Test Report

Report Number: L21190 Date: Feb 17, 2022

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

Test of one BH Z1 CL W WW 6klm 230V
Unit manufacturer: Dialight Corporation
Unit model number: BxA4UWG6xxxxxx

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: February 15, 2022 through February 16, 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: L21190
Manufacturer: Dialight Corporation
Product Name: SafeSite Bulkhead
Description: BH Z1 CL W WW 6klm 230V
Model Number: BxA4UWG6xxxxxx

Report Summary

Sample number L21190
Dialight unit model number BxA4UWG6xxxxxx

Photograph(s) of sample:

*Photographs not to scale. For reference only.

Summary of Results:

	Integrating Sphere		Goniophotometer	
Luminous Flux:	5733	(lumens)	5691	(lumens)
Electrical Power:	49.2	(W)	49.2	(W)
Luminous Efficacy:	116.5	(lumens/W)	115.7	(lumens/W)

Electrical Measurements:

Input Power (240VAC):	49.2	(W)
Power Factor (240VAC):	0.9646	
Current ATHD % (240VAC):	21.76	
Input Power (120VAC):	49.8	(W)
Power Factor (120VAC):	0.9845	
Current ATHD % (120VAC):	16.27	

Color Measurements:

Correlated Color Temperature (CCT):	2958
Color Rendering Index (CRI):	82.76
Chromaticity Coordinate (x):	0.441
Chromaticity Coordinate (y):	0.407
Chromaticity Coordinate (u'):	0.252
Chromaticity Coordinate (v'):	0.523
DUV:	0.0005

Temperature Measurements:

In Situ LED Source Temperature:	45.1	(°C)

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21190.

Dialight unit model number BxA4UWG6xxxxxx

Test Conditions:

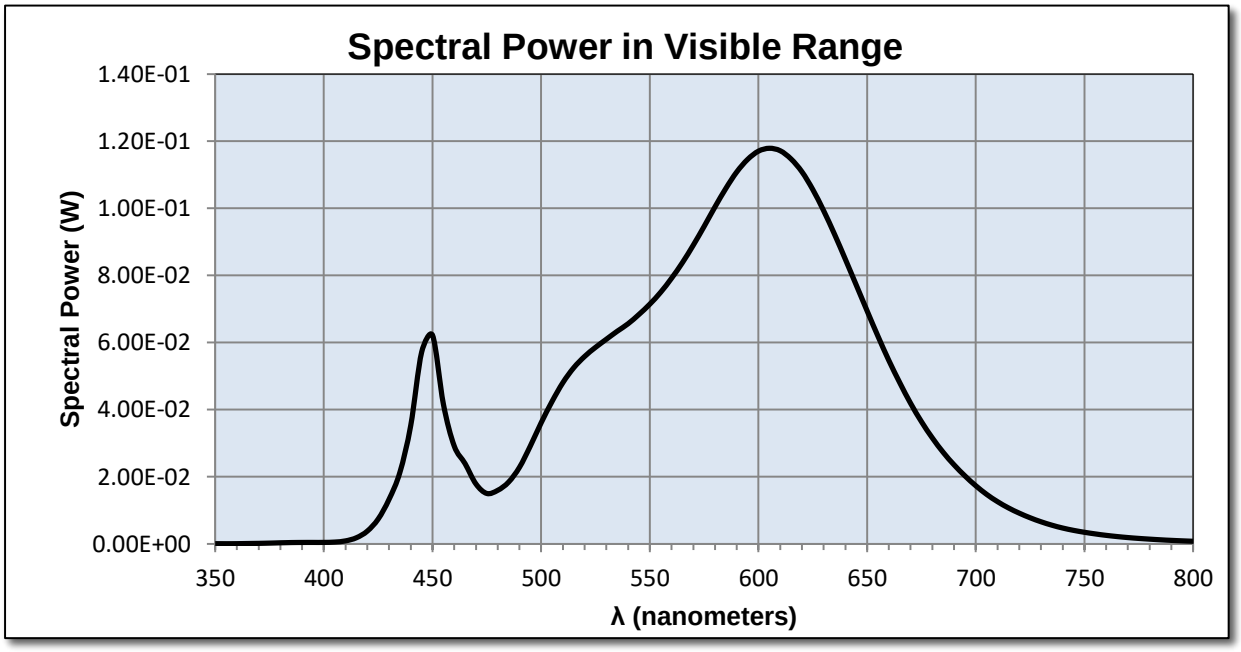
Ambient Temperature:	25 ± 1.2	(°C)

