UL Verification Services Inc.
7036 Snowdrift Road
Allentown, PA 18106
610-774-1300

IAS ACCREDITED Testing Laboratory

NVLAP TESTING NVLAP LAB CODE 201042-0

Photometric Test Report

Relevant Standards
IES LM-79-2008, ANSI C82.77-10-2014, CIE 13.3-1995 CIE 15-2004,
ANSI C78.377-2017, IES TM-30-2018

Prepared For

Vokslyte

8020 Queenair Dr
Gaithersburg, MD 20879-4173
United States

Catalog Number

Tangent Down Remote 3000K

Order Number
13939071
Test Number
13939071.03

Test Date

2021-08-02

Prepared By

Cordaryl Cousar, Technician

Approved By

Alexa Lambert, Project Handler

Table of Contents

Laboratory results may not be representative of field performance
Ballast factors have not been applied

Testing was performed in a 2-meter integrating sphere using the 4π geometry method.

Absorption correction was employed for Sphere measurement

Luminaire Description: Cast aluminum housing, frosted film lens enclosure
Lamp: 36 white LEDs
Mounting: Recessed
Ballast/Driver: Integral

Luminaire

Luminaire Characteristics

Luminous Length:	12.00	in.
Luminous Width:	1.500	in.

Summary of Results

Integrating Sphere

Luminous Flux:	453.9	Lumens
Efficacy:	62.62	lm/w
CCT:	3004	K
CRI (Ra):	92.1	

Distribution

Total Luminaire Output:	438.0 Lumens
Luminaire Efficacy:	61.4 lm/w
Maximum Candela:	192 Candela

Electrical Data at 24 VDC

Test Temperature:	24.4	°C
Voltage:	24.00	VDC
Current:	0.3020	A
Power:	7.248	W

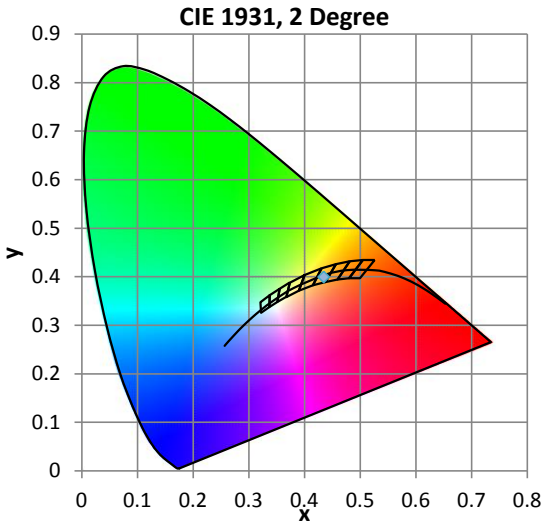
Color Quality - Integrating Sphere

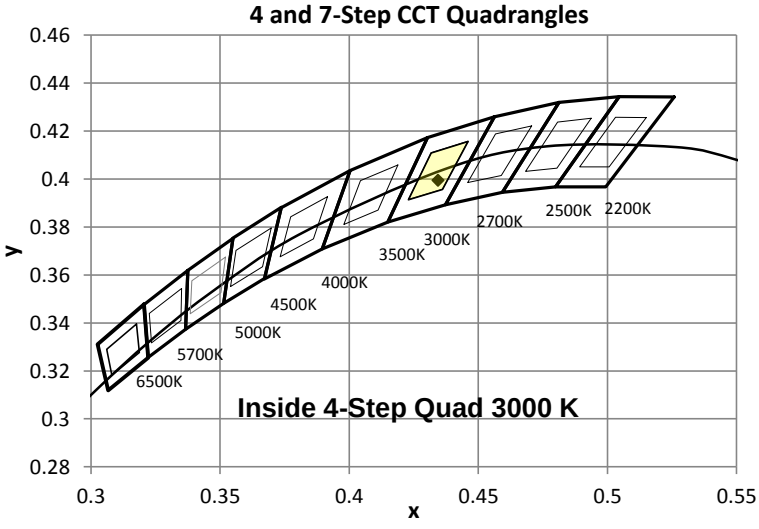
Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.4 °C	24.00 VDC	0.3020 A	7.248 W	N/A	N/A	N/A

