



8165 E Kaiser Blvd. Anaheim, CA 92808
www.lightlaboratory.com

Report No: L052111418



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Issue Date: 7/20/2021

Report Prepared For: Blizzard Lighting LLC
N24W23750 Watertown Rd suite b, Waukesha, WI 53188

Model Number: ToughPAR™ Quadra

Test: Photometric/Electrical Test

Standards Used: Appropriate part or all test guidelines were used for test performed:
IESNA LM79: 2019 Approved Methods for Electrical and Photometric Measurements of Solid-State Lighting Products
ANSI NEMA ANSLG C78.377: 2017 Specification of the Chromaticity of Solid State Lighting Products
ANSI C82.77-10:2014: Harmonic Emission Limits-Related Quality Requirements for Lighting Equipment

Description of Sample: Client submitted the sample. Received in working and undamaged condition. No modifications were necessary.

Special Test Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 7/8/21

Date of Tests: 7/15/21 - 7/20/21

Seasoning of Sample: No seasoning was performed in accordance with IESNA LM-79.

Equipment List

Equipment Used	Model No	Stock No	Calibration Due Date
Chroma Programmable AC Source	61604	PS-AC02	--
Yokogawa Digital Power Meter	WT210	MT-EL06-S4	4/7/23
HP Power Supply	6032A	PS-DC05-S2	--
Fluke Digital Thermometer	52K/J	MT-TP05	3/17/23
LLI Type C Goniophotometer System	RMG-C-MKII	CD-LL04-GC	--
LLI 2M Sphere	2MR97	CD-SN03-S2	--
LLI Spectroradiometer	SPR-3000	MT-SC01-S2	Before Use

General Information

Manufacturer:	Blizzard Lighting LLC
Model Number:	ToughPAR™ Quadra
Driver Model Number:	CUSTOM DRIVER

Photometric & Electrical Test Results

Total Lumens:	3100.62
Efficacy:	38.70
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	1.2833
Input Power (W):	80.12
Input Power Factor:	0.5202
Current ATHD (%):	84.0%

Test Condition

Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:55
Total Operating Time (Hours):	1:30



FIG. 1 LUMINAIRE

Test Methods

Photometric Measurements - Goniophotometer

A Custom Light Laboratory Type C Rotating Mirror Goniophotometer was used to measure candelas(intensity) at each angle of distribution as defined by IESNA for the appropriate fixture type.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Spectral Measurements - Integrating Sphere

A Sensing Spectroradiometer SPR-3000, in conjunction with Light Laboratory 2 meter integrating sphere was used to measure chromaticity coordinates, correlated color temperature(CCT) and the color rendering index(CRI) for each sample.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Disclaimers:

The results related only to the samples as received and tested. This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the Federal Government.

Report Prepared by : Keyur Patel

Test Report Reviewed by:



Steve Kang
Quality Assurance

**Attached are photometric data reports. Total number of pages: 7*



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Photometric Test Report

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L052111418.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L052111418
 [TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
 [ISSUEDATE] 7/20/2021
 [MANUFAC] Blizzard Lighting LLC
 [LUMCAT] ToughPAR™ Quadra
 [LUMINAIRE] 18x 10W 4-in-1 RGBW LEDs, IP65
 [BALLASTCAT] CUSTOM DRIVER
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
 [INPUT] 120.0VAC, 80.12W
 [TEST PROCEDURE] IESNA:LM-79-08

Note: Candela values converted from Type-C to Type-B

CHARACTERISTICS

NEMA Type	3 H x 3 V
Maximum Candela	30218
Maximum Candela Angle	0H 0V
Horizontal Beam Angle (50%)	15.7
Vertical Beam Angle (50%)	15.7
Horizontal Field Angle (10%)	29.3
Vertical Field Angle (10%)	29.3
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	1215
Beam Efficiency	N.A.
Field Lumens	2343
Field Efficiency	N.A.
Spill Lumens	758
Luminaire Lumens	3101
Total Efficiency	N.A.
Total Luminaire Watts	80.12
Ballast Factor	1.00

