

Test Report

Report Number: L24024

Date: Sep 10, 2024

Issued by:

Dialight Optics Laboratory
1501 Route 34 South, Farmingdale, NJ 07727

Test of one Street Light

Unit manufacturer: Dialight Corporation
Unit model number: S1xNPW2FxxxxxN

Issued to:

Dialight Corporation
1501 Route 34 South, Farmingdale, NJ 07727

Tests performed: Photometric characterization and temperature measurement per the described standards.

Dates of test: August 28, 2024 through September 10, 2024

Standards used: All tests are performed in accordance with procedures and guidelines prescribed by the American National Standards Institute (ANSI) or Illuminating Engineering Society of North America (IES):

- IES LM-79:2019: Optical and Electrical Measurements of Solid-State Lighting Products
- ANSI/UL 1598:2008: Underwriters Laboratories Inc. Standard for Safety: Luminaires
- ENERGY STAR Manufacturer's Guide for Qualifying Solid State Lighting Luminaires Version 2.1

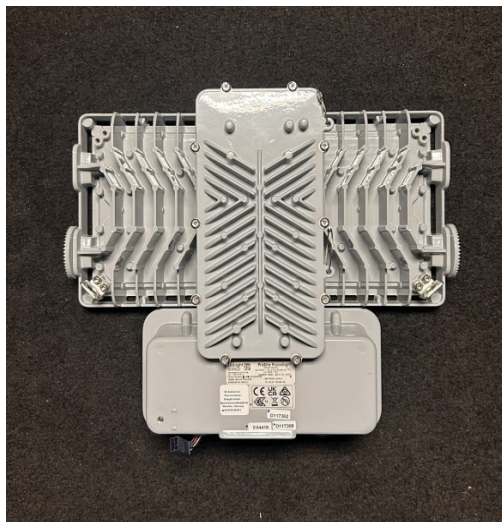
Description of sample:

Sample Number: L24024
Manufacturer: Dialight Corporation
Product Name: ProSite Street Light
Description: Street Light
Model Number: S1xNPW2FxxxxxN

Report Summary

Sample number L24024
Dialight unit model number S1xNPW2FxxxxxN

Photograph(s) of sample:



*Photographs not to scale. For reference only.

Summary of Results:

	<u>Integrating Sphere</u>	<u>Goniophotometer</u>
Luminous Flux:	23069 (lumens)	22792 (lumens)
Electrical Power:	232.9 (W)	233.2 (W)
Luminous Efficacy:	99.03 (lumens/W)	97.72 (lumens/W)

Electrical Measurements:

Primary Voltage:	Input Power (120VAC):	232.9 (W)
	Power Factor (120VAC):	0.9970
	Current ATHD % (120VAC):	4.67
Secondary Voltage:	Input Power (277VAC):	224.0 (W)
	Power Factor (277VAC):	0.9831
	Current ATHD % (277VAC):	8.76

Color Measurements:

Correlated Color Temperature (CCT):	2837 (K)
Color Rendering Index (CRI):	83.01
Chromaticity Coordinate (x):	0.449
Chromaticity Coordinate (y):	0.407
Chromaticity Coordinate (u')	0.257
Chromaticity Coordinate (v')	0.524
DUV:	-0.0003

Temperature Measurements:

In Situ LED Source Temperature:	80.5 (°C)
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Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L24024.

Dialight unit model number S1xNPW2FxxxxxN

Test Conditions:

