Test Report

Report Number: L21185 Date: Jan 18, 2022

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

Test of one BH Z1 CL CIR CW 6klm 230V
Unit manufacturer: Dialight Corporation
Unit model number: BxA4BCG6xxxxxx

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: January 13, 2022 through January 13, 2022

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: L21185
Manufacturer: Dialight Corporation
Product Name: SafeSite Bulkhead
Description: BH Z1 CL CIR CW 6klm 230V
Model Number: BxA4BCG6xxxxxx

Report Summary

Sample number L21185
Dialight unit model number BxA4BCG6xxxxxx

Photograph(s) of sample:





*Photographs not to scale. For reference only.

Summary of Results:

	Integrating Sphere		Goniophotometer	
Luminous Flux:	6241	(lumens)	6288	(lumens)
Electrical Power:	49.6	(W)	49.7	(W)
Luminous Efficacy:	125.9	(lumens/W)	126.6	(lumens/W)

Electrical Measurements:

Input Power (240VAC):	49.6	(W)
Power Factor (240VAC):	0.9647	
Current ATHD % (240VAC):	21.76	
Input Power (120VAC):	50.2	(W)
Power Factor (120VAC):	0.9844	
Current ATHD % (120VAC):	16.27	

Color Measurements:

Correlated Color Temperature (CCT):	5216
Color Rendering Index (CRI):	82.16
Chromaticity Coordinate (x):	0.339
Chromaticity Coordinate (y):	0.350
Chromaticity Coordinate (u'):	0.208
Chromaticity Coordinate (v'):	0.483
DUV:	0.0017

Temperature Measurements:

In Situ LED Source Temperature:	43.8	(°C)

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21185.
Dialight unit model number BxA4BCG6xxxxxx

Test Conditions:

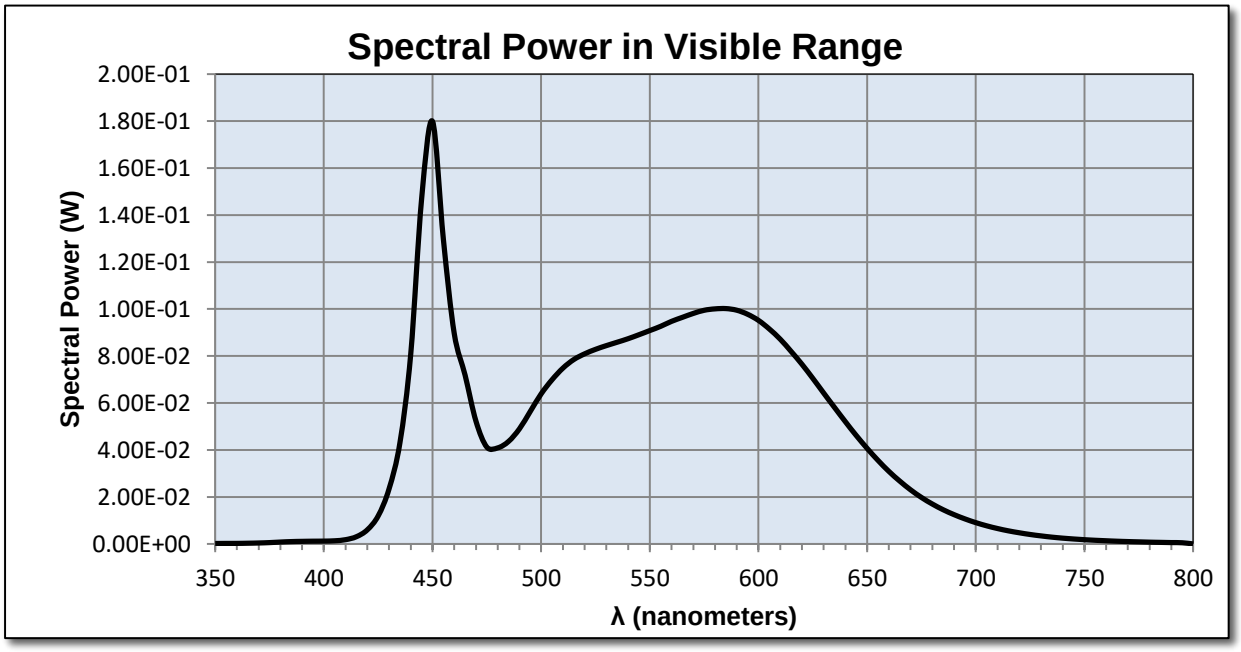
Ambient Temperature:	25 ± 1	(°C)