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L052111418.IES

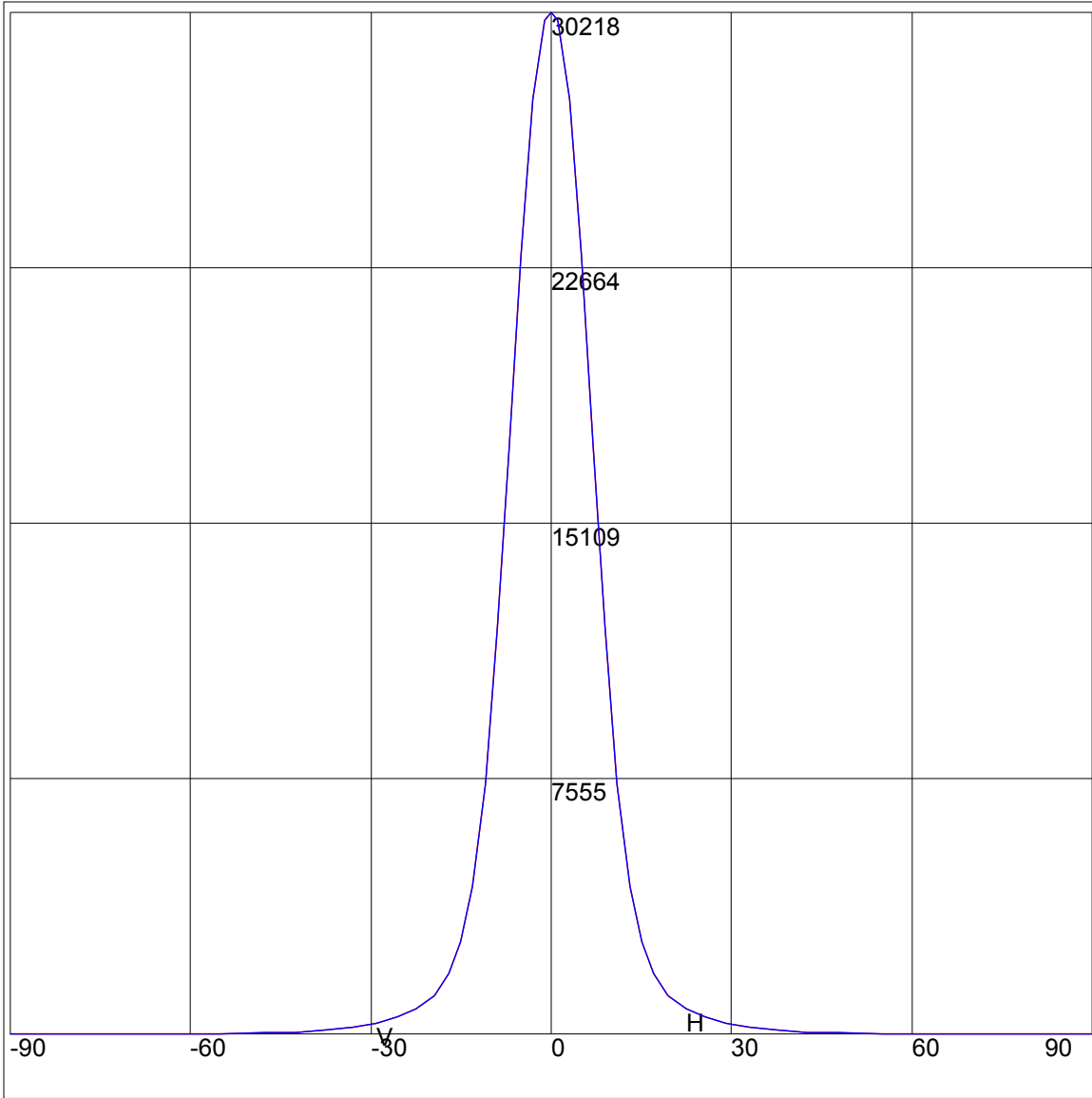
AXIAL CANDELA

DEG.	HOR.	DEG.	VERT.
90	0	90	0
85	7	85	7
75	9	75	9
65	18	65	18
55	28	55	28
47.5	47	47.5	47
42.5	72	42.5	72
37.5	116	37.5	116
33	203	33	203
29	330	29	330
25.5	513	25.5	513
22.5	758	22.5	758
19.5	1154	19.5	1154
17	1802	17	1802
15	2749	15	2749
13	4360	13	4360
11	7424	11	7424
9	12053	9	12053
7	17364	7	17364
5	23023	5	23023
3	27649	3	27649
1	29970	1	29970
0	30218	0	30218
-1	29970	-1	29970
-3	27649	-3	27649
-5	23023	-5	23023
-7	17364	-7	17364
-9	12053	-9	12053
-11	7424	-11	7424
-13	4360	-13	4360
-15	2749	-15	2749
-17	1802	-17	1802
-19.5	1154	-19.5	1154
-22.5	758	-22.5	758
-25.5	513	-25.5	513
-29	330	-29	330
-33	203	-33	203
-37.5	116	-37.5	116
-42.5	72	-42.5	72
-47.5	47	-47.5	47
-55	28	-55	28
-65	18	-65	18
-75	9	-75	9
-85	7	-85	7
-90	0	-90	0

