Test Report

Report Number: L20094 Date: Jan 5, 2021

Issued by:
Dialight Optics Laboratory
1501 Route 34 South, Farmingdale, NJ 07727

Test of one High Bay
Unit manufacturer: Dialight Corporation
Unit model number: L[C,E,F,W][D,U]-[4,V]UN-[5,9]9x-xxx-xx

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: November 16, 2020 through November 16, 2020

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-79:2008: Electrical and Photometric 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:

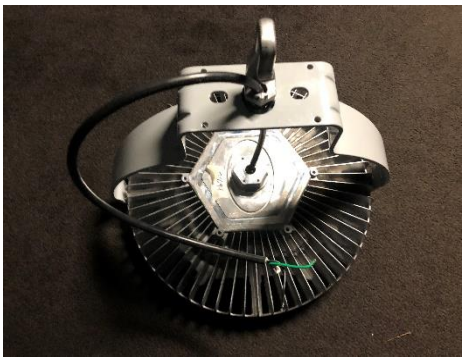
Sample Number:	L20094
Manufacturer:	Dialight Corporation
Product Name:	High Bay
Description:	High Bay
Model Number:	L[C,E,F,W][D,U]-[4,V]UN-[5,9]9x-xxx-xx

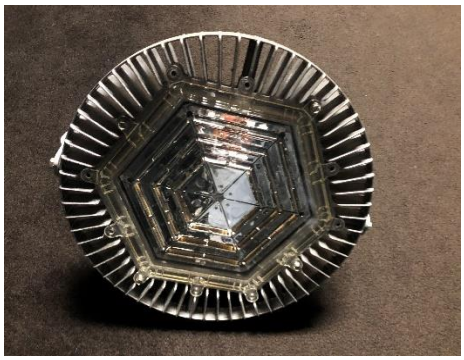
Report Summary

Sample number L20094

Dialight unit model number L[C,E,F,W][D,U]-[4,V]UN-[5,9]9x-xxx-xx

Photograph(s) of sample:





*Photographs not to scale. For reference only.

Summary of Results:

	Integrating Sphere		Goniophotometer	
Luminous Flux:	9234	(lumens)	9155	(lumens)
Electrical Power:	78.1	(W)	78.4	(W)
Luminous Efficacy:	118.3	(lumens/W)	116.8	(lumens/W)

Electrical Measurements:

Input Power (480VAC):	78.1	(W)
Power Factor (480VAC):	0.925785	
Current ATHD % (480VAC):	12.15	
Input Power (347VAC):	78.3	(W)
Power Factor (347VAC):	0.98	
Current ATHD % (347VAC):	15.3	

Color Measurements:

Correlated Color Temperature (CCT):	3886
Color Rendering Index (CRI):	84.4361
Chromaticity Coordinate (x):	0.386
Chromaticity Coordinate (y):	0.380
Chromaticity Coordinate (u'):	0.227
Chromaticity Coordinate (v'):	0.336
DUV:	-0.00004

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L20094.
Dialight unit model number L[C,E,F,W][D,U]-[4,V]UN-[5,9]9x-xxx-xx

Test Conditions:

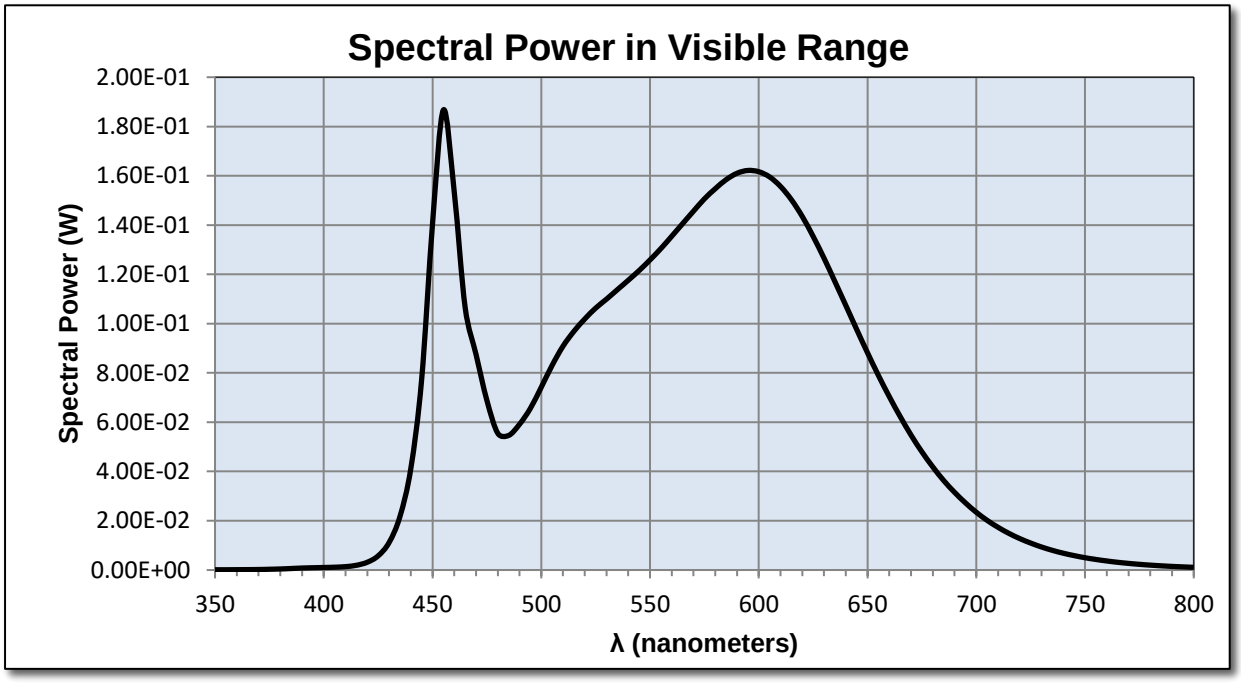
Ambient Temperature:	25 ± 1	(°C)

Electrical Measurements:

Input Voltage:	480	(VAC)
Input Current:	0.175623	(A)
Input Power:	78.1	(W)
Input Power Factor:	0.925785	
Current ATHD:	12.15	(%)

Photometric measurements:

Luminous Flux:	9233.614	(lumens)
Luminous Efficacy:	118.3	(lumens/W)
Correlated Color Temperature (CCT):	3886	(K)
CRI -Ra:	84.4361	
CRI -R9:	16.1077	
DUV:	0.0000	
CIE Coordinate (x):	0.386	
CIE Coordinate (y):	0.380	
CIE Coordinate (u'):	0.227	
CIE Coordinate (v'):	0.336	
TM30_Rf:	81.8	
TM30_Rg:	93.7	
TM30_Rcs_hue1:	-11.29	%



