

REPORT

25800 COMMERCENTRE DRIVE, LAKE FOREST, CA 92630

Project No. G103961645

Original Issue Date: July 3, 2019

Revision Date: July 9, 2019

REPORT NO. 103961645LAX-008A

TEST OF ONE LED LUMINAIRE

MODEL NO. ALD-R-200W-LV-30K-T4
LED MODEL NO. GWP9LR34.PM-M2M3
DRIVER MODEL NO. EUD-240S420DTA
RETROFIT MODEL NO. LITHONIA KAD CONTOUR SERIES

RENDERED TO

SIMPLYLEDS LLC
111 W. 34TH STREET
GARDEN CITY, IDAHO, 83714

Revision Note July 9, 2019: Report was revised to correct the measured LED current from 384.9mA to 96.2mA.

TEST: Electrical and Photometric tests as required to the IESNA test standard.

AUTHORIZATION: The testing performed was authorized by signed quote number Qu-00983281.

STANDARDS USED: The following American National Standards or Illuminating Engineering Society of North America Test Guides were used in part or totally to test each specimen:

IESNA LM-79 - 2008: Electrical and Photometric Measurements of Solid State Lighting

UL 1598-2009: Underwriters Laboratories Inc. Standard for Safety - Luminaires

DESCRIPTION OF SAMPLE: The client submitted one production sample of model number ALD-R-200W-LV-30K-T4. The sample was received by Intertek on March 19, 2019, in undamaged condition and one sample was tested as received. The sample designation was LAN1903191345-010.

DATES OF TESTS: June 4, 2019 through July 1, 2019.

SUMMARY

Model No.: ALD-R-200W-LV-30K-T4
Description: LED Luminaire

Criteria	Result
Total Lumen Output (Lumens)	24128
Total Power (W)	199.16
Luminaire Efficacy (LPW)	121.1
BUG Rating	B3-U0-G3
IES Classification	Type IV
Longitudinal Classification	Very Short
Maximum In-Situ Source Temperature Point (°C)	63.5
Maximum In-Situ Driver Case Temperature (°C)	61.9

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Date Calibrated	Calibration Due Date	Date Used
Goniophotometer	6440T	000943	VBU	VBU	06/04/19
AC Source	CW1251P	000944	VBU	VBU	06/04/19
Power Analyzer	WT210	000945	11/28/18	11/28/19	06/04/19
Thermometer	DPI8-C24	001782	09/21/18	09/21/19	06/04/19
Temp. & RH Meter	971	001177	01/29/19	01/29/20	06/04/19
AC Source	CW1251P-V	001336	VBU	VBU	07/01/19
Power Meter	WT330	001322	11/28/18	11/28/19	07/01/19
Thermometer	52 Series II	001265	10/04/18	10/04/19	07/01/19
True RMS Multimeter	87 III	000029	09/27/18	09/27/19	07/01/19

TEST METHODS

Seasoning in Sample Orientation – LED Products

No seasoning was performed in accordance with IESNA LM-79.

Photometric and Electrical Measurements – Distribution Method

A LSI Type C High Speed Model 6440 Mirror Goniometer was used to measure the intensity (candelas) at each angle of distribution for each sample.

Ambient temperature was measured equal to the height of the sample mounted on the Goniometer equipment. Each sample was operated at input rated voltage in its designated orientation. Each sample was allowed to stabilize for at least thirty minutes before measurements were made. Electrical measurements including voltage, current, and power were measured using the Xitron or Yokogawa Power Analyzer.

Some graphics were created with Photometrics Plus software.

BUG Ratings (Backlight, Uplight, Glare) – for Outdoor Fixtures Only

Zonal Lumens were calculated and grouped using the formula in IESNA TM-15-11 for each zone as defined in the BUG addendum. The maximum lumen rating in each zone was compared against the BUG zonal requirements of Energy Star. Photometric Toolbox software was used to calculate results.

In-Situ Maximum Measured Power Supply Case and LED Source Point Temperature

Power supply case and/or LED source operating temperature measurements were taken on one test sample per model with a thermocouple and Fluke 87 temperature meter. The SSL sample was allowed to reach thermal equilibrium for seven and a half hours before measurements were taken. Power supply or source temperature measurements were measured at the TMPPS or TS point as indicated by the included diagram in accordance with manufacturers declared hot spot location, or at a hot spot location found with a thermal camera when no diagram from the manufacturer is given. The maximum temperature was recorded for the sample. A simulated ceiling or other enclosure may be used in accordance to UL 1598 or UL 153 as applicable.

