

Test Report

Report Number: L21089

Date: Jul 21, 2021

Issued by:

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

Test of one Highbay

Unit manufacturer: Dialight Corporation

Unit model number: [K,V][C,E,F,W][D,U]-[2,T]WN-[2,8]Jx-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: July 16, 2021 through July 16, 2021

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: L21089

Manufacturer: Dialight Corporation

Product Name: Highbay

Description: Highbay

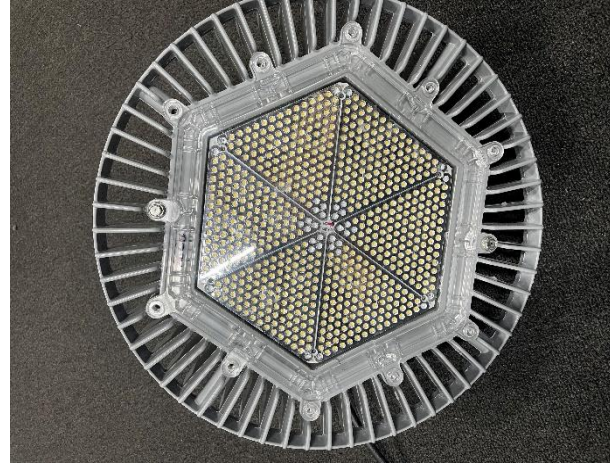
Model Number: [K,V][C,E,F,W][D,U]-[2,T]WN-[2,8]Jx-xxx-xx

Report Summary

Sample number L21089

Dialight unit model number [K,V][C,E,F,W][D,U]-[2,T]WN-[2,8]Jx-xxx-xx

Photograph(s) of sample:



*Photographs not to scale. For reference only.

Summary of Results:

	<u>Integrating Sphere</u>	<u>Goniophotometer</u>
Luminous Flux:	37500 (lumens)	37934 (lumens)
Electrical Power:	229.9 (W)	229.6 (W)
Luminous Efficacy:	163.1 (lumens/W)	165.2 (lumens/W)

Electrical Measurements:

Input Power (120VAC): 229.9 (W)
 Power Factor (120VAC): 0.995551
 Current ATHD % (120VAC): 5.27368
 Input Power (277VAC): 222.2 (W)
 Power Factor (277VAC): 0.9712
 Current ATHD % (277VAC): 6.5

Color Measurements:

Correlated Color Temperature (CCT): 4107
 Color Rendering Index (CRI): 80.5
 Chromaticity Coordinate (x): 0.377
 Chromaticity Coordinate (y): 0.377
 Chromaticity Coordinate (u'): 0.222
 Chromaticity Coordinate (v'): 0.501
 DUV: 0.0013

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21089.

Dialight unit model number [K,V][C,E,F,W][D,U]-[2,T]WN-[2,8]Jx-xxx-xx

Test Conditions:

