REPORT

25800 COMMERCENTRE DRIVE, LAKE FOREST, CA 92630

Project No. G103924656 Date: May 10, 2019

REPORT NO. 103924656LAX-008

TEST OF ONE LED LUMINAIRE

MODEL NO. ALD-R-080W-LV-30K-T4
LED MODEL NO. GWP9LR34.PM-M2M3
DRIVER MODEL NO. EUD-075S180DT
RETROFIT MODEL NO. LITHONIA KAD CONTOUR SERIES

RENDERED TO

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

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

AUTHORIZATION: The testing performed was authorized by signed quote number Qu-00973316-2.

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-080W-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 LAN1903191345-003A.

DATES OF TESTS: May 6, 2019 through May 9, 2019.

SUMMARY

Model No.:	ALD-R-080W-LV-30K-T4
Description:	LED Luminaire

Criteria	Result
Total Lumen Output (Lumens)	10053
Total Power (W)	78.93
Luminaire Efficacy (LPW)	127.4
BUG Rating	B2-U0-G2
IES Classification	Type IV
Longitudinal Classification	Very Short
Maximum In-Situ Source Temperature Point (°C)	52.6
Maximum In-Situ Driver Case Temperature (°C)	58.9

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Date Calibrated	Calibration Due Date	Date Used
Goniophotometer	6440T	000943	VBU	VBU	05/06/19
AC Source	CW1251P	000944	VBU	VBU	05/06/19
Power Analyzer	WT210	000945	11/28/18	11/28/19	05/06/19
Magnetic Level	581-9	001610	10/31/18	10/31/19	05/06/19
Thermometer	DPi8-C24	001782	09/21/18	09/21/19	05/06/19
Temp. & RH Meter	971	001177	01/29/19	01/29/20	05/09/19
AC Source	CW1251P-V	001336	VBU	VBU	05/09/19
Power Meter	WT333-D-C1/EX2/G5	001322	11/28/18	11/28/19	05/09/19
Thermometer	52 Series II	001265	10/04/18	10/04/19	05/09/19

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.

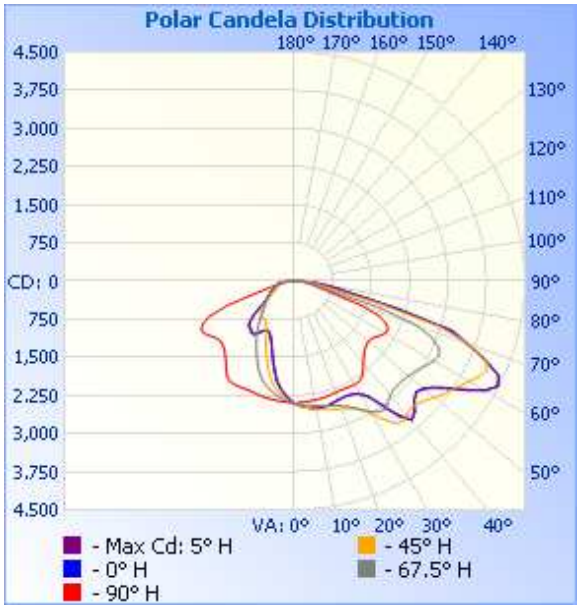
RESULTS OF TEST (cont'd)

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)
LAN1903191345-003A	UP	120.1	660.4	78.93	0.996	5.11	10053	127.4
		277.1	292.4	77.73	0.960	5.732		

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	25	45	67.5	90
0	2407	2407	2407	2407	2407
5	2491	2499	2493	2444	2381
10	2535	2550	2548	2482	2369
15	2529	2565	2604	2534	2355
20	2486	2554	2667	2610	2333
25	2476	2568	2764	2749	2329
30	2559	2683	3017	2962	2346
35	2954	3152	3413	3076	2294
40	3568	3459	3420	2918	2090
45	3303	3354	3406	2869	1934
50	3280	3492	3563	2901	1869
55	3654	3698	3740	2998	1919
60	4288	4084	3938	3139	2047
65	4418	4279	4138	3119	1972
70	3609	3330	3635	2535	1388
75	2103	1689	1758	779	517
80	888	620	581	421	308
85	441	320	370	271	150
90	0	0	0	0	0



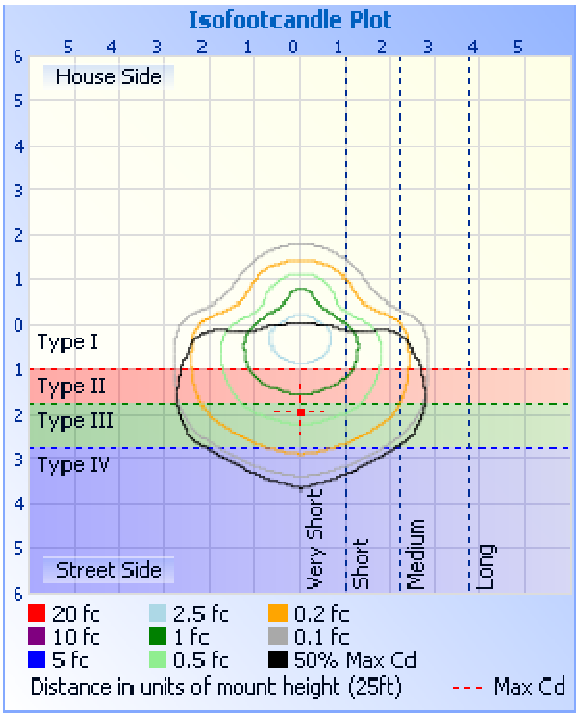
RESULTS OF TEST (cont'd)