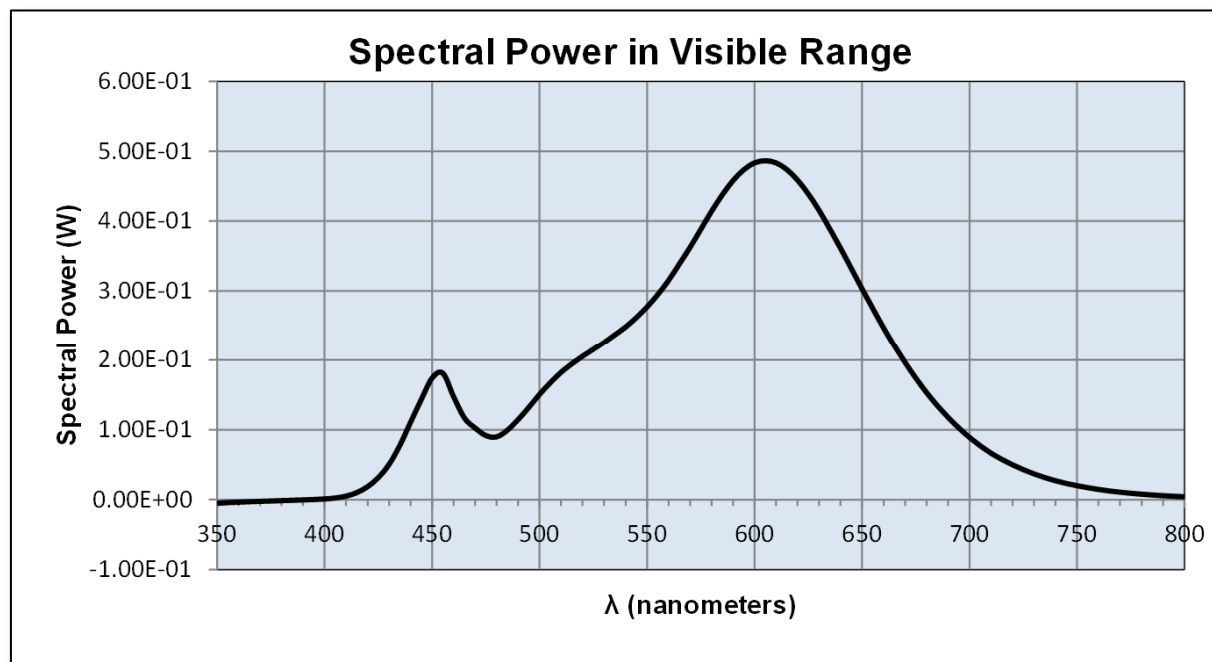
Ambient Temperature: 25 ± 1.2 (°C)
Ambient Relative Humidity: 10 to 65 (%RH)

Electrical Measurements:

Input Voltage: 120.0 (VAC)
Input Current: 1.947 (A)
Input Power: 232.9 (W)
Input Power Factor: 0.9970
Current ATHD: 4.67 (%)

Photometric measurements:

Luminous Flux: 23069.2 (lumens)
Luminous Efficacy: 99.0 (lumens/W)
Correlated Color Temperature (CCT): 2837 (K)
CRI -Ra: 83.01
CRI -R9: 9.78
DUV: -0.0003
CIE Coordinate (x): 0.449
CIE Coordinate (y): 0.407
CIE Coordinate (u'): 0.257
CIE Coordinate (v'): 0.524
TM30_Rf: 85.9
TM30_Rg: 95.9
TM30_Rcs_hue1: -11.06 %



