



# GRM30-45-35-ND-1-NA-R-NA-C-C4-SN-AW

**Luminaire Description:** White rectangular metal housing with diffuse plastic lens  
**Lamp:** 112 White LEDs  
**Mounting:** Pendant  
**Ballast/Driver:** Signify North America / XI020C056V054BST2

Luminaire



### Luminaire Characteristics

Luminous Length: 48.00 in.  
 Luminous Width: 2.000 in.  
 Luminous Height: 0.25 in.

### Summary of Results

#### Integrating Sphere

Luminous Flux: 2046 Lumens  
 Efficacy: 99.6 lm/w  
 CCT: 3429 K  
 CRI (Ra): 93.5

#### Distribution

Total Luminaire Output: 1959 Lumens  
 Luminaire Efficacy: 95.5 lm/w  
 Maximum Candela: 521 Candela

#### Electrical Data at 120 VAC

Test Temperature: 24.6 °C  
 Voltage: 120.0 VAC  
 Current: 0.1719 A  
 Power: 20.54 W  
 Power Factor: 0.996  
 Frequency: 60 Hz  
 Current THD: 7.49 %



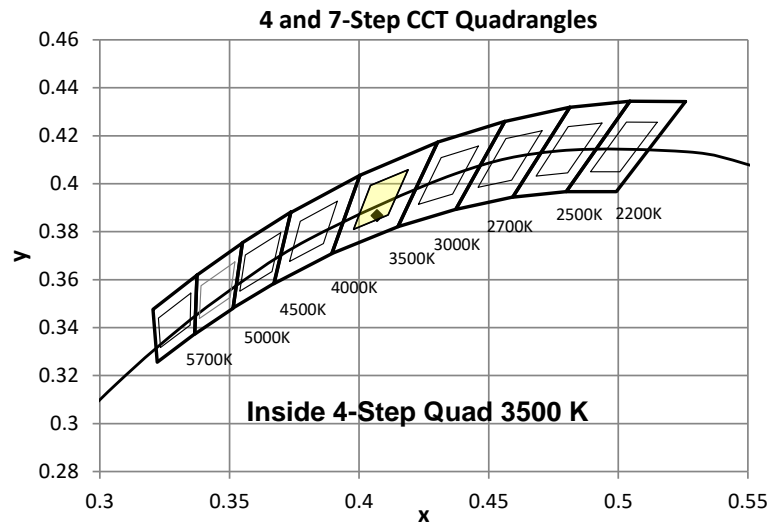
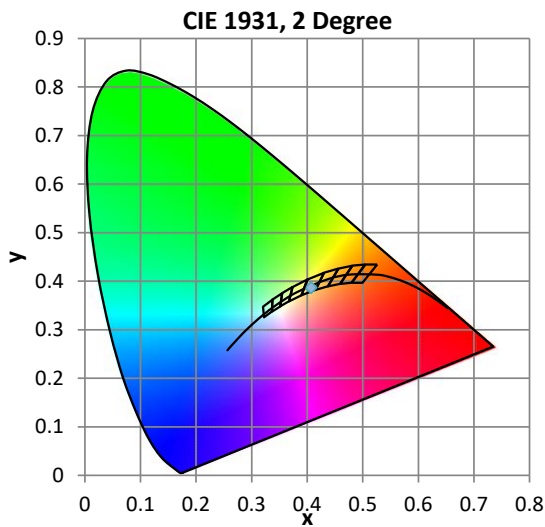
## Color Quality - Integrating Sphere

### Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.6 °C	120.0 VAC	0.1719 A	20.54 W	0.996	60 Hz	7.49 %

