp/ballast **SYSTEM EFFICACIES** of **103-111 lm/watt** initial and 82-89 lm/watt at 12,000 hr (“mean”) yet are only specified for dimming to 50-60% rated power. Considering that a lamp/ballast system operating at 82-89 mean lumens per watt and 60% power uses considerably less energy than a more typical metal halide system operating in the 54-68 mean (lamp ballast system) lumens per watt range which is allowed 50% power during dimming

(9% - 27% less during dimming and 31% - 51% less during full on operation), we would like to see some allowance made for this type of product in Title 24 Section 130.1(c)7B.

SUGGESTED REPLACEMENTS					ANNUAL ENERGY SAVINGS (PER LUMINAIRE)	
TYPICAL SOURCE	SYSTEM WATTS	ADVANCED SOURCE	SYSTEM WATTS	WATTS SAVED	\$.10/KWH	\$.15/KWH
100HPS	130	60CMPE	67	63	\$ 28	\$ 42
150HPS	190	90CMPE	99	91	\$ 40	\$ 60
250HPS	295	210MCE	225	70	\$ 31	\$ 46
400HPS	465	315MCE	338	127	\$ 56	\$ 84
100MH	129	60CMPE	67	62	\$ 27	\$ 41
150MH	185	90CMPE	99	86	\$ 38	\$ 57
175MH	210	90CMPE	99	111	\$ 49	\$ 73
250MH	291	140CMPE	154	137	\$ 62	\$ 93
400MH	460	210MCE	225	235	\$103	\$155
400MH	460	315MCE	338	122	\$ 54	\$ 81

		In lumens	Pin	In Sys eff	12khr sys eff
Cosmo	60	6900	67	103.0	82.4
	90	10,450	99	105.6	84.4
	140	16500	154	107.1	85.7
Elite	210	24150	225	107.3	85.9
	315	37800	338	111.8	89.5

Precedent

Title 20 has had an option that allows lower than the specified 90-92% ballast efficiency for luminaires “....sold together with at least one lamp per socket, having a minimum lamp mean efficacy of 80 lumens per watt based on published mean lumens and rated lamp power (watts).” When this provision is met, ballast efficiency need only be 88%.

Philips proposal

Philips proposes that a similar allowance be made for “dimming level” in Section 130.1(c)7B to accommodate high efficacy systems that cannot be dimmed below 60% of design power. The Philips proposal is based on the 80 lm/W allowance in Title 20 combined with a >92% ballast efficiency (note that the CosmoPolis system has lower than 92% ballast efficiency but much greater lamp efficacy than 80 lm/W).

EXCEPTION to Section 130.1(c)7B: In parking garages, parking areas and loading and unloading areas in which the installed lighting consists of a metal halide system with a lamp/ballast “mean system efficacy” of greater than 75 lumens per watt, occupant sensing controls shall reduce power by at least 40 percent.

We thank you for your consideration of this proposal.

Sincerely,

Robert Erhardt
Sr. Mgr. Technical Relations
Philips Lighting