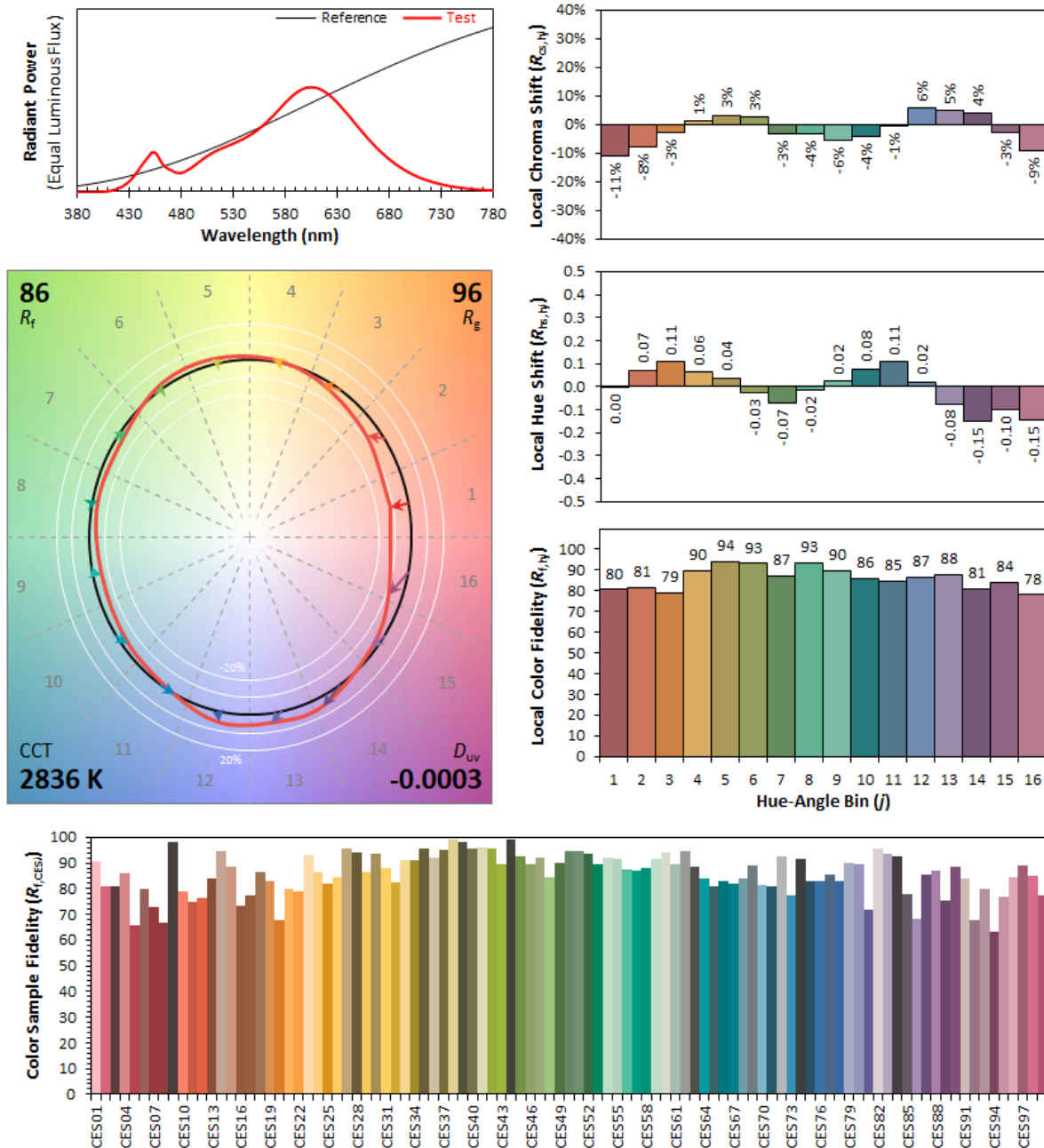
Test Results: Integrating Sphere

Results continued from previous page.

Tabulated Spectral Power in Visible Range:

$\lambda(\text{nm})$	(W/nm)	$\lambda(\text{nm})$	(W/nm)	$\lambda(\text{nm})$	(W/nm)	$\lambda(\text{nm})$	(W/nm)
350	-0.00512	490	0.11453	630	0.41527	770	0.01072
355	-0.00410	495	0.13201	635	0.38862	775	0.00920
360	-0.00349	500	0.15065	640	0.36096	780	0.00787
365	-0.00283	505	0.16729	645	0.33197	785	0.00670
370	-0.00230	510	0.18227	650	0.30274	790	0.00573
375	-0.00186	515	0.19445	655	0.27453	795	0.00489
380	-0.00130	520	0.20536	660	0.24666	800	0.00416
385	-0.00079	525	0.21541	665	0.22062		
390	-0.00028	530	0.22553	670	0.19632		
395	0.00028	535	0.23670	675	0.17384		
400	0.00109	540	0.24805	680	0.15312		
405	0.00246	545	0.26158	685	0.13451		
410	0.00514	550	0.27699	690	0.11760		
415	0.01020	555	0.29477	695	0.10251		
420	0.01866	560	0.31507	700	0.08886		
425	0.03163	565	0.33851	705	0.07692		
430	0.05053	570	0.36256	710	0.06642		
435	0.07767	575	0.38840	715	0.05760		
440	0.11088	580	0.41423	720	0.04981		
445	0.14338	585	0.43789	725	0.04291		
450	0.17401	590	0.45823	730	0.03688		
455	0.18077	595	0.47366	735	0.03163		
460	0.14710	600	0.48349	740	0.02707		
465	0.11684	605	0.48647	745	0.02322		
470	0.10247	610	0.48346	750	0.01999		
475	0.09168	615	0.47388	755	0.01714		
480	0.08983	620	0.45869	760	0.01467		
485	0.09934	625	0.43885	765	0.01254		

IES TM-30-18 Color Rendition Report



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.4486
 y 0.4070
 u' 0.2568
 v' 0.5243

CIE 13.3-1995
(CRI)
 R_a 83
 R_g 10

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L24024.