Summary of Results

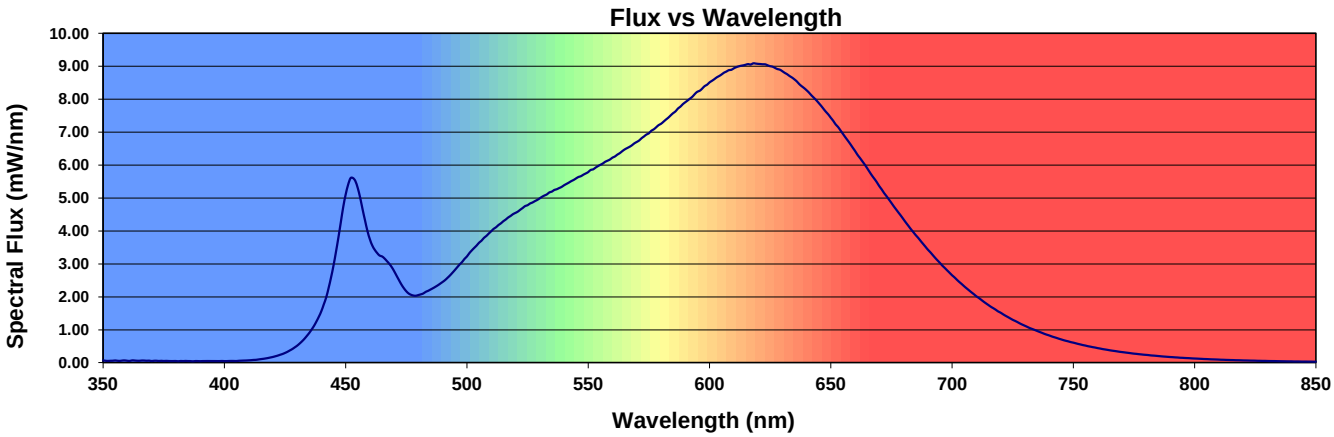
Total Output:	454	Lumens	**Chromaticity (x):**	0.4344
Efficacy:	62.6	lm/w	**Chromaticity (y):**	0.3995
CCT:	3004	K	**Chromaticity (u'):**	0.2509
CRI (Ra):	92.1		**Chromaticity (v'):**	0.5192
CRI (R9):	56.5		**TM-30 Rf:**	91
Peak Wavelength:	619	nm	**TM-30 Rg:**	99
Dominant Wavelength:	583	nm	**TM-30 Rcs,h1:**	-5%
S/P Ratio:	1.42		**Duv:**	-0.0015
M/P Ratio:	0.55	WELL Building Standard v2		





Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
92.1	92.5	96.5	98.0	91.7	92.1	95.0	90.9	80.3	56.5	90.6	92.3	79.2	93.8	98.6	88.8



Distribution - Goniophotometer

Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.0 °C	24.00 VDC	0.2970 A	7.128 W	N/A	N/A	N/A

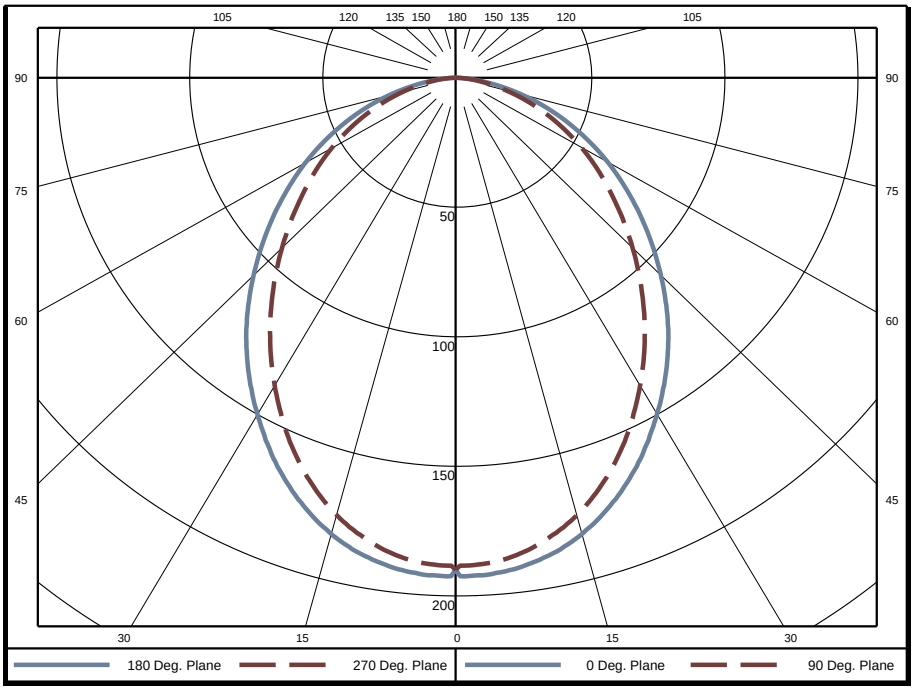
Summary of Results

Spacing Criteria
0-180: 1.17
90-270: 1.09

Total Lumen Output: 438.0 Lumens
Luminaire Efficacy: 61.4 lm/w
Maximum Candela: 192 Candela