Electrical Measurements:

Input Voltage:	240.0	(VAC)
Input Current:	0.214	(A)
Input Power:	49.6	(W)
Input Power Factor:	0.9647	
Current ATHD:	21.76	(%)

Photometric measurements:

Luminous Flux:	6240.7	(lumens)
Luminous Efficacy:	125.9	(lumens/W)
Correlated Color Temperature (CCT):	5216	(K)
CRI -Ra:	82.16	
CRI -R9:	-1.42	
DUV:	0.0017	
CIE Coordinate (x):	0.339	
CIE Coordinate (y):	0.350	
CIE Coordinate (u'):	0.208	
CIE Coordinate (v'):	0.483	
TM30_Rf:	83.0	
TM30_Rg:	95.7	
TM30_Rcs_hue1:	-13.67	%



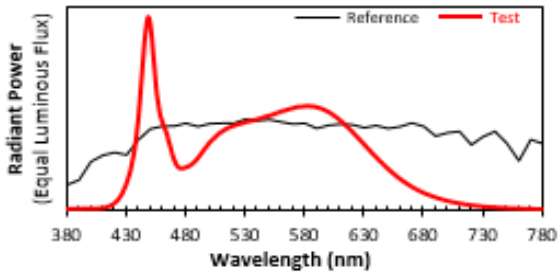
Test Results: Integrating Sphere

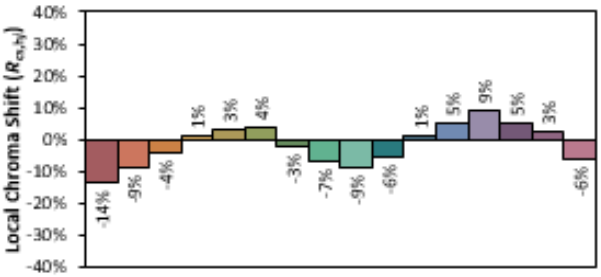
Results continued from previous page.

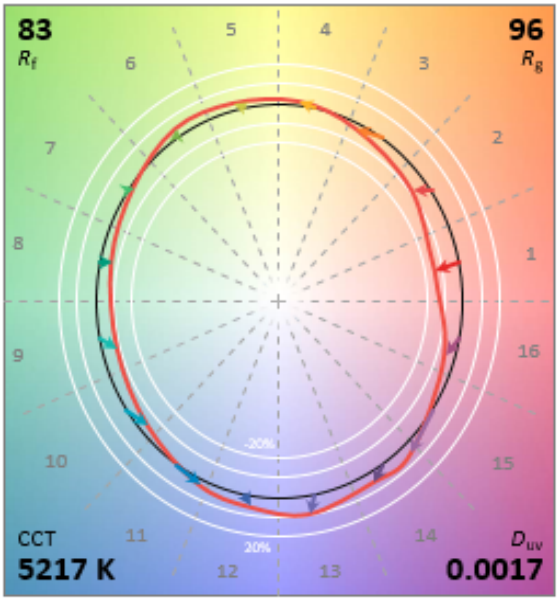
Tabulated Spectral Power in Visible Range:

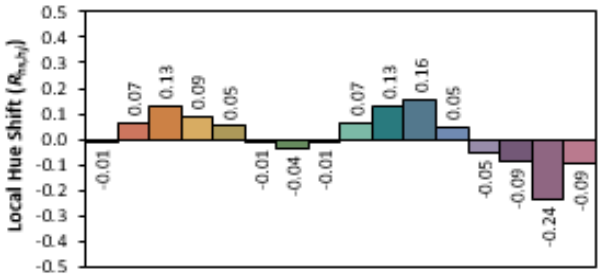
λ(nm)	(W/nm)	λ(nm)	(W/nm)	λ(nm)	(W/nm)	λ(nm)	(W/nm)
350	0.00018	490	0.04899	630	0.06423	770	0.00100
355	0.00021	495	0.05641	635	0.05808	775	0.00087
360	0.00023	500	0.06389	640	0.05201	780	0.00075
365	0.00029	505	0.06988	645	0.04615	785	0.00065
370	0.00040	510	0.07483	650	0.04068	790	0.00057
375	0.00056	515	0.07848	655	0.03556	795	0.00049
380	0.00080	520	0.08092	660	0.03088	800	0.00043
385	0.00099	525	0.08282	665	0.02676		
390	0.00109	530	0.08442	670	0.02303		
395	0.00115	535	0.08586	675	0.01978		
400	0.00119	540	0.08735	680	0.01698		
405	0.00133	545	0.08906	685	0.01455		
410	0.00181	550	0.09083	690	0.01247		
415	0.00308	555	0.09264	695	0.01064		
420	0.00600	560	0.09475	700	0.00906		
425	0.01193	565	0.09646	705	0.00770		
430	0.02341	570	0.09812	710	0.00654		
435	0.04304	575	0.09946	715	0.00556		
440	0.08099	580	0.10007	720	0.00474		
445	0.14704	585	0.10019	725	0.00402		
450	0.17988	590	0.09949	730	0.00341		
455	0.12968	595	0.09777	735	0.00288		
460	0.08958	600	0.09516	740	0.00246		
465	0.07182	605	0.09150	745	0.00210		
470	0.05223	610	0.08717	750	0.00180		
475	0.04121	615	0.08198	755	0.00155		
480	0.04088	620	0.07648	760	0.00134		
485	0.04363	625	0.07049	765	0.00115		

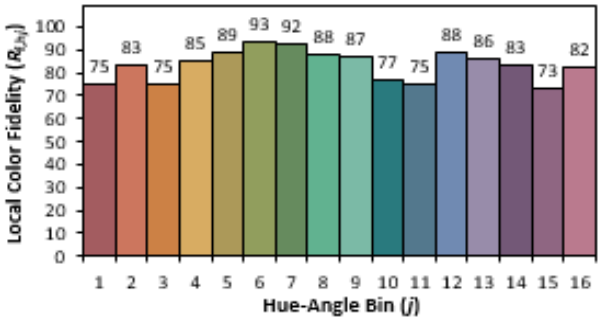
IES TM-30-18 Color Renditon Report

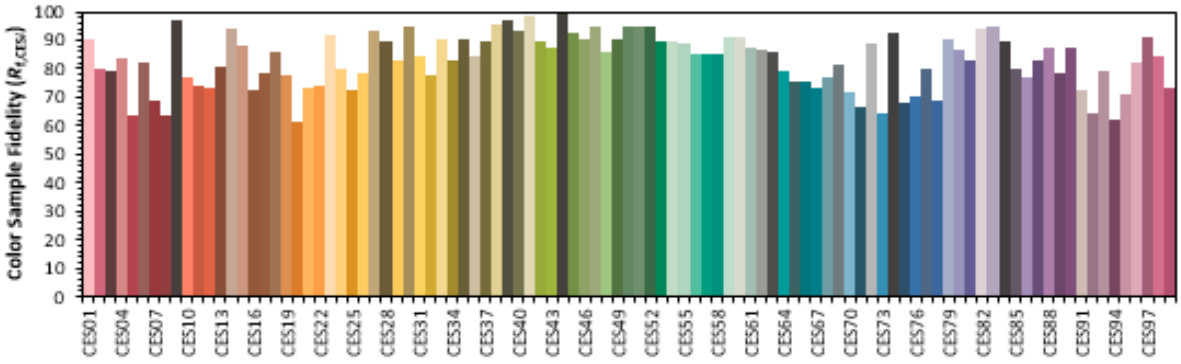












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.3395
y	0.3503
u'	0.2081
v'	0.4832

CIE 13.3-1995
(CRI)

R_a	82
R_9	-1

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L21185.
Dialight unit model number BxA4BCG6xxxxxx

Electrical Measurements:

Input Voltage:	240.1	(VAC)
Input current:	0.21	(A)
Input Power:	49.66	(W)
Power Factor:	0.9642	

Photometric measurements:

Absolute Luminous Flux:	6288.3	(lumens)
Luminous Efficacy:	126.6	(lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	2676	2683	2687	2692	2676	
5.00	2677	2678	2675	2685	2676	272
15.00	2688	2661	2655	2667	2678	758
25.00	2675	2639	2634	2638	2652	1228
35.00	2582	2552	2541	2553	2553	1608
45.00	2088	2140	2149	2209	2124	1649
55.00	489	544	619	731	567	508
65.00	119	171	211	211	127	150
75.00	52	69	80	80	56	66
85.00	4	9	13	13	4	4
90.00	0	2	3	3	0	