Dialight unit model number S1xNPW2FxxxxxN

Electrical Measurements:

Input Voltage: 120.0 (VAC)
Input current: 1.95 (A)
Input Power: 233.23 (W)
Power Factor: 0.9969

Photometric measurements:

Absolute Luminous Flux: 22792.4 (lumens)
Luminous Efficacy: 97.7 (lumens/W)

BUG Rating: B3 - U0 - G4

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	8398	8398	8398	8398	8398	
5.00	8673	8623	7019	8101	8046	832
15.00	6505	7246	6229	5191	3666	1562
25.00	6197	4748	6816	2990	2314	2073
35.00	6489	4931	5951	3259	3040	2981
45.00	3492	3545	5090	3495	2690	2670
55.00	1139	2066	9498	2119	1179	2184
65.00	741	3266	14987	1096	991	2938
75.00	456	2061	9304	830	660	1982
85.00	145	788	227	462	276	203
90.00	1	269	23	276	127	

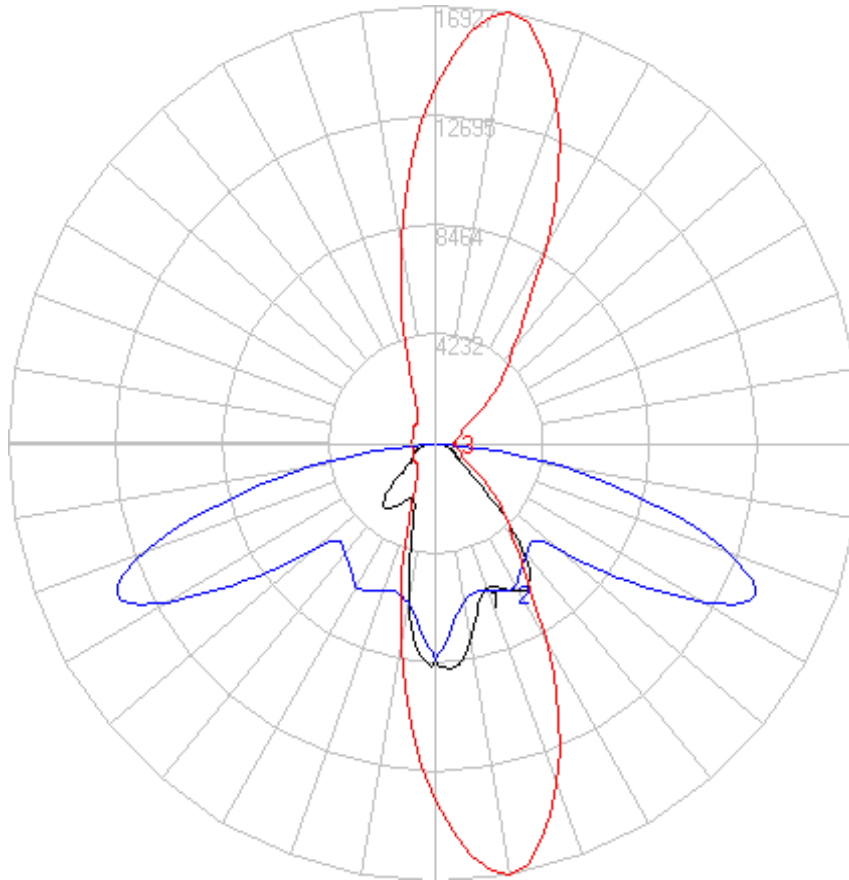
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	4414.50	19.44	19.44
0 to 40	7344.57	32.34	32.34
0 to 60	13858.57	61.02	61.02
0 to 90	22710.68	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	22710.68	100.00	100.00