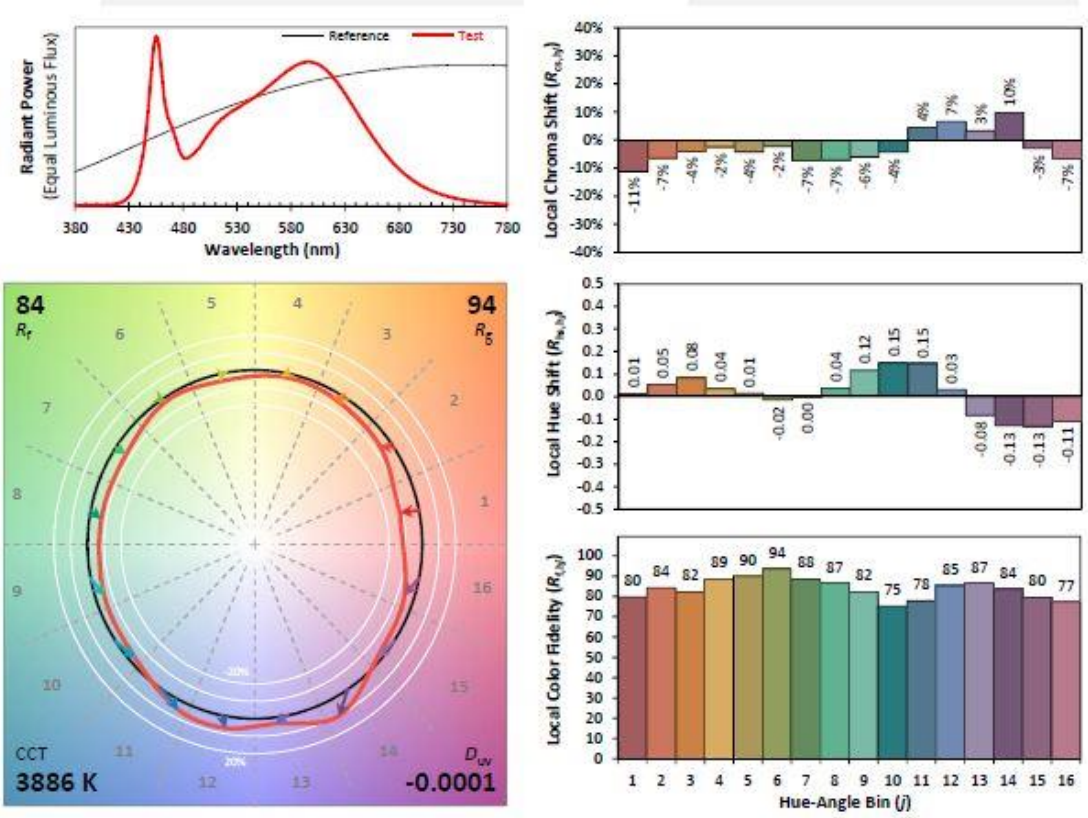
Test Results: Integrating Sphere

Results continued from previous page.

Tabulated Spectral Power in Visible Range:

λ(nm)	(W/nm)	λ(nm)	(W/nm)	λ(nm)	(W/nm)	λ(nm)	(W/nm)
350	0.00012	490	0.05915	630	0.12655	770	0.00269
355	0.00011	495	0.06561	635	0.11706	775	0.00231
360	0.00014	500	0.07420	640	0.10741	780	0.00199
365	0.00017	505	0.08309	645	0.09767	785	0.00170
370	0.00021	510	0.09086	650	0.08816	790	0.00147
375	0.00031	515	0.09686	655	0.07899	795	0.00128
380	0.00042	520	0.10189	660	0.07039	800	0.00110
385	0.00061	525	0.10629	665	0.06230		
390	0.00080	530	0.10994	670	0.05478		
395	0.00093	535	0.11378	675	0.04797		
400	0.00102	540	0.11759	680	0.04187		
405	0.00115	545	0.12154	685	0.03633		
410	0.00137	550	0.12585	690	0.03154		
415	0.00193	555	0.13047	695	0.02726		
420	0.00316	560	0.13548	700	0.02345		
425	0.00575	565	0.14059	705	0.02016		
430	0.01112	570	0.14565	710	0.01734		
435	0.02166	575	0.15061	715	0.01487		
440	0.04108	580	0.15476	720	0.01276		
445	0.07734	585	0.15843	725	0.01095		
450	0.14054	590	0.16102	730	0.00935		
455	0.18673	595	0.16216	735	0.00799		
460	0.15322	600	0.16164	740	0.00682		
465	0.10656	605	0.15953	745	0.00585		
470	0.08752	610	0.15567	750	0.00499		
475	0.06883	615	0.15029	755	0.00429		
480	0.05549	620	0.14349	760	0.00367		
485	0.05462	625	0.13539	765	0.00314		

IES TM-30-18 Color Renditon Report



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

x	0.3856
y	0.3797
u'	0.2273
v'	0.5036

CIE 13.3-1995 (CRI)	
R_a	84
R_9	16

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L20094.
Dialight unit model number L[C,E,F,W][D,U]-[4,V]UN-[5,9]9x-xxx-xx

Electrical Measurements:

Input Voltage:	480	(VAC)
Input current:	0.17597	(A)
Input Power:	78.4	(W)
Power Factor:	0.9264	

Photometric measurements:

Absolute Luminous Flux:	9154.6	(lumens)
Luminous Efficacy:	116.8	(lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	1584	1584	1584	1584	1584	
5.00	1606	1613	1629	1610	1615	163
15.00	1882	1871	1855	1833	1914	533
25.00	1951	1916	1850	1898	1974	895
35.00	1978	1956	1864	1972	1986	1233
45.00	2278	2219	2173	2268	2316	1757
55.00	2283	2473	2596	2536	2352	2153
65.00	1945	1889	1934	1879	1989	1928
75.00	728	474	276	441	666	618
85.00	42	25	14	20	34	17
90.00	0	0	0	0	0	