Corrected UGR (Room Dimension: X=4H, Y=8H, Reflectances: 70/50/20%, S/H: 1)
Crosswise: 24.3 **Endwise:** 23.2

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	4.53	1.0%	60-65	25.61	5.8%	120-125	0	0.0%
5-10	13.37	3.1%	65-70	20.40	4.7%	125-130	0	0.0%
10-15	21.52	4.9%	70-75	14.86	3.4%	130-135	0	0.0%
15-20	28.52	6.5%	75-80	9.41	2.1%	135-140	0	0.0%
20-25	34.03	7.8%	80-85	4.70	1.1%	140-145	0	0.0%
25-30	37.82	8.6%	85-90	1.28	0.3%	145-150	0	0.0%
30-35	40.00	9.1%	90-95	0	0.0%	150-155	0	0.0%
35-40	40.56	9.3%	95-100	0	0.0%	155-160	0	0.0%
40-45	39.60	9.0%	100-105	0	0.0%	160-165	0	0.0%
45-50	37.34	8.5%	105-110	0	0.0%	165-170	0	0.0%
50-55	34.15	7.8%	110-115	0	0.0%	170-175	0	0.0%
55-60	30.25	6.9%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	220	50.3%
0-60	362	82.6%
0-90	438	100.0%
90-180	0	0.0%

Candela Tabulation

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5
0	189.9	189.9	189.9	189.9	189.9	189.9	189.9	189.9	189.9	189.9	189.9	189.9	189.9	189.9	189.9	189.9
5	191.6	190.8	188.1	187.7	187.1	187.7	188.1	190.8	191.6	190.8	188.1	187.7	187.1	187.7	188.1	190.8
10	188.1	187.0	183.9	183.0	182.3	183.0	183.9	187.0	188.1	187.0	183.9	183.0	182.3	183.0	183.9	187.0
15	181.9	180.7	177.1	175.5	174.5	175.5	177.1	180.7	181.9	180.7	177.1	175.5	174.5	175.5	177.1	180.7
20	173.0	171.5	167.5	165.3	163.9	165.3	167.5	171.5	173.0	171.5	167.5	165.3	163.9	165.3	167.5	171.5
25	161.9	160.2	155.6	152.8	151.1	152.8	155.6	160.2	161.9	160.2	155.6	152.8	151.1	152.8	155.6	160.2
30	149.0	147.4	142.3	138.8	136.8	138.8	142.3	147.4	149.0	147.4	142.3	138.8	136.8	138.8	142.3	147.4
35	135.9	133.9	128.6	124.2	122.1	124.2	128.6	133.9	135.9	133.9	128.6	124.2	122.1	124.2	128.6	133.9
40	121.8	119.8	114.0	109.4	107.2	109.4	114.0	119.8	121.8	119.8	114.0	109.4	107.2	109.4	114.0	119.8
45	107.0	105.0	99.3	94.5	92.6	94.5	99.3	105.0	107.0	105.0	99.3	94.5	92.6	94.5	99.3	105.0
50	92.4	90.5	85.1	80.4	78.8	80.4	85.1	90.5	92.4	90.5	85.1	80.4	78.8	80.4	85.1	90.5
55	78.2	76.7	71.6	67.5	66.0	67.5	71.6	76.7	78.2	76.7	71.6	67.5	66.0	67.5	71.6	76.7
60	64.7	63.3	58.7	55.1	53.8	55.1	58.7	63.3	64.7	63.3	58.7	55.1	53.8	55.1	58.7	63.3
65	51.1	50.1	46.1	43.0	41.9	43.0	46.1	50.1	51.1	50.1	46.1	43.0	41.9	43.0	46.1	50.1
70	38.1	37.2	34.0	31.5	30.6	31.5	34.0	37.2	38.1	37.2	34.0	31.5	30.6	31.5	34.0	37.2
75	25.6	25.1	22.6	20.7	20.1	20.7	22.6	25.1	25.6	25.1	22.6	20.7	20.1	20.7	22.6	25.1
80	14.3	14.1	12.6	11.5	11.2	11.5	12.6	14.1	14.3	14.1	12.6	11.5	11.2	11.5	12.6	14.1
85	5.4	5.5	5.0	4.7	4.6	4.7	5.0	5.5	5.4	5.5	5.0	4.7	4.6	4.7	5.0	5.5
90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
105	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
125	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Average Luminance (cd/m^2)