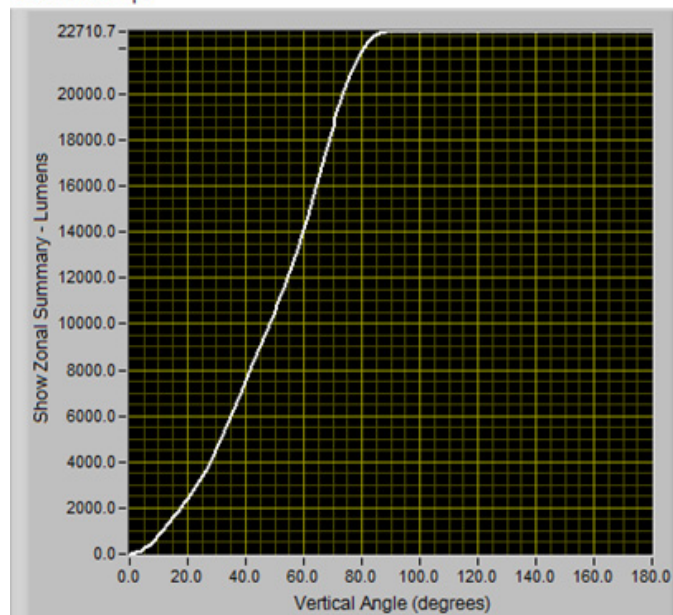
Test Results: Goniometer

Results continued from previous page.

Polar Plot:



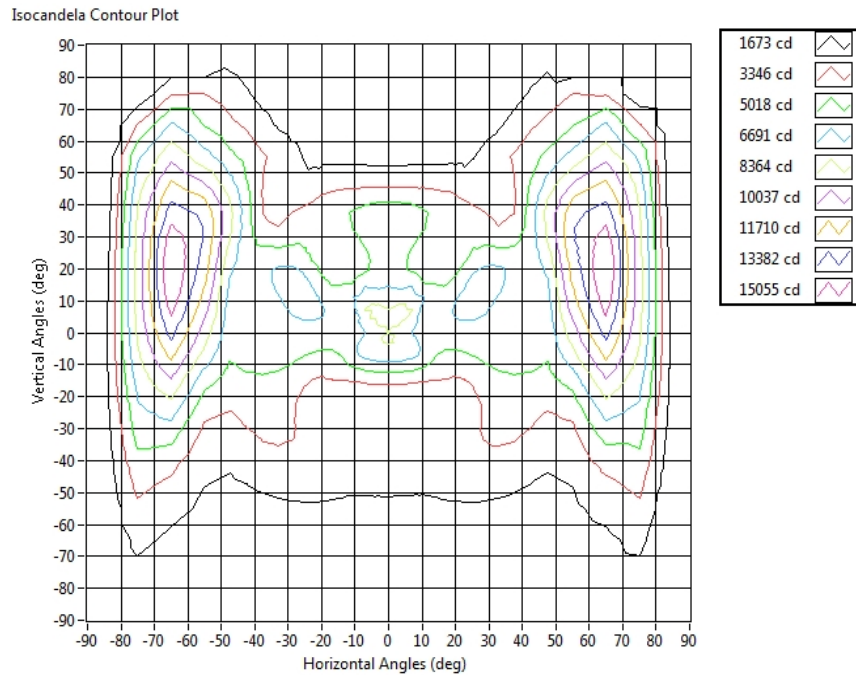
Zonal Flux Graph



Test Results: Goniometer

Results continued from previous page.

Illuminance Plot:



Illuminance-Cone of Light:

Mounting Height (ft)	Beam Cone Width (ft)	Orthogonal Beam Cone Width (ft)	Projected Illuminance (fc)
2	2.38	28.36	2099.5
4	4.77	56.72	524.9
6	7.15	85.08	233.3
8	9.54	113.44	131.2
10	11.92	141.80	84.0
12	14.30	170.16	58.3
14	16.69	198.52	42.8
16	19.07	226.88	32.8
18	21.45	255.24	25.9
20	23.84	283.60	21.0

Test Results: In Situ Temperature Measurement Test

Results include maximum LED chip temperature for sample number L24024.