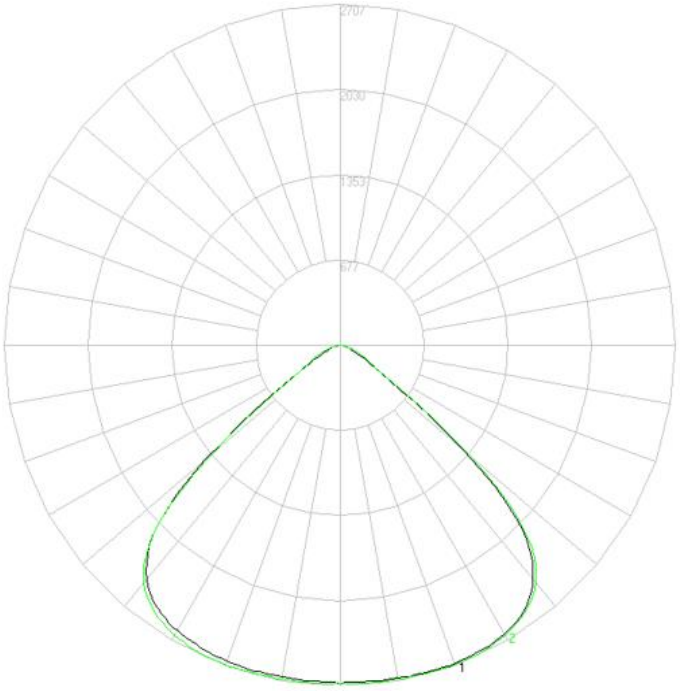
Zonal Lumen Summary

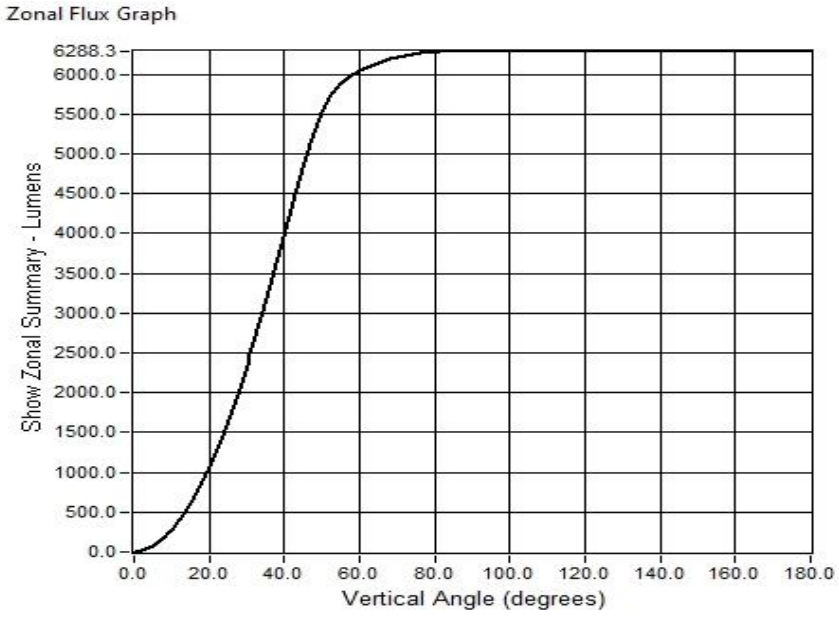
Zone	Lumens	% Lamp	% Fixture
0 to 30	2259.51	35.93	35.93
0 to 40	3874.06	61.61	61.61
0 to 60	6028.79	95.87	95.87
0 to 90	6288.31	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	6288.31	100.00	100.00

Test Results: Goniometer

Results continued from previous page.

Polar Plot:

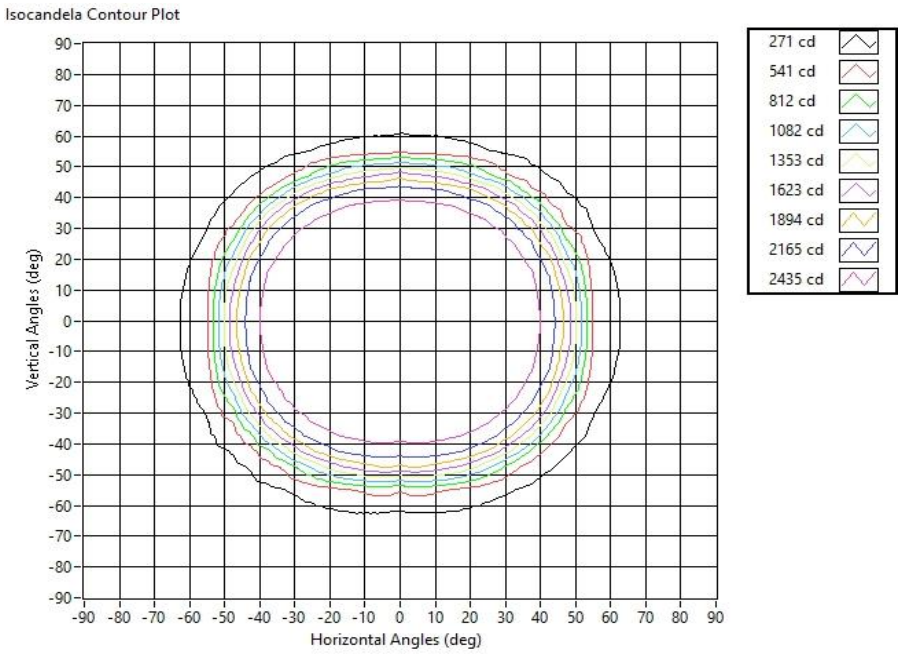




Test Results: Goniometer

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	4.75	4.92	671.6
4	9.51	9.85	167.9
6	14.26	14.77	74.6
8	19.02	19.70	42.0
10	23.77	24.62	26.9
12	28.53	29.55	18.7
14	33.28	34.47	13.7
16	38.04	39.39	10.5
18	42.79	44.32	8.3
20	47.55	49.24	6.7

Test Results: In Situ Temperature Measurement Test

Results include maximum LED chip temperature for sample number L21185.
Dialight unit model number BxA4BCG6xxxxxx

LED identified as Seoul part number STW8C12C-E0.

LED drive current (as indicated by customer):	125	(mA)

LED Specifications:

LED specifications are taken from LED manufacturer datasheet:

Maximum Forward Current (If):	200	(mA)
Maximum Rated Power Dissipation:	0.6	(W)
Maximum Junction Temp. (Tj):	125	(°C)
Thermal Resistance (Rth):	7.5	(°C/W)

Derived Specifications:

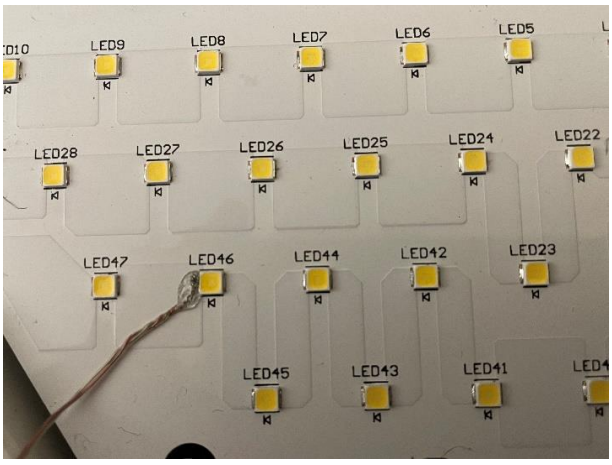
Maximum Power at Indicated Current:	0.375	(W)
Maximum Source Temperature:	122.1875	(°C)

Test Conditions:

Temperature Measurement Location:	See Photographs Below	
Ambient Temperature:	25° ± 5°	(°C)
Ambient temperature at time of measurement:	23.8	(°C)
Relative humidity at time of measurement:	28%	

Results:

Measured LED source temperature:	43.8	(°C)





Equipment Used:

Equipment Name	Model Number
Omega TC	DPi8
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
Omega Thermocouple	5TC-TT-K
Fluke 971 Humidity Meter	971
GwINSTEK DC Power Supply	GEP172679
Dialight Confirmation Sample	
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	XT2640
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
Xitron Power Analyzer	XT2640
LPS-525 DC Power Supply	LPS-525
Omega Temperature Controller	DP41-RTD-A
YOKOGAWA Digital Power Meter	WT310E

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

Test Report Issued By:

Kevin Rosseter
Dialight Optics Laboratory
Optics Lab Technician

Test Report Reviewed and Approved By:

Callan McCormick
Dialight Optics Laboratory
Optics Lab Engineer
Approved Signatory