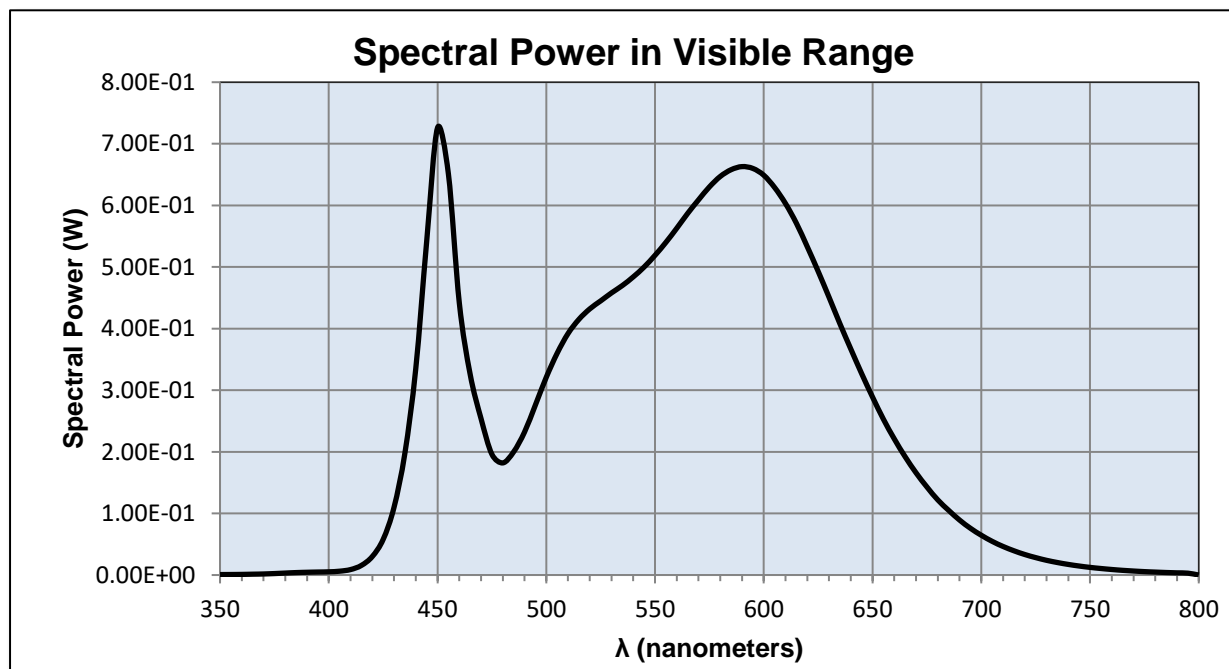
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 120 (VAC)
Input Current: 1.92385 (A)
Input Power: 229.9 (W)
Input Power Factor: 0.995551
Current ATHD: 5.27368 (%)

Photometric measurements:

Luminous Flux: 37500 (lumens)
Luminous Efficacy: 163.1 (lumens/W)
Correlated Color Temperature (CCT): 4107 (K)
CRI -Ra: 80.5
CRI -R9: -7.79
DUV: 0.0013
CIE Coordinate (x): 0.377
CIE Coordinate (y): 0.377
CIE Coordinate (u'): 0.222
CIE Coordinate (v'): 0.501
TM30_Rf: 82.4
TM30_Rg: 94.2
TM30_Rcs_hue1: -14.00 %