ZONAL LUMEN SUMMARY

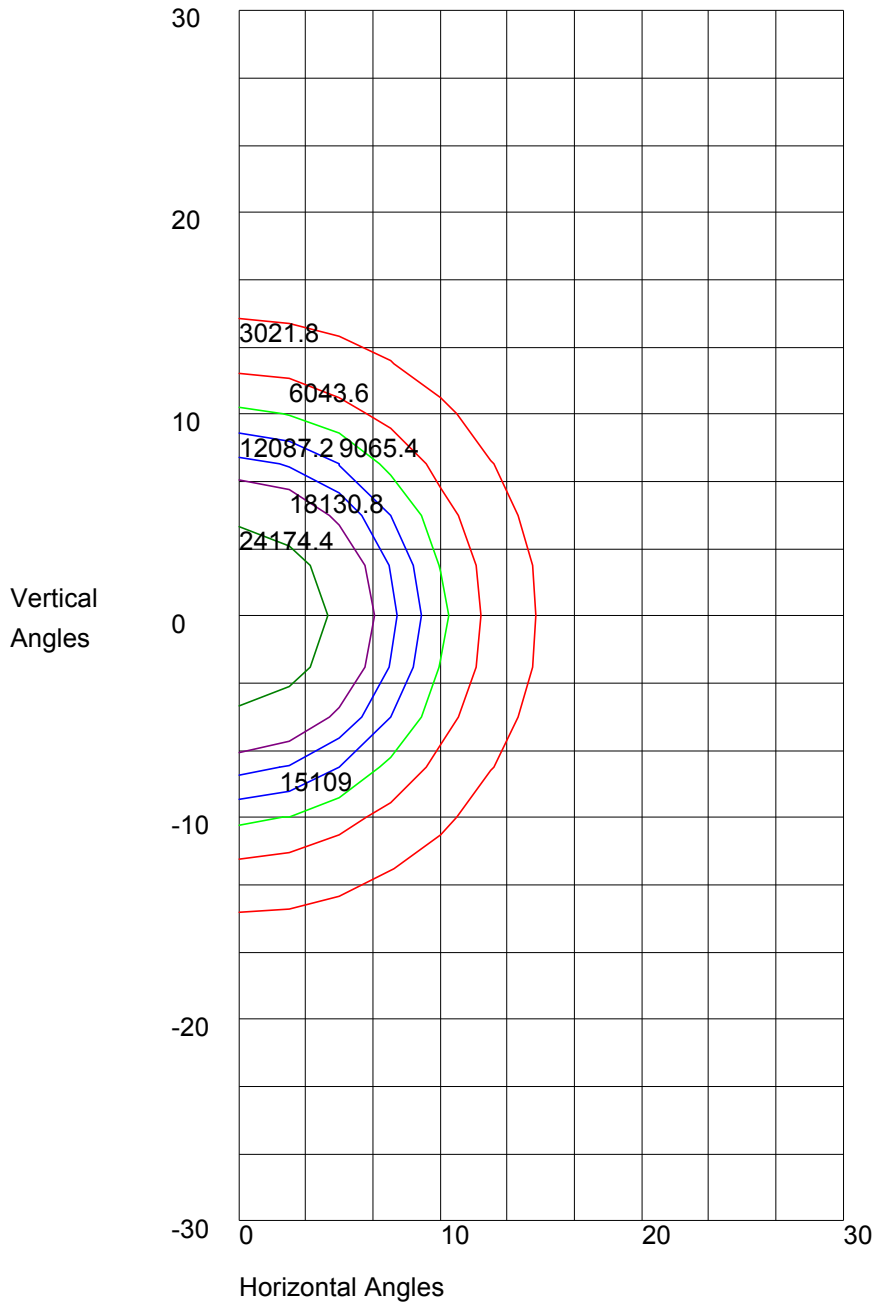
Zone	%
0-20	84.8
0-30	93.3
0-40	96.6
0-60	98.9
0-80	99.8
0-90	100
10-90	43.8
20-40	11.8
20-50	13.3
40-70	2.9
60-80	0.9
70-80	0.3
80-90	0.2
90-110	0
90-120	0
90-130	0
90-150	0
90-180	0
110-180	0
0-180	100

AXIAL CANDELA DISPLAY



Maximum Candela = 30218 Located At Horizontal Angle = 0, Vertical Angle = 0
H - Horizontal Axial Candela
V - Vertical Axial Candela

ISOCANDELA CURVES



Maximum Candela = 30218 Located At Horizontal Angle = 0, Vertical Angle = 0
50% Maximum Candela = 15109
10% Maximum Candela = 3021.8