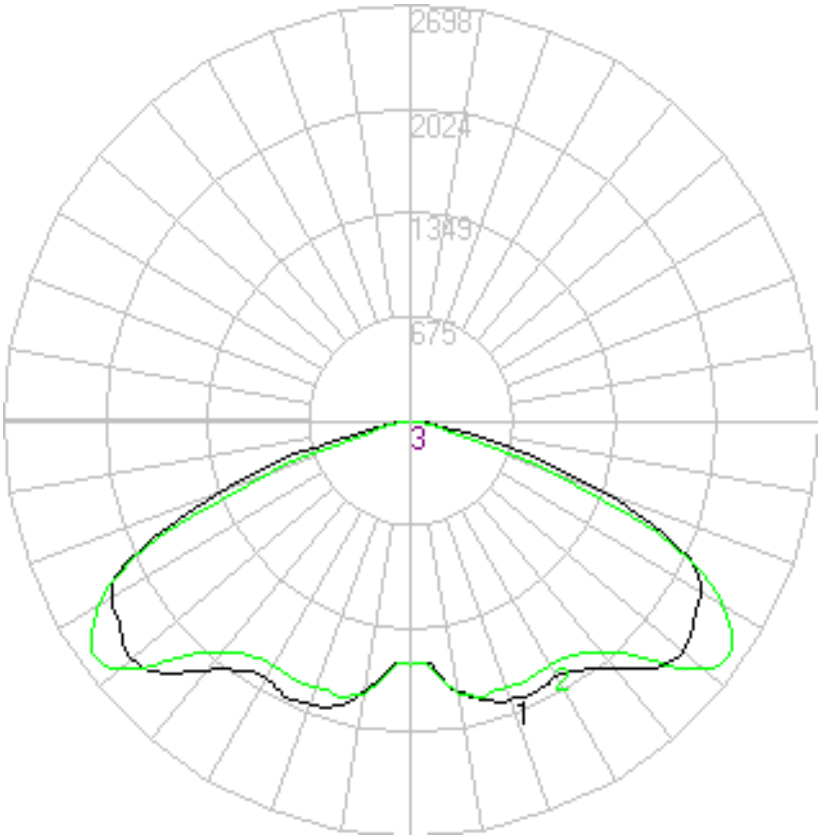
Zonal Lumen Summary

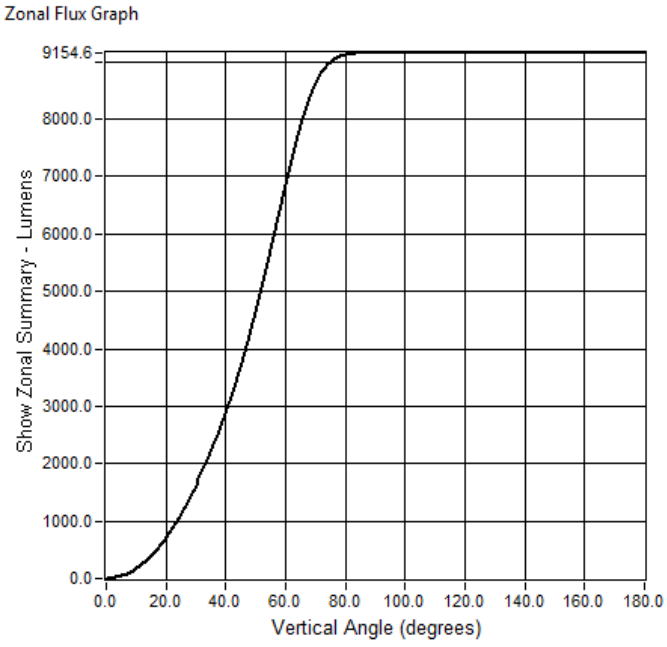
Zone	Lumens	% Lamp	% Fixture
0 to 30	1567.26	17.12	17.12
0 to 40	2792.49	30.50	30.50
0 to 60	6737.49	73.60	73.60
0 to 90	9154.58	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	9154.58	100.00	100.00

Test Results: Goniometer

Results continued from previous page.

Polar Plot:

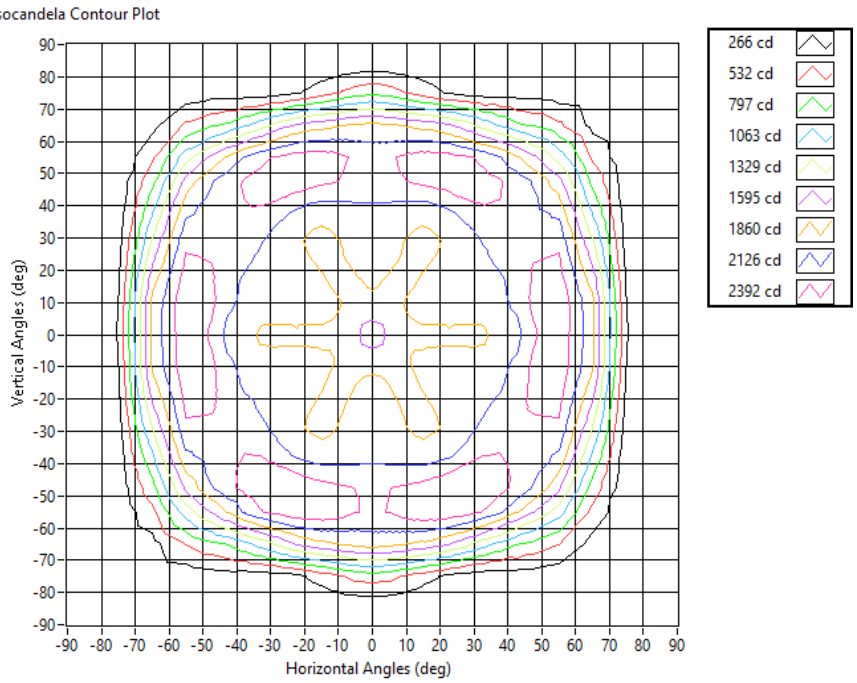




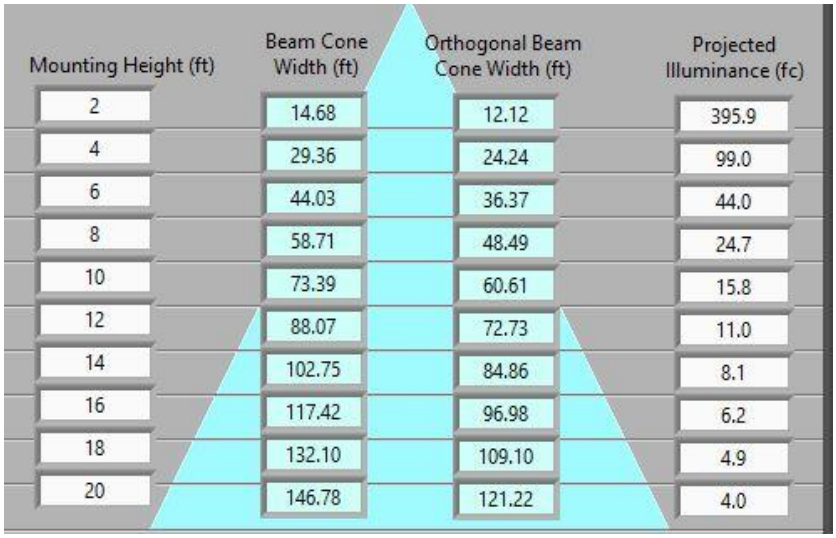
Test Results: Goniometer

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	14.68	12.12	395.9
4	29.36	24.24	99.0
6	44.03	36.37	44.0
8	58.71	48.49	24.7
10	73.39	60.61	15.8
12	88.07	72.73	11.0
14	102.75	84.86	8.1
16	117.42	96.98	6.2
18	132.10	109.10	4.9
20	146.78	121.22	4.0

Equipment Used:

Equipment Name	Model Number
Omega TC	DPi8
YOKOGAWA Digital Power Meter	11/26/3981
LSI High Speed Mirror Goniometer	6240T
Elgar AC Power Supply	CW1251P
Sorensen DC Power Supply	XHR150-7
Dialight Confirmation Sample	HB1N4N
Dialight Confirmation Sample	HB1N4J
Fluke 8808A Digit Multimeter	8808A
Step-Up Transformer	
ITL Osram Calibraton lamps for Goniometer	J9a8
ITL Osram Calibraton lamps for Goniometer	J9a8
ITL Osram Calibraton lamps for Goniometer	J9a8
Fluke 971 Humdity Meter	8/28/1902
GwINSTEK DC Power Supply	GEP172679
Dialight Confirmation Sample	1/0/1900
Labsphere calibration lamp for 2M sphere	SCL-1400
Labshere 2M sphere	Illumia Plus 2600-1
Labshere Controller	PM-150-140
Labshere Spectrameter- CDS 2600 Spectrometer	CDS-2600
Xitron Power Analyzer	9/1/1907
LED Bulb for Electrical Confirmation Test-Gold Sample	Monte Carlo
LED Bulb for Electrical Confirmation Test-Gold Sample	Monte Carlo
LED Bulb for Electrical Confirmation Test-Gold Sample	Monte Carlo

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.
This report shall not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

Test Report Issued By:

Richard Huegi
Dialight Optics Laboratory
Senior Optical Engineering Technician
Lighting Division

Test Report Reviewed and Approved By:

Vishnu Shastry
Dialight Optics Laboratory
Optical Engineer
Approved Signatory