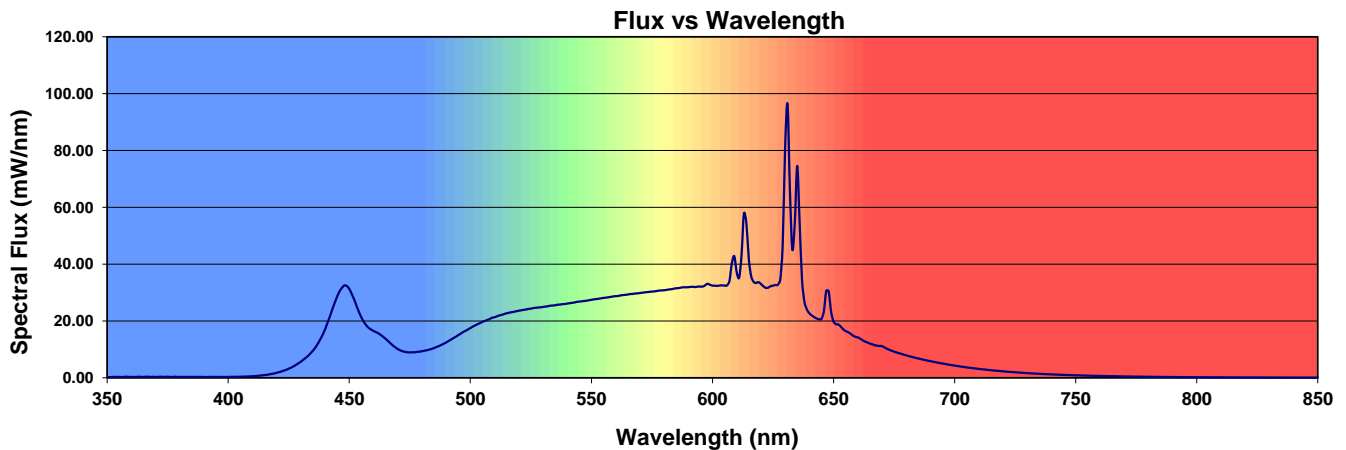
### Summary of Results

<b>Total Output:</b>	2046 Lumens	<b>Chromaticity (x):</b>	0.4069
<b>Efficacy:</b>	99.6 lm/w	<b>Chromaticity (y):</b>	0.3867
<b>CCT:</b>	3429 K	<b>Chromaticity (u'):</b>	0.2384
<b>CRI (Ra):</b>	93.5	<b>Chromaticity (v'):</b>	0.5098
<b>CRI (R9):</b>	65.6	<b>TM-30 Rf:</b>	91
<b>Peak Wavelength:</b>	631 nm	<b>TM-30 Rg:</b>	102
<b>Dominant Wavelength:</b>	582 nm	<b>TM-30 Rcs,h1:</b>	-5%
<b>S/P Ratio:</b>	1.58	<b>Duv:</b>	-0.0021



### Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
93.5	95.5	95.7	94.1	94.3	94.8	94.4	93.1	86.4	65.6	88.2	94.5	81.3	95.4	95.8	92.5





## Distribution - Goniophotometer

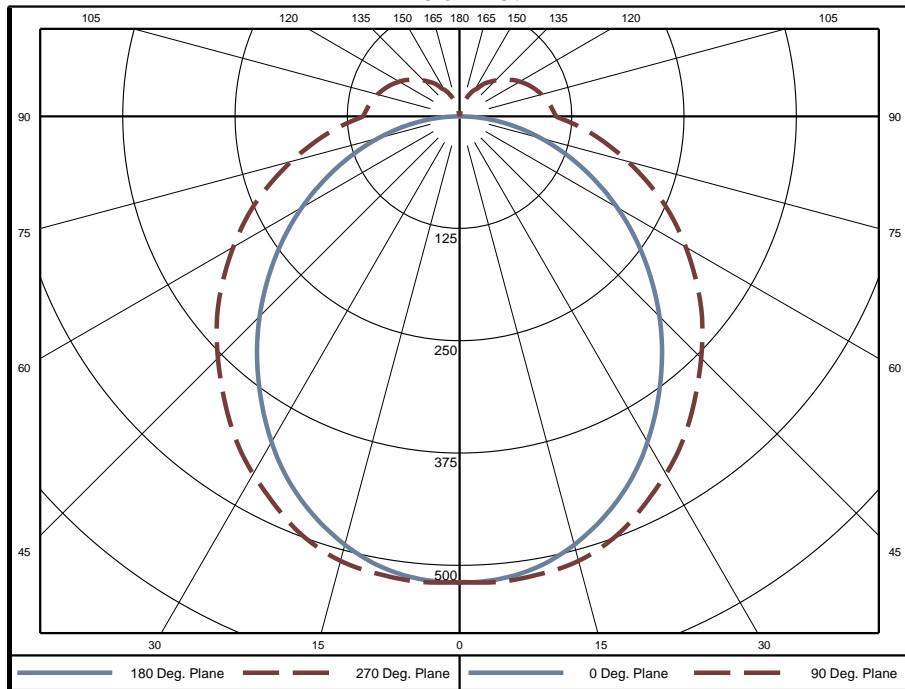
### Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.3 °C	120.1 VAC	0.1715 A	20.52 W	0.996	60 Hz	7.51 %