Electrical Measurements:

Input Voltage:	240.0	(VAC)
Input Current:	0.213	(A)
Input Power:	49.2	(W)
Input Power Factor:	0.9646	
Current ATHD:	21.76	(%)

Photometric measurements:

Luminous Flux:	5733.2	(lumens)
Luminous Efficacy:	116.5	(lumens/W)
Correlated Color Temperature (CCT):	2958	(K)
CRI -Ra:	82.76	
CRI -R9:	7.69	
DUV:	0.0005	
CIE Coordinate (x):	0.441	
CIE Coordinate (y):	0.407	
CIE Coordinate (u'):	0.252	
CIE Coordinate (v'):	0.523	
TM30_Rf:	84.2	
TM30_Rg:	97.9	
TM30_Rcs_hue1:	-10.91	%



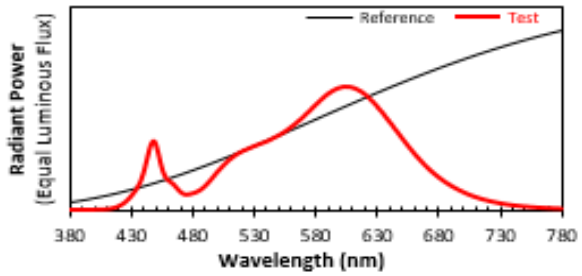
Test Results: Integrating Sphere

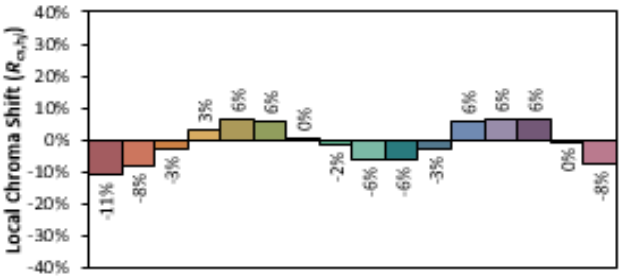
Results continued from previous page.

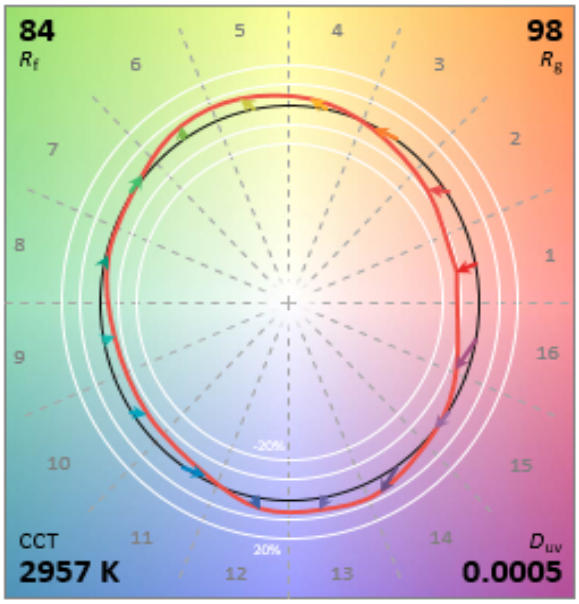
Tabulated Spectral Power in Visible Range:

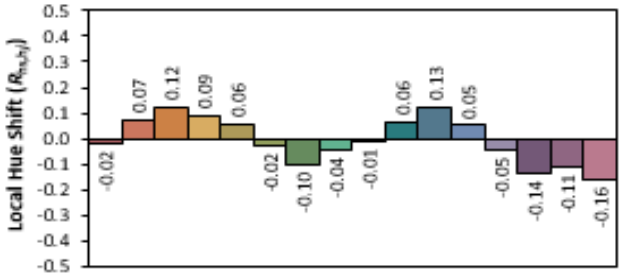
λ(nm)	(W/nm)	λ(nm)	(W/nm)	λ(nm)	(W/nm)	λ(nm)	(W/nm)
350	0.00007	490	0.02281	630	0.09928	770	0.00189
355	0.00006	495	0.02915	635	0.09228	775	0.00164
360	0.00007	500	0.03610	640	0.08478	780	0.00142
365	0.00012	505	0.04243	645	0.07713	785	0.00122
370	0.00017	510	0.04807	650	0.06943	790	0.00105
375	0.00024	515	0.05250	655	0.06186	795	0.00092
380	0.00033	520	0.05587	660	0.05467	800	0.00079
385	0.00040	525	0.05857	665	0.04806		
390	0.00043	530	0.06099	670	0.04190		
395	0.00044	535	0.06338	675	0.03643		
400	0.00045	540	0.06561	680	0.03159		
405	0.00055	545	0.06838	685	0.02729		
410	0.00090	550	0.07145	690	0.02357		
415	0.00184	555	0.07500	695	0.02027		
420	0.00381	560	0.07916	700	0.01734		
425	0.00742	565	0.08382	705	0.01477		
430	0.01328	570	0.08903	710	0.01259		
435	0.02135	575	0.09463	715	0.01074		
440	0.03535	580	0.10044	720	0.00917		
445	0.05715	585	0.10596	725	0.00780		
450	0.06219	590	0.11084	730	0.00660		
455	0.04167	595	0.11458	735	0.00558		
460	0.02916	600	0.11705	740	0.00473		
465	0.02391	605	0.11790	745	0.00404		
470	0.01786	610	0.11717	750	0.00347		
475	0.01503	615	0.11471	755	0.00298		
480	0.01596	620	0.11089	760	0.00255		
485	0.01841	625	0.10560	765	0.00219		

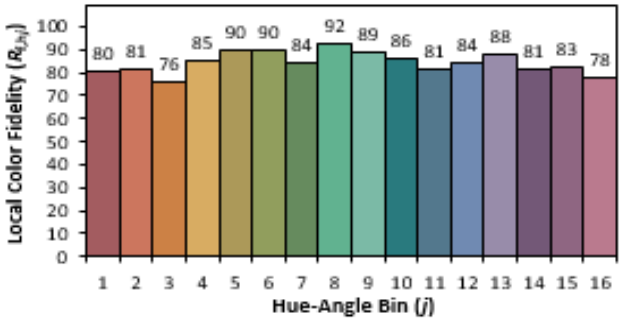
IES TM-30-18 Color Renditon Report

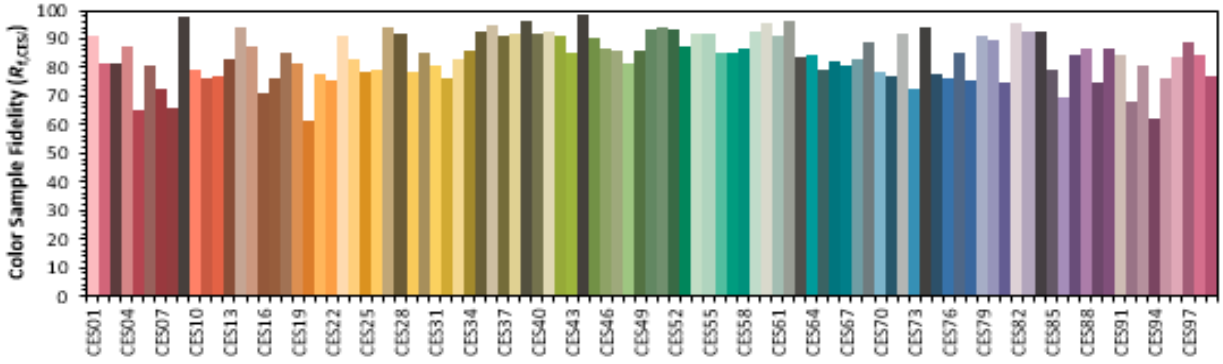












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.4408
y	0.4067
u'	0.2519
v'	0.5230

CIE 13.3-1995 (CRI)

R_a	83
R_9	8

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L21190.
Dialight unit model number BxA4UWG6xxxxxx

Electrical Measurements:

Input Voltage:	240.1	(VAC)
Input current:	0.21	(A)
Input Power:	49.18	(W)
Power Factor:	0.9644	

Photometric measurements:

Absolute Luminous Flux:	5691.3	(lumens)
Luminous Efficacy:	115.7	(lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	1512	1521	1540	1556	1512	
5.00	1627	1603	1544	1479	1396	154
15.00	1744	1736	1604	1348	1127	420
25.00	1529	1706	1687	1255	875	617
35.00	1013	1556	1827	1165	679	689
45.00	672	1290	2072	1007	601	731
55.00	482	835	2588	778	569	766
65.00	191	361	3921	400	188	698
75.00	68	156	1335	159	58	260
85.00	8	31	79	31	4	13
90.00	0	5	17	5	0	