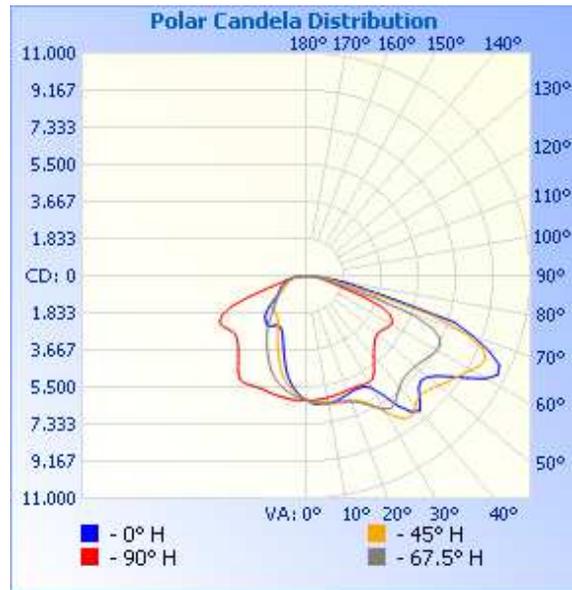
RESULTS OF TEST (cont'd)

Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) – Distribution Method

Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Current ATHD	Absolute Luminous Flux (Lumens)	Lumen Efficacy (LPW)
LAN1903191345-010	UP	120.0	1670	199.2	0.993	8.49	24128	121.1
		277.1	742.9	196.0	0.952	8.04		

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	25	45	67.5	90
0	6136	6136	6136	6136	6136
5	6384	6372	6332	6248	6147
10	6412	6436	6433	6337	6111
15	6311	6396	6498	6432	6060
20	6166	6328	6600	6596	6000
25	6119	6348	6884	6993	6022
30	6374	6803	7744	7589	6100
35	7829	8159	8622	7625	5815
40	8706	8484	8344	7127	5165
45	7813	7977	8166	6937	4742
50	7777	8236	8447	6970	4529
55	8682	8786	8840	7152	4619
60	10170	9774	9334	7401	4821
65	10478	10085	9716	7226	4536
70	8728	7844	8341	5543	2942
75	4507	3577	3485	1692	1245
80	2046	1355	1308	1001	743
85	735	547	677	541	273
90	0	0	0	0	0



RESULTS OF TEST (cont'd)

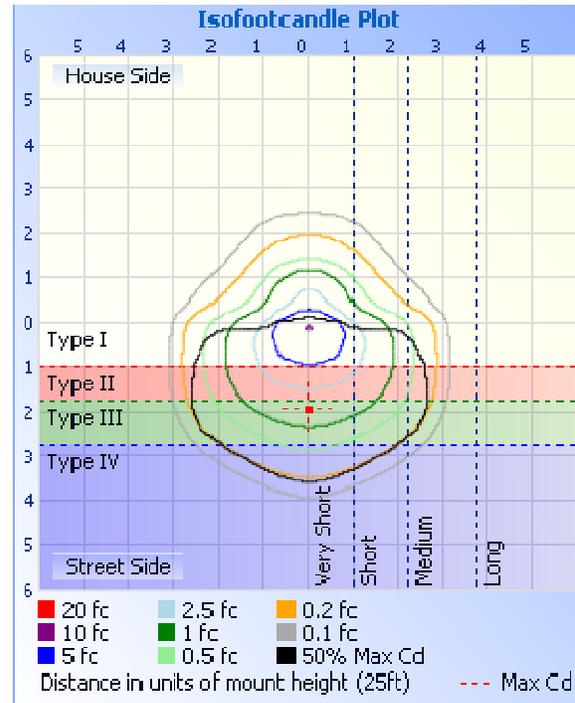
Illumination Plots

Mounting Height: 25 ft.

Illuminance - Cone of Light



Isoillumination Plot



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	4577	19.0
0-40	7992	33.1
0-60	16372	67.9
60-90	7756	32.1
0-90	24128	100.0
90-180	0.0	0.0
0-180	24128	100.0

Luminaire Classification System (LCS)

LCS	Zone	Lumens	% Luminaire
FL	(0-30)	2753	11.4
FM	(30-60)	8892	36.9
FH	(60-80)	5966	24.7
FVH	(80-90)	322.9	1.3
BL	(0-30)	1825.4	7.6
BM	(30-60)	2903	12.0
BH	(60-80)	1247.7	5.2
BVH	(80-90)	220.9	0.9
UL	(90-100)	0.0	0.0
UH	(100-180)	0.0	0.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	575.1	2.4
10-20	1588	6.6
20-30	2414	10.0
30-40	3415	14.2
40-50	3918	16.2
50-60	4462	18.5
60-70	4869	20.2
70-80	2343	9.7
80-90	543.6	2.3

BUG Rating: B3-U0-G3
 IES Classification: Type IV
 Longitudinal Classification: Very Short

RESULTS OF TEST (cont'd)

In-Situ Maximum Measured LED Source Temperature

Manufacturer Supplied Documentation:

Forward Voltage Groups ^{1) page 43}

Durchlassspannungsgruppen ^{1) Seite 23}

Group	(min.) V _F [V]	(max.) V _F [V]
Gruppe	(min.) V _F [V]	(max.) V _F [V]
K8	20.80	21.60
T8	21.60	22.40
28	22.40	23.20