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	45	90
0	16350	16350	16350
45	13040	12090	11280
55	11740	10750	9905
65	10420	9387	8543
75	8518	7513	6701
85	5326	4986	4544

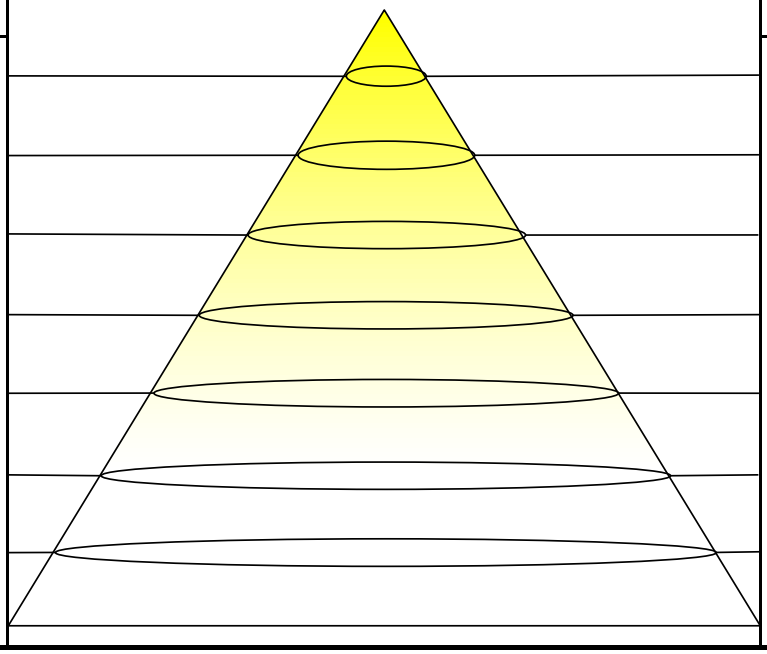
Coefficients of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance 20%																		
Ceiling Cavity Reflectance	80				70				50			30			10			0
Wall Reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)	** Values are expressed as percent of total lumen output delivered to the task surface **																	
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	105	101	97	107	103	99	96	99	96	93	95	92	90	91	89	87	85
2	100	92	86	80	98	90	85	80	87	82	78	84	80	76	81	77	74	72
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62
4	84	73	65	58	82	72	64	58	69	62	57	67	61	56	65	60	55	53
5	78	66	57	51	76	64	56	50	62	55	50	60	54	49	59	53	49	47
6	72	59	51	44	70	58	50	44	57	49	44	55	48	44	53	48	43	41
7	67	54	46	40	65	53	45	39	52	44	39	50	44	39	49	43	39	37
8	63	49	41	36	61	49	41	35	47	40	35	46	40	35	45	39	35	33
9	59	46	38	32	57	45	37	32	44	37	32	43	36	32	42	36	32	30
10	55	42	34	29	54	42	34	29	41	34	29	40	33	29	39	33	29	27

Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	189.9 Candela
Central Cone Intensity:	190 Candela
Beam Flux:	273.0 Lumens
Beam Angle (0-180):	98.2 Degrees
Beam Angle (90-270):	88.4 Degrees
Field Angle (0-180):	155.7 Degrees
Field Angle (90-270):	151.2 Degrees