Dialight unit model number S1xNPW2FxxxxxN

LED identified as Samsung part number LH231B.

LED drive current (as indicated by customer): 1100 (mA)

LED Specifications:

LED specifications are taken from LED manufacturer datasheet:

Maximum Forward Current (If):	2000	(mA)
Maximum Rated Power Dissipation:	6.4	(W)
Maximum Junction Temp. (Tj):	135	(°C)
Thermal Resistance (Rth):	2	(°C/W)

Derived Specifications:

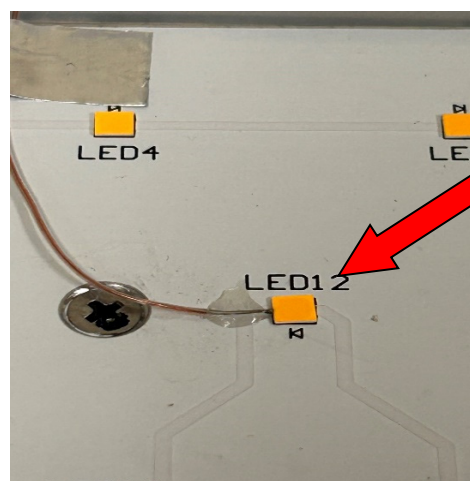
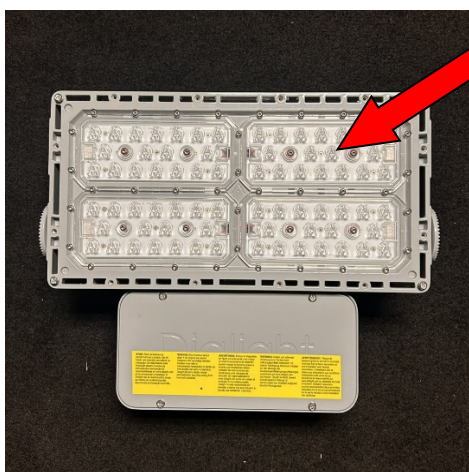
Maximum Power at Indicated Current:	3.432	(W)
Maximum Source Temperature:	128.136	(°C)

Test Conditions:

Temperature Measurement Location:	See Photographs Below
Ambient Temperature:	25° ± 5° (°C)
Ambient temperature at time of measurement:	23.4 (°C)
Relative humidity at time of measurement:	40%

Results:

Measured LED source temperature: 80.5 (°C)



Equipment Used:

Equipment Name	Model Number
Omega TC	DPI8
Type-C Moving Mirror Goniometer	6240T
Elgar AC Power Supply	CW1251P
Sorensen DC Power Supply	XHR150-7
Dialight Confirmation Sample	RRE2MN2CxxxxxN
Fluke 8808A Digit Multimeter	8808A
Step-Up Transformer	
Omega TC Meter	Dpi8-C24
Xitron Power Analyzer	XT2640
Omega Thermocouple	5TC-TT-K
Fluke 971 Humidity Meter	971
GWINSTEK DC Power Supply	GEP172679
Omega TC	TC-08
Labshere 2M sphere	Illumia Plus 2600-195
Labshere Controller	PM-150-140
Labshere Spectrometer- CDS 2600 Spectrometer	CDS-2600
Xitron Power Analyzer	XT2640
LPS-525 DC Power Supply	LPS-525
YOKOGAWA Digital Power Meter	WT310E
STS Luminous Intensity Standard Lamp for Type-C Cal	STD-EHD
STS Luminous Intensity Standard Lamp for Type-C Cal	STD-EHD
STS Luminous Intensity Standard Lamp for Type-C Cal	STD-EHD
Dialight Confirmation Sample	VEx7RB2Exxxxxx
Labsphere calibration lamp for 2M sphere	SCL-1400
Labsphere calibration lamp for 2M sphere	SCL-1400
Labsphere calibration lamp for 2M sphere	SCL-1400

Additional Notes:

Samples are received and tested in new and undamaged condition, unless otherwise noted.
The results shown in this report are representative only of the test samples submitted. This data has been issued to the assignee for further evaluation.
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