Photometric Test Report

Relevant Standards

☑IES LM-79-2008
☑ANSI C82.77:2014

Prepared For

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1.0 Test Summary

DLC Technical Requirements v4.3

E26 Lamps				
Requirement Category	**Test Method**	**Requirements**	**Test value**	**Results (Fail/Pass)**
Lamp Output (lm)	IES LM-79-2008	–	2403	-
Zonal Lumen Requirement(0°-90°)	IES LM-79-2008	–	55.64%	-
Minimum Luminaire Efficacy (lm/W)	IES LM-79-2008	–	130.0	-
Alowable CCTs* (K)	IES LM-79-2008	-	3025	-
Minimum CRI	IES LM-79-2008 CIE 13.3-1995	–	83	-
Power Factor	ANSI C82.77:2014	–	0.907	-
		–	0.991	-
Total Harmonic Distortion (A%)	ANSI C82.77:2014	–	12.91%	-
		–	10.06%	-

2.0 Test List

Test Item	Test	Test Date	Model Number	Sample No.
1	Integrating Sphere Test	2018/9/29	HID-18-E26-830-BYP-PT	B1
2	Goniophotometer Test	2018/9/29	HID-18-E26-830-BYP-PT	B1
3	THD and PF Test	2018/9/29	HID-18-E26-830-BYP-PT	B1

Remark(If any)
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2、The results reported herein have been performed in accordance with the laboratory's terms of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory. The results in this report apply to the test sample(s) mentioned above at the time of the testing period only and are not to be used to indicate applicability to other similar products. This report does not imply that the product(s) has met the criteria for certification.

3.0 Production Description

Luminaire Description: HID-18-E26-830-BYP-PT

Electrical Specification: 120V-277V,50/60HZ, 18W

Photos of Luminaire Characteristics

4.0 LM-79 Measurement and Test Results

4.1 Integrating Sphere Test

Model No.	HID-18-E26-830-BYP-PT	Sample ID.	B1
Opreate time (Min.)	90	Stabilization time (Min.)	45

Test Method
The samples were tested according to the IES LM-79-2008.
Photometric paramters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25º C ± 1º C.
The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere.
The voltage of an AC power supply (RMS voltage) or DC power supply (instantaneous voltage) applied to the device under test shall be regulated to within ±0.2 percent under load.
The sample was measured using 4π geometry and operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

Test Conditions

Model No.	Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
HID-18-E26-830-BYP-PT	25.1	277.08	60	0.074	18.50	0.907

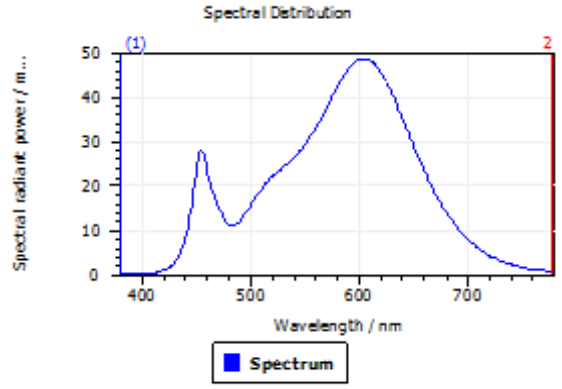
Test Result

Model No.	CCT (K)	CRI (Ra)	Duv
HID-18-E26-830-BYP-PT	3025	83.0	1.7E-03

4.1 Integrating Sphere Test

HID-18-E26-830-BYP-PT

Results



Spectral values

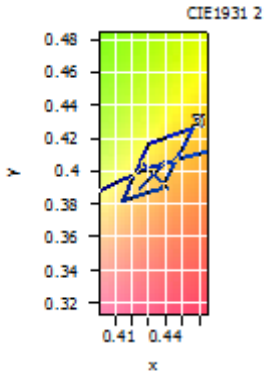
DominantWavelength	583.35 nm
Purity	0.495
PeakWavelength	603.71 nm
Radiant Power	7.42 W
Width50%:	128.63 nm

Color Coordinates

Correlated Color Temperatu 3025 K

x:	0.4328	u:	0.2503	u':	0.2503
y:	0.3984	v:	0.3457	v':	0.5185

ResultsCRICRI01	82.1	ResultsCRICRI09	10.6
ResultsCRICRI02	93.1	ResultsCRICRI10	84.1
ResultsCRICRI03	94.2	ResultsCRICRI11	79.3
ResultsCRICRI04	80.0	ResultsCRICRI12	74.1
ResultsCRICRI05	82.6	ResultsCRICRI13	85.1
ResultsCRICRI06	91.8	ResultsCRICRI14	97.6
ResultsCRICRI07	81.3	ResultsCRICRI15	74.9
ResultsCRICRI08	59.0	ResultsCRICRI16	71.8
ResultsCRI	83.0		



PlanckDistance 1.7E-003

4.0 LM-79 Measurement and Test Results

4.3 Goniophotometer Test

Model No.	HID-18-E26-830-BYP-PT	Sample ID.	B1
Opreate time (Min.)	90	Stabilization time (Min.)	45

Test Method
The samples were tested according to the IES LM-79-2008.
Photometric paramters were measured using a type C goniophotometer and software.
The ambient temperature shall be maintained at 25° C ± 1° C, measured at a point not more than 1 m from the sample and at the same height as the sample.
The voltage of an AC power supply (RMS voltage)or DC power supply (instantaneous voltage) applied to the device under test shall be regulated to within ±0.2 percent under load.
The samples were operated at rated voltage and was stabilized before measurement. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 0.5^{o} vertical intervals and 10^{o} horizontal intervals.