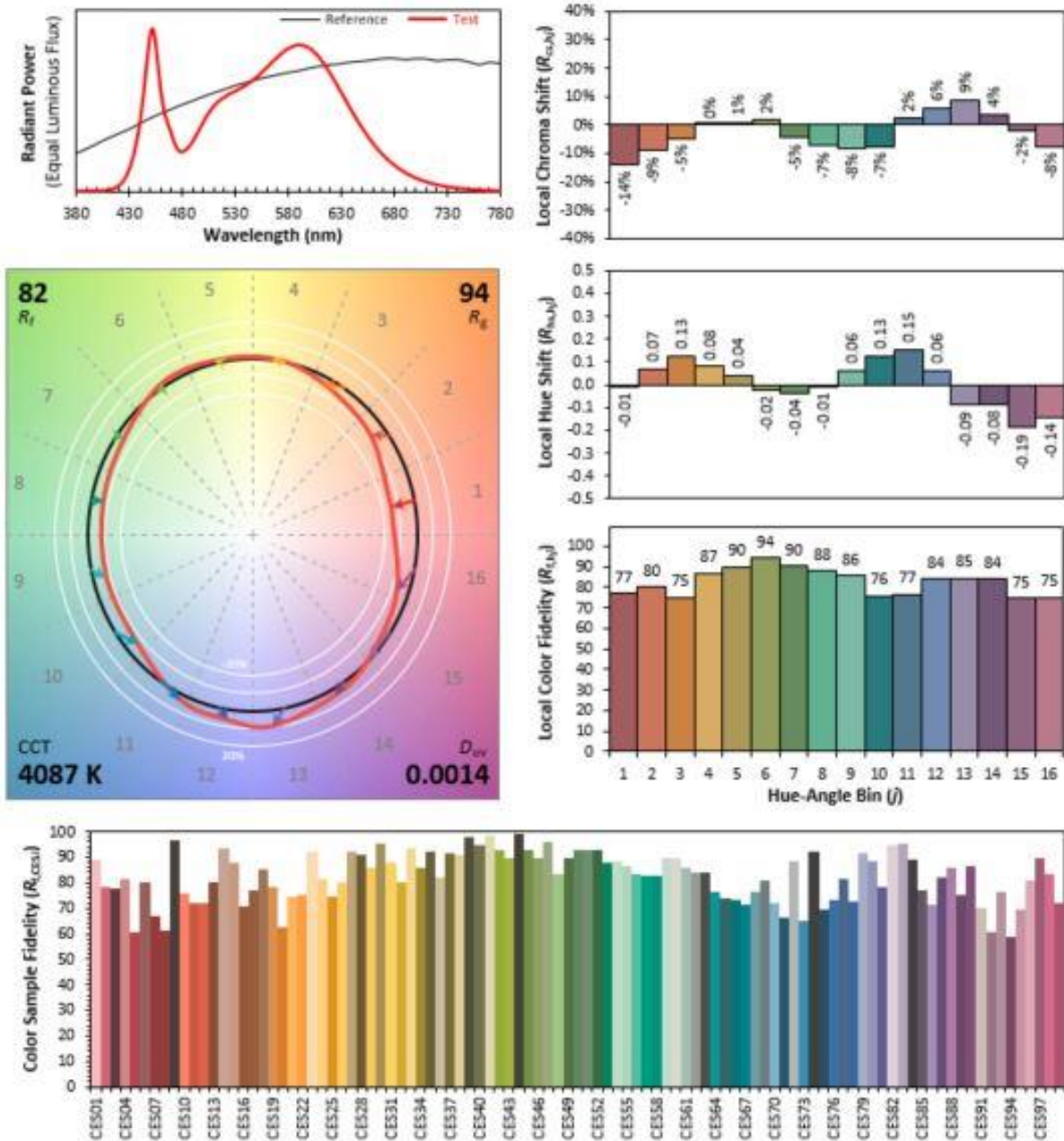
Test Results: Integrating Sphere

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	0.00078	490	0.23200	630	0.45100	770	0.00650
355	0.00085	495	0.27600	635	0.40800	775	0.00553
360	0.00103	500	0.32100	640	0.36700	780	0.00477
365	0.00135	505	0.36000	645	0.32700	785	0.00411
370	0.00172	510	0.39200	650	0.28900	790	0.00353
375	0.00238	515	0.41500	655	0.25300	795	0.00300
380	0.00321	520	0.43200	660	0.22100	800	0.00259
385	0.00395	525	0.44500	665	0.19200		
390	0.00449	530	0.45800	670	0.16600		
395	0.00486	535	0.47000	675	0.14300		
400	0.00522	540	0.48400	680	0.12200		
405	0.00620	545	0.50000	685	0.10500		
410	0.00886	550	0.51900	690	0.08930		
415	0.01560	555	0.54000	695	0.07590		
420	0.03000	560	0.56300	700	0.06460		
425	0.05780	565	0.58700	705	0.05470		
430	0.11000	570	0.60900	710	0.04640		
435	0.19800	575	0.63000	715	0.03940		
440	0.33500	580	0.64700	720	0.03330		
445	0.54100	585	0.65800	725	0.02830		
450	0.72600	590	0.66300	730	0.02390		
455	0.65100	595	0.66000	735	0.02030		
460	0.44200	600	0.64900	740	0.01720		
465	0.32600	605	0.62900	745	0.01460		
470	0.25400	610	0.60300	750	0.01240		
475	0.19600	615	0.57100	755	0.01060		
480	0.18200	620	0.53300	760	0.00898		
485	0.20000	625	0.49300	765	0.00762		

IES TM-30-18 Color Rendition Report



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

x 0.3776
 y 0.3780
 u' 0.2228
 v' 0.5017

CIE 13.3-1995
(CRI)

R_a 80
 R_g -8

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L21089.