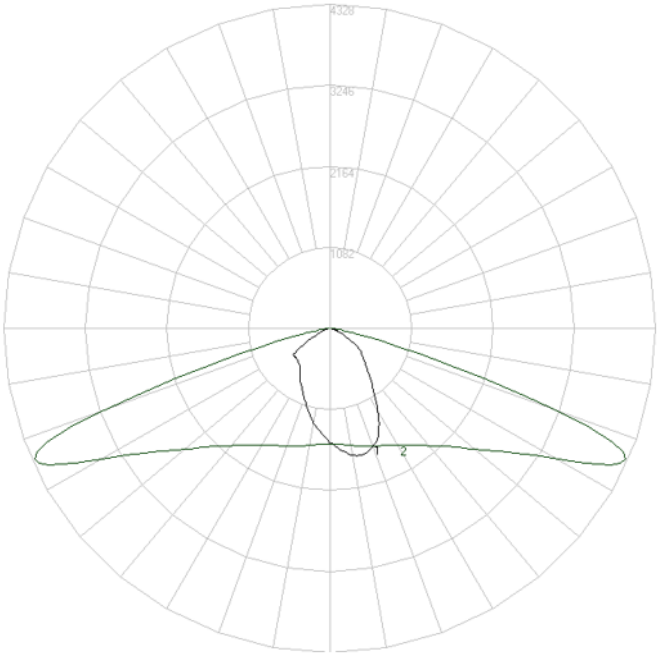
Zonal Lumen Summary

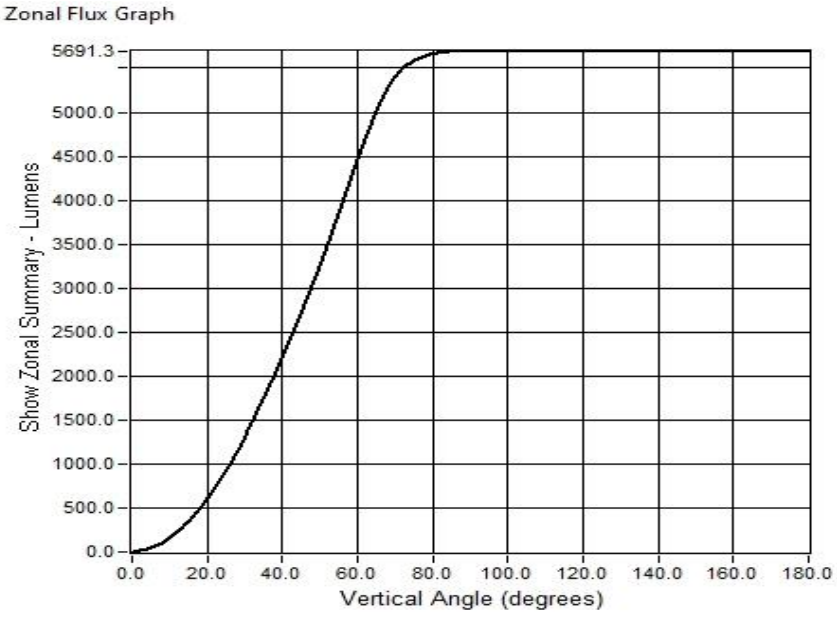
Zone	Lumens	% Lamp	% Fixture
0 to 30	1267.72	22.27	22.27
0 to 40	2142.68	37.65	37.65
0 to 60	4395.47	77.23	77.23
0 to 90	5691.29	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	5691.29	100.00	100.00

Test Results: Goniometer

Results continued from previous page.

Polar Plot:

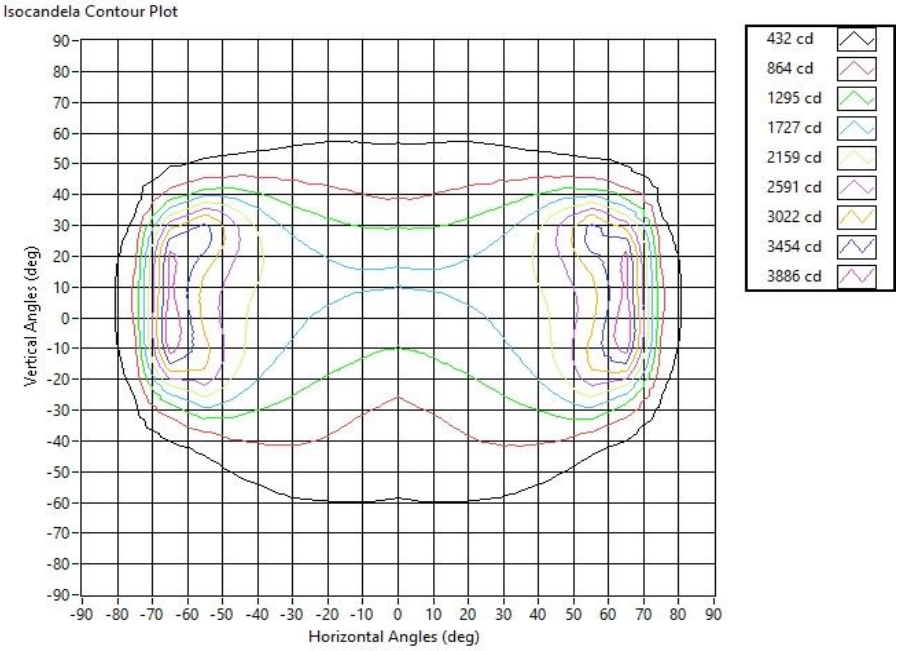




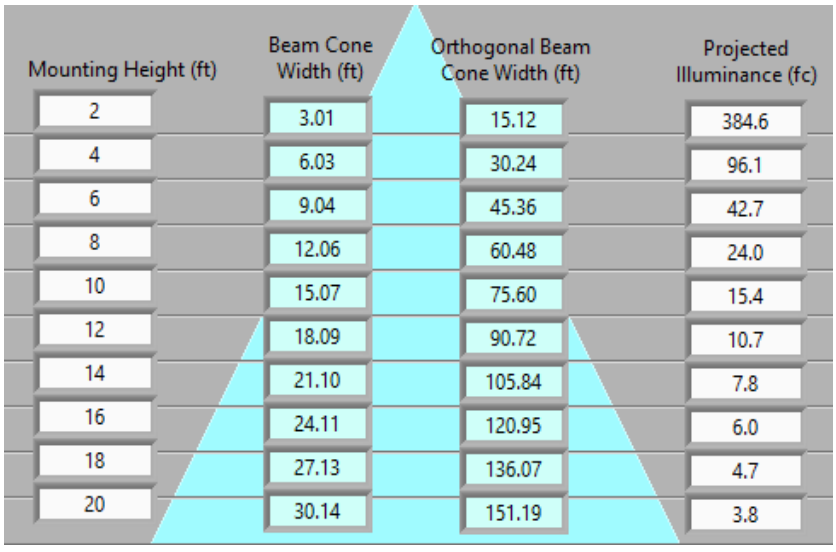
Test Results: Goniometer

Results continued from previous page.

Illuminance Plot:



Illuminance-Cone of Light:



Test Results: In Situ Temperature Measurement Test

Results include maximum LED chip temperature for sample number L21190.
Dialight unit model number BxA4UWG6xxxxxx

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:

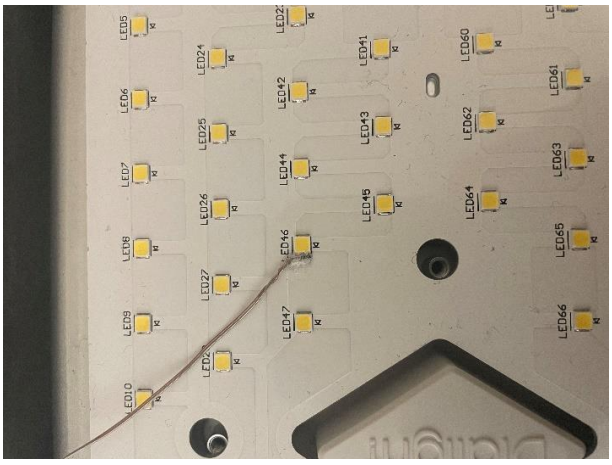
Maximum Power at Indicated Current:	0.375	(W)
Maximum Source Temperature:	122.1875	(°C)

Test Conditions:

Temperature Measurement Location:	See Photographs Below	
Ambient Temperature:	25° ± 5°	(°C)
Ambient temperature at time of measurement:	23.5	(°C)
Relative humidity at time of measurement:	22%	

Results:

Measured LED source temperature:	45.1	(°C)



Equipment Used:

Equipment Name	Model Number
Omega TC	DPi8
Omega Temperature Controller	DP41-RTD-A
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	
Omega TC	TC-08
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.

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