



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

Report No: L022212402



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Issue Date: 4/22/2022

Report Prepared For: Gantom Lighting & Controls
25060 Avenue Stanford, Suite 115Valencia, CA 91355USA

Model Number: PR16 - Precision Z Spot - WW

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.

Date of Tests: 4/15/22

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:	Gantom Lighting & Controls
Model Number:	PR16 - Precision Z Spot - WW
Driver Model Number:	N/A

Photometric & Electrical Test Results

Total Lumens:	96.61
Efficacy:	74.89
Input Voltage (VDC):	12.00
Input Current (Amp):	0.1075
Input Power (W):	1.29
Input Power Factor:	1.0000
Current ATHD (%):	N/A

Test Condition

Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	1:05



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 : Kunjan Modi

Test Report Reviewed by:



Steve Kang
Quality Assurance

**Attached are photometric data reports.*



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Photometric Test Report

IES INDOOR REPORT

PHOTOMETRIC FILENAME : L022212402.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L022212402
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 4/20/2022
[MANUFAC] Gantom Lighting & Controls
[LUMCAT] PR16 - Precision Z Spot - WW
[LUMINAIRE] PR16 - Precision Z Spot - Warm White
[BALLASTCAT] N/A
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[INPUT] 12VDC
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	97
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	75
Total Luminaire Watts	1.29
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.24
Spacing Criterion (90-270)	0.24
Spacing Criterion (Diagonal)	0.24
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.06 ft (Diameter)
Luminous Width (90-270)	0.06 ft (Diameter)
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	16136	16136	16136
55	13262	13262	13262
65	9000	9000	9000
75	14695	14695	14695
85	0	0	0

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	85.05	N.A.	88.00
0-30	88.44	N.A.	91.50
0-40	90.96	N.A.	94.20
0-60	94.83	N.A.	98.20
0-80	96.61	N.A.	100.00
0-90	96.61	N.A.	100.00
10-90	31.46	N.A.	32.60
20-40	5.90	N.A.	6.10
20-50	8.21	N.A.	8.50
40-70	4.86	N.A.	5.00
60-80	1.78	N.A.	1.80
70-80	0.79	N.A.	0.80
80-90	0.00	N.A.	0.00
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	96.61	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	65.15
10-20	19.91
20-30	3.39
30-40	2.51
40-50	2.31
50-60	1.56
60-70	0.99
70-80	0.79
80-90	0.00
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	115	113	111	110	113	111	109	108	107	106	105	103	102	102	100	99	99	97
2	112	108	106	103	110	107	104	102	104	102	100	101	99	98	98	97	96	95
3	109	105	101	99	107	103	100	98	101	99	97	99	97	95	97	95	94	93
4	106	102	98	96	105	101	97	95	99	96	94	97	95	93	95	93	92	91
5	104	99	95	93	103	98	95	92	97	94	92	95	93	91	94	92	90	89
6	102	97	93	91	101	96	93	90	95	92	90	94	91	89	93	90	89	88
7	100	95	91	89	99	94	91	89	93	90	88	92	90	88	91	89	88	87
8	98	93	90	87	98	93	90	87	92	89	87	91	89	87	90	88	86	86
9	97	92	88	86	96	91	88	86	91	88	86	90	87	86	89	87	85	85
10	95	90	87	85	95	90	87	85	89	87	85	89	86	85	88	86	84	84