Dialight unit model number [K,V][C,E,F,W][D,U]-[2,T]WN-[2,8]Jx-xxx-xx

Electrical Measurements:

Input Voltage: 120 (VAC)
Input current: 1.9215 (A)
Input Power: 229.6 (W)
Power Factor: 0.9954

Photometric measurements:

Absolute Luminous Flux: 37933.6 (lumens)
Luminous Efficacy: 165.2 (lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	14318	14319	14325	14342	14318	
5.00	14305	14250	14274	14319	14230	1448
15.00	13738	13689	13722	13718	13604	3879
25.00	13037	13046	12899	12861	12697	5968
35.00	13182	13106	12595	12328	12145	7958
45.00	14587	14102	13277	12622	12246	10366
55.00	8978	8660	8750	8891	7431	7550
65.00	1203	1138	1246	1448	949	1143
75.00	123	121	128	131	112	128
85.00	16	15	19	23	19	10
90.00	1	1	2	4	2	

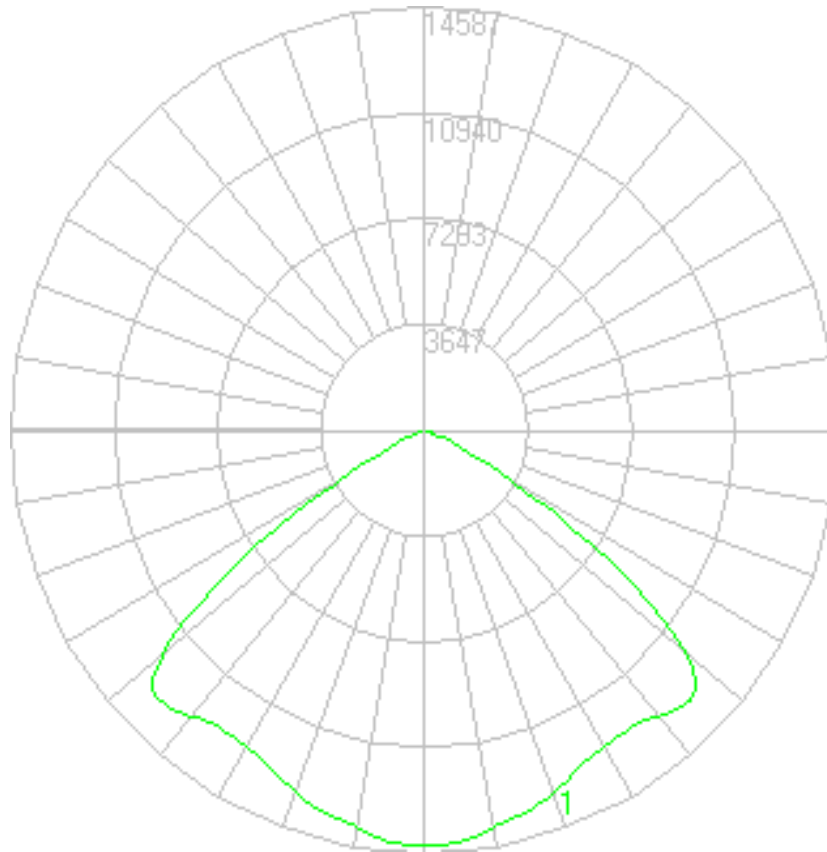
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	11177.36	29.47	29.47
0 to 40	19172.18	50.54	50.54
0 to 60	36396.18	95.95	95.95
0 to 90	37933.61	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	37933.61	100.00	100.00