Test Conditions

Three tubes were placed in a reference housing during testing

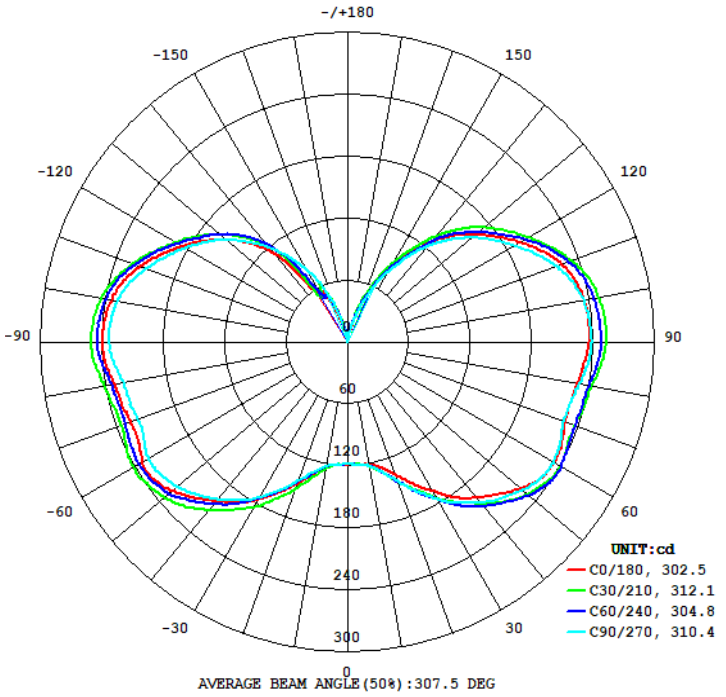
Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Power (W)	Orientation
25.10	276.99	60	18.5	Light Down

Test Result

Flux(lm)	Zonal Lumen Requirement(0°-90°)	Luminous Efficacy (lm/W)
2403	55.64%	130.0

4.3 Goniophotometer Test

Light Distrubtion Curve



4.3 Goniophotometer Test

Zonal Lumen Summary

	Zonal (lm)			Total (lm)	Percent
0 - 10	11.48		0 - 10	11.48	0.48%
10 - 20	37.64		0 - 20	49.12	2.04%
20 - 30	73.96		0 - 30	123.08	5.12%
30 - 40	118.97		0 - 40	242.05	10.07%
40 - 50	165.28		0 - 50	407.33	16.95%
50 - 60	206.00		0 - 60	613.33	25.52%
60 - 70	226.97		0 - 70	840.30	34.97%
70 - 80	240.46		0 - 80	1080.76	44.97%
80 - 90	256.39		0 - 90	1337.15	55.64%
90 - 100	259.51		0 - 100	1596.66	66.44%
100 - 110	241.12		0 - 110	1837.78	76.47%
110 - 120	203.38		0 - 120	2041.16	84.94%
120 - 130	157.60		0 - 130	2198.76	91.49%
130 - 140	110.43		0 - 140	2309.19	96.09%
140 - 150	61.33		0 - 150	2370.52	98.64%
150 - 160	26.16		0 - 160	2396.68	99.73%
160 - 170	6.21		0 - 170	2402.89	99.99%
170 - 180	0.28		0 - 180	2403.17	100.00%

5.0 THD and PF Test

Model No.	HID-18-E26-830-BYP-PT	Sample ID.	B1

Test Method
The samples were tested according to the ANSI C82.77:2002. The total harmonic distortion shall be measured to the 40th order. The ambient temperature condition was maintained at 25º C ± 1º C. The sample measurements were made using a digital power meter and power supply. The sample was operated at rated voltage and was stabilized before measurement. The total harmonic distortion were calculated.

Test Results

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Power Factor	THD
25.1	277.08	60	0.907	12.91%
25.1	120.05	60	0.991	10.06%

6.0 Equipment Information

Test Equipment			
Equipment ID	Equipment Name	Last Calibration Date	Calibration Due Date
DLF107	Integrating Sphere System	2017/12/28	2018/12/27
DLF108	Auxiliary Lamp	2017/12/28	2018/12/27
DLF122	Measurement Standard Lamp Standard Lamp Type: 220 V, 0.4720 A, Tungsten, Omni-derectional	2017/12/28	2018/12/27
DLF116	AC Power Source	2017/12/28	2018/12/27
DLF113	Power Meter	2017/12/28	2018/12/27
DLF112	Temperature Recorder	2017/12/28	2018/12/27
DLF114	Temperature & Humidity Datalogger	2017/12/28	2018/12/27
DLF101	Goniophotometer	2017/12/28	2018/12/27
DLF125	Standard Lamp Standard Lamp Type: 76.58 V, 6.7875 A, Tungsten, Omni-derectional	2017/12/28	2018/12/27
DLF104	AC Power Source	2017/12/28	2018/12/27
DLF507	DC Power Source	2017/12/28	2018/12/27
DLF102	Power Meter	2017/12/28	2018/12/27
DLF111	Temperature & Humidity Datalogger	2017/12/28	2018/12/27
DLF119	Power Meter	2017/12/28	2018/12/27
DLF031	Temperature data logger	2017/12/28	2018/12/27
DLF022	Digital power meter	2017/12/28	2018/12/27
DLF003	Temperature & Humidity Datalogger	2017/12/28	2018/12/27

********** End of Test Report**********