Parameter	Symbol	Values	Unit
Bezeichnung	Symbol	Werte	Einheit
"Electrical" thermal resistance junction / solder point (typ.)	R _{th,JSel}	1.5	K/W
"Elektrischer" Wärmewiderstand Sperschicht / Lötpad (with efficiency η _e = 59 %)			

Maximum Ratings
Grenzwerte

Parameter	Symbol	Values	Unit
Bezeichnung	Symbol	Werte	Einheit
Junction temperature	T _j	125	°C
Sperschichttemperatur			

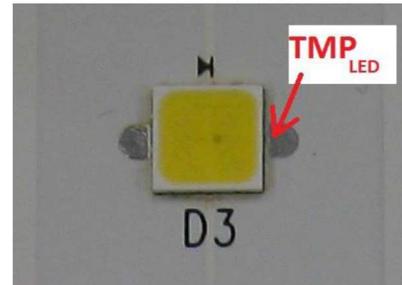


Fig. 2 DURIS S8 type LED model GW P9LT31.PM and temperature measurement point.

Maximum Junction Temperature from LED specification (T_j) = 125°C

Thermal Resistance Formula from LED specification = 1.5°C/W

Maximum Forward Voltage (V_f) from LED specification = 23.2V

Measured LED Current = 96.2mA

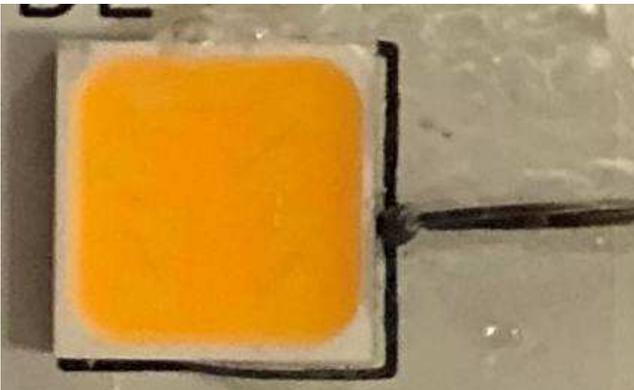
Calculated LED Wattage = V_f x Measured LED Current = 2.232W

Maximum Source Temperature (T_s) = T_j – (LED Wattage x Thermal Resistance) = 121.7°C

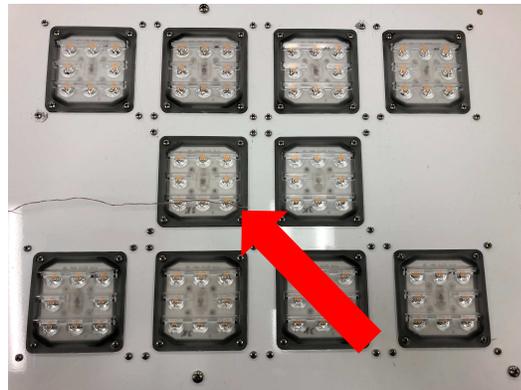
Maximum Measured Manufacturer Designated Source Temperature

Sample No.	Maximum Measured Source Temperature (°C)	Location	Maximum Rated Source Temperature (°C)
LAN1903191345-010	63.5	Per specs above	121.7

LED In-Situ Picture – T_s



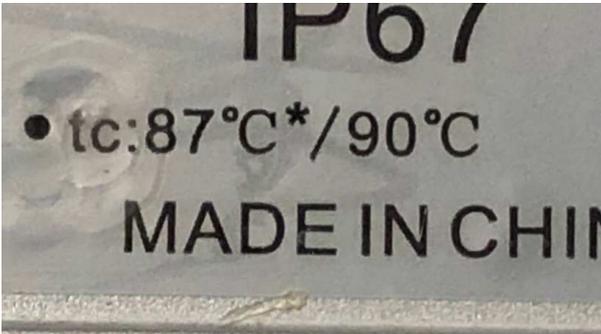
LED In-Situ Picture – T_s location



RESULTS OF TEST (cont'd)

In-Situ Maximum Measured Power Supply Case Temperature

Manufacturer Supplied Documentation:



Sample No.	Maximum Measured Source Temperature (°C)	Location	Maximum Rated Source Temperature (°C)
LAN1903191345-010	61.9	Per specs above	87.0

Driver In-Situ Picture – Ts Location



PICTURES (not to scale)



CONCLUSION

The results tabulated in this report are representative of the actual test samples submitted for this report only. The data is provided to the client for further evaluation. Compliance to the referenced specification requirements was not determined in this report.

In Charge Of Tests:

Erik Linares
Associate Engineer
Lighting Division

Attachment: None

Report Reviewed By:

Vladimir Kozak
Engineering Supervisor
Lighting Division