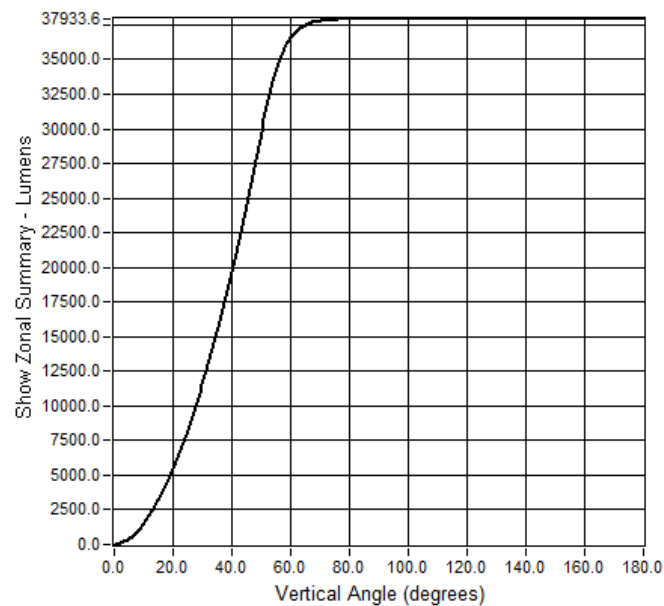
Test Results: Goniometer

Results continued from previous page.

Polar Plot:



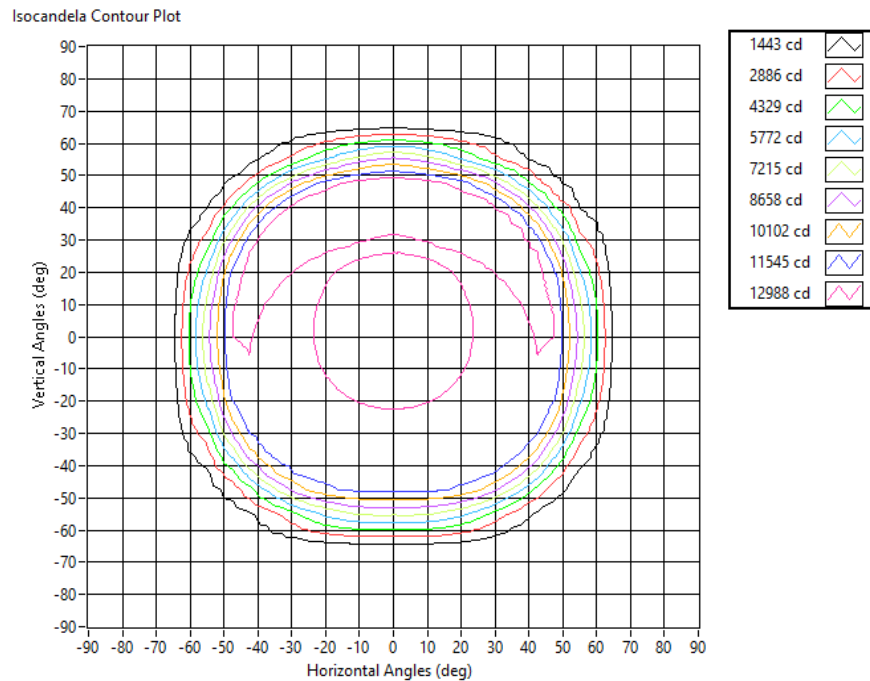
Zonal Flux Graph



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	5.93	6.15	3582.1
4	11.86	12.30	895.5
6	17.78	18.44	398.0
8	23.71	24.59	223.9
10	29.64	30.74	143.3
12	35.57	36.89	99.5
14	41.50	43.04	73.1
16	47.42	49.18	56.0
18	53.35	55.33	44.2
20	59.28	61.48	35.8

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 Humidity 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.
This report shall not be reproduced, except in full, without the express written permission of Dialight Optics Laboratory.

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