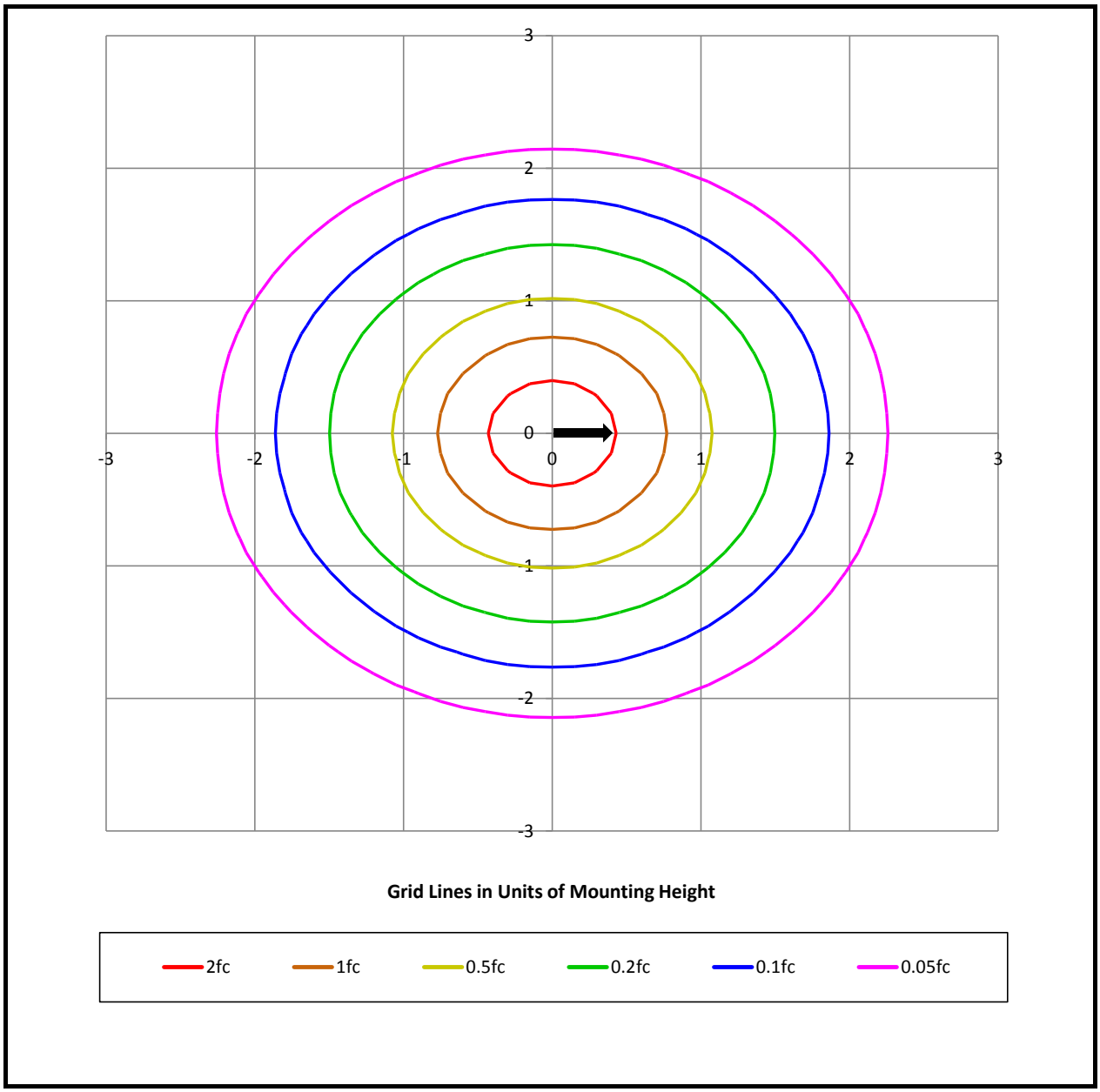
Cone of Light Tabulation

Mounting Height (Feet)	Footcandles at Nadir	Diameter (Feet)
4.00	11.9	4.53
6.00	5.28	6.80
8.00	2.97	9.06
10.0	1.90	11.3
12.0	1.32	13.6
14.0	0.969	15.9
16.0	0.742	18.1