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	1813	18.0
0-40	3170	31.5
0-60	6678	66.4
60-90	3374	33.6
0-90	10053	100.0
90-180	0.0	0.0
0-180	10053	100.0

Luminaire Classification System (LCS)

LCS	Zone	Lumens	% Luminaire
FL	(0-30)	1093	10.9
FM	(30-60)	3671	36.5
FH	(60-80)	2588	25.7
FVH	(80-90)	168.1	1.7
BL	(0-30)	720.3	7.2
BM	(30-60)	1194	11.9
BH	(60-80)	501.5	5.0
BVH	(80-90)	117.7	1.2
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	225.9	2.2
10-20	629.2	6.3
20-30	957.5	9.5
30-40	1358	13.5
40-50	1634	16.3
50-60	1874	18.6
60-70	2062	20.5
70-80	1027	10.2
80-90	285.8	2.8

BUG Rating: B2-U0-G2
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 23
Durchlassspannungsgruppen 1) Seite 23

Group / 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 / Bezeichnung	Symbol / Symbol	Values / Werte	Unit / Einheit
"Electrical" thermal resistance junction / solder point (typ.) "Elektrischer" Wärmewiderstand Sperrschicht / Lötpad (with efficiency η_e = 59 %)	$R_{th\ JS\ el}$	1.5	K/W

Maximum Ratings
Grenzwerte

Parameter / Bezeichnung	Symbol / Symbol	Values / Werte	Unit / Einheit
Junction temperature Sperrschichttemperatur	T_j	125	°C

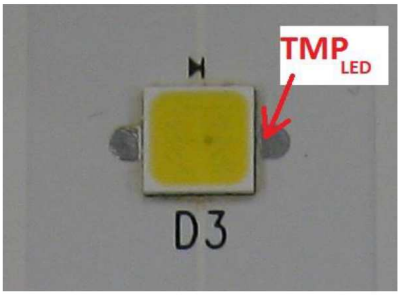


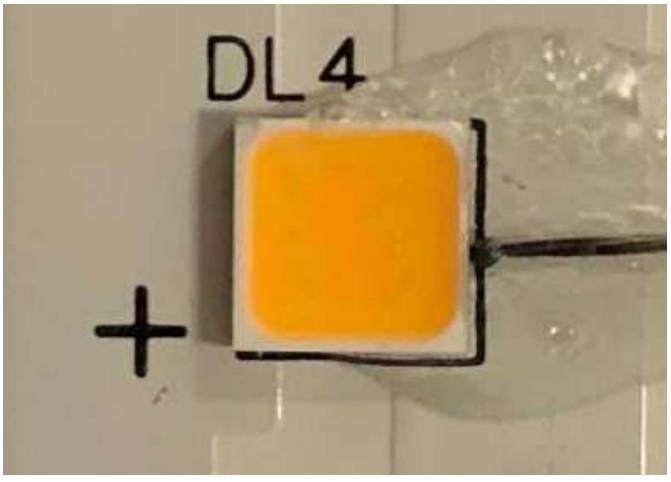
Fig. 2 DURIS S8 type LED model GW P9LT31.PM and temperature measurement point.

Maximum Junction Temperature from LED specification (Tj) = 125°C
Thermal Resistance Formula from LED specification = 1.5°C/W
Maximum Forward Voltage (Vf) from LED specification = 23.2V
Measured LED Current = 382.8mA
Calculated LED Wattage = Vf x Measured LED Current = 8.88W
Maximum Source Temperature (Ts) = Tj – (LED Wattage x Thermal Resistance) = 111.7°C

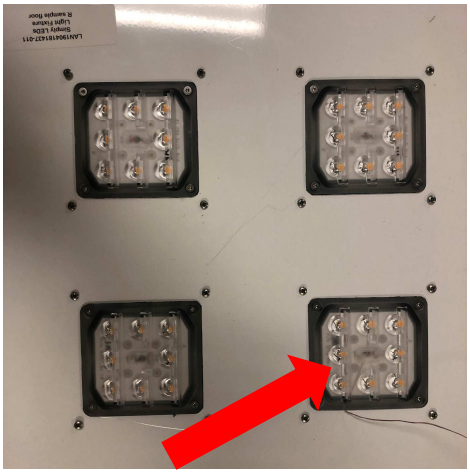
Maximum Measured Manufacturer Designated Source Temperature

Sample No.	Maximum Measured Source Temperature (°C)	Location	Maximum Rated Source Temperature (°C)
LAN1903191345-003A	52.6	Per specs above	111.7

LED In-Situ Picture – Ts



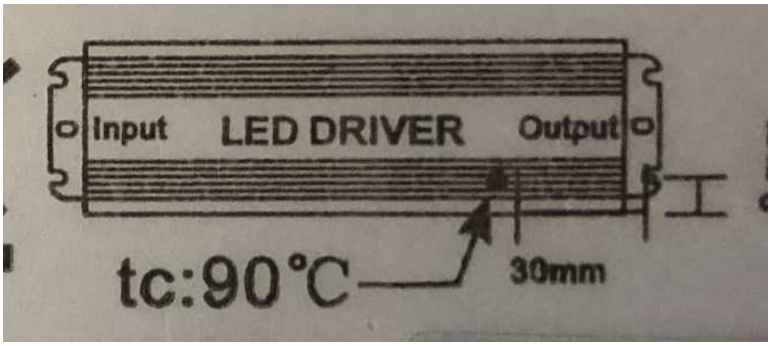
LED In-Situ Picture – Ts location



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)
LAN1903191345-003A	58.9	Per specs above	90.0

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

Report Reviewed By:

Vladimir Kozak
Engineering Supervisor
Lighting Division

Attachment: None