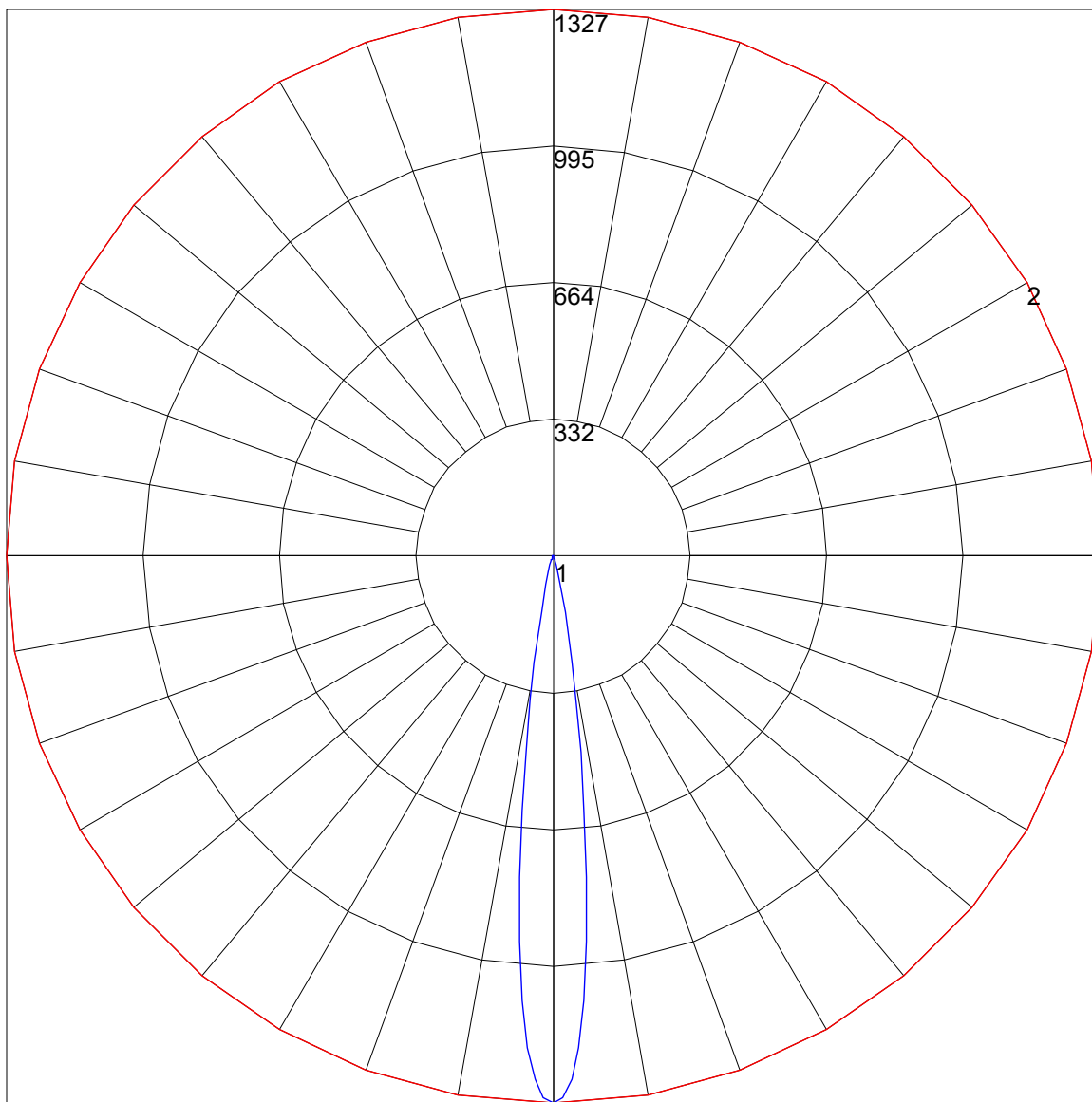
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UGR TABLE - CORRECTED

Reflectances											
Ceiling Cavity	70	70	50	50	30	70	70	50	50	30	
Walls	50	30	50	30	30	50	30	50	30	30	
Floor Cavity	20	20	20	20	20	20	20	20	20	20	
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	12.0	13.0	12.4	13.3	13.6	12.0	13.0	12.4	13.3	13.6
	3H	14.1	14.9	14.5	15.3	15.6	14.1	14.9	14.5	15.3	15.6
	4H	15.5	16.3	15.9	16.6	17.0	15.5	16.3	15.9	16.6	17.0
	6H	15.7	16.4	16.1	16.8	17.2	15.7	16.4	16.1	16.8	17.2
	8H	15.6	16.3	16.1	16.7	17.1	15.6	16.3	16.1	16.7	17.1
	12H	15.6	16.2	16.0	16.6	17.0	15.6	16.2	16.0	16.6	17.0
4H	2H	12.4	13.2	12.8	13.6	14.0	12.4	13.2	12.8	13.6	14.0
	3H	14.9	15.6	15.3	16.0	16.4	14.9	15.6	15.3	16.0	16.4
	4H	16.5	17.1	17.0	17.6	18.0	16.5	17.1	17.0	17.6	18.0
	6H	16.7	17.2	17.2	17.7	18.2	16.7	17.2	17.2	17.7	18.2
	8H	16.7	17.1	17.2	17.6	18.0	16.7	17.1	17.2	17.6	18.0
	12H	16.6	17.0	17.1	17.5	18.0	16.6	17.0	17.1	17.5	18.0
8H	4H	16.9	17.3	17.3	17.8	18.2	16.9	17.3	17.3	17.8	18.2
	6H	17.0	17.4	17.5	17.9	18.3	17.0	17.4	17.5	17.9	18.3
	8H	16.9	17.2	17.4	17.8	18.3	16.9	17.2	17.4	17.8	18.3
	12H	16.9	17.1	17.4	17.6	18.2	16.9	17.1	17.4	17.6	18.2
12H	4H	16.8	17.2	17.3	17.7	18.2	16.8	17.2	17.3	17.7	18.2
	6H	16.9	17.3	17.5	17.7	18.3	16.9	17.3	17.5	17.7	18.3
	8H	16.9	17.2	17.4	17.7	18.2	16.9	17.2	17.4	17.7	18.2

Maximum UGR = 18.3

POLAR GRAPH



Maximum Candela = 1327 Located At Horizontal Angle = 0, Vertical Angle = 0
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)