ISOFootcandle Plot

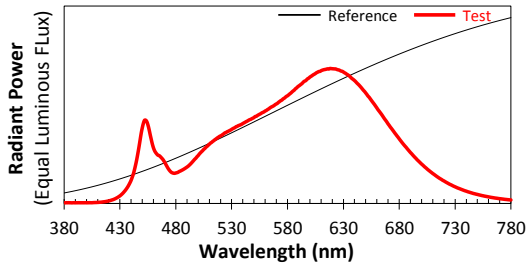
Mounting Height - 8 Feet

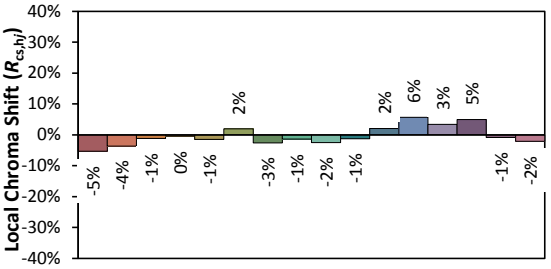


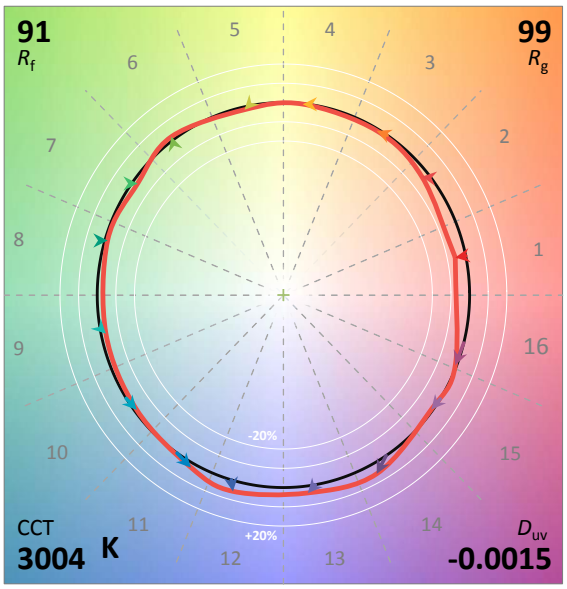
ANSI/IES TM-30-18 Color Rendition Report

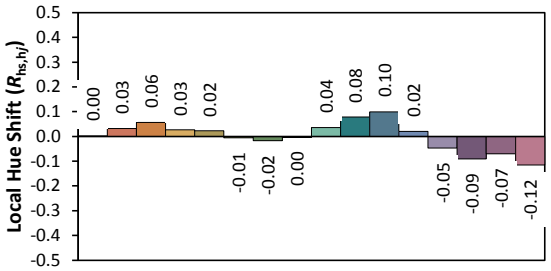
Date: 2021-08-02 **Manufacturer:** Vokslyte

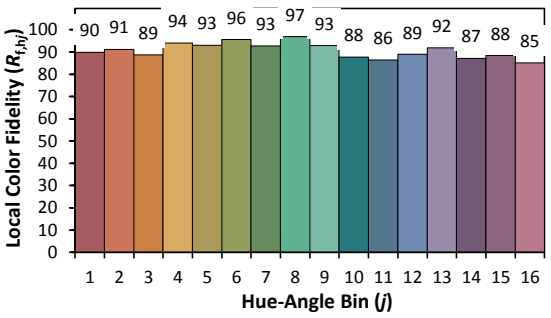
Model: Tangent 8w 24vDC 3000K

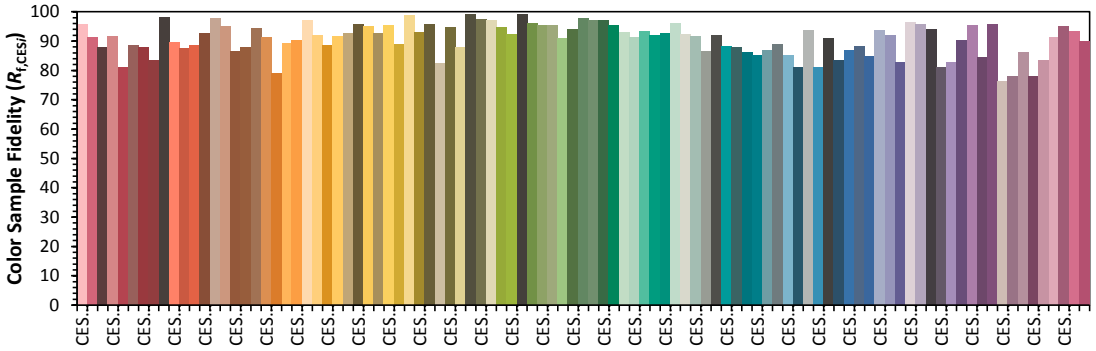












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	**0.4344**
y	**0.3995**
u'	**0.2509**
v'	**0.5192**

CIE 13.3-1995 (CRI)

R_a	92
R_9	57

Colors are for visual orientation purposes only. Created with the IES TM-30-18 Calculator Version 2.00.