### Summary of Results

<b>Spacing Criteria</b>	<b>Total Lumen Output:</b>	1959 Lumens
0-180: 1.20	<b>Luminaire Efficacy:</b>	95.5 lm/w
90-270: 1.31	<b>Maximum Candela:</b>	521 Candela
<b>Corrected UGR (Room Dimension: X=4H, Y=8H, Reflectances: 70/50/20%, S/H: 1)</b>	<b>Endwise:</b>	22.3
<b>Crosswise:</b> 21.6		

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	12.4	0.6%	60-65	116.3	5.9%	120-125	20.8	1.1%
5-10	37.0	1.9%	65-70	103.9	5.3%	125-130	17.7	0.9%
10-15	60.5	3.1%	70-75	89.4	4.6%	130-135	14.5	0.7%
15-20	82.0	4.2%	75-80	74.1	3.8%	135-140	11.4	0.6%
20-25	100.6	5.1%	80-85	58.7	3.0%	140-145	8.8	0.4%
25-30	115.5	5.9%	85-90	43.4	2.2%	145-150	6.2	0.3%
30-35	126.7	6.5%	90-95	35.4	1.8%	150-155	4.3	0.2%
35-40	134.0	6.8%	95-100	33.8	1.7%	155-160	2.7	0.1%
40-45	137.4	7.0%	100-105	31.9	1.6%	160-165	1.5	0.1%
45-50	137.2	7.0%	105-110	29.5	1.5%	165-170	0.6	0.0%
50-55	133.5	6.8%	110-115	26.8	1.4%	170-175	0.1	0.0%
55-60	126.2	6.4%	115-120	23.9	1.2%	175-180	0.0	0.0%

Zone	Lumens	% of Luminaire
0-40	669	34.1%
0-60	1203	61.4%
0-90	1689	86.2%
90-180	270	13.8%



**Candela Tabulation**  
Horizontal 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	519.1	519.1	519.1	519.1	519.1	519.1	519.1	519.1	519.1	519.1	519.1	519.1	519.1	519.1	519.1	519.1
5	516.8	516.4	519.3	520.8	520.0	520.8	519.3	516.4	516.8	516.4	519.3	520.8	520.0	520.8	519.3	516.4
10	508.7	510.1	515.3	518.3	517.3	518.3	515.3	510.1	508.7	510.1	515.3	518.3	517.3	518.3	515.3	510.1
15	493.7	498.2	506.3	511.8	512.2	511.8	506.3	498.2	493.7	498.2	506.3	511.8	512.2	511.8	506.3	498.2
20	473.4	480.9	492.4	499.3	499.9	499.3	492.4	480.9	473.4	480.9	492.4	499.3	499.9	499.3	492.4	480.9
25	448.8	459.2	471.9	479.7	480.7	479.7	471.9	459.2	448.8	459.2	471.9	479.7	480.7	479.7	471.9	459.2
30	418.7	432.4	447.5	457.4	459.5	457.4	447.5	432.4	418.7	432.4	447.5	457.4	459.5	457.4	447.5	432.4
35	385.4	402.2	420.9	432.9	435.8	432.9	420.9	402.2	385.4	402.2	420.9	432.9	435.8	432.9	420.9	402.2
40	350.9	370.7	391.7	404.6	408.1	404.6	391.7	370.7	350.9	370.7	391.7	404.6	408.1	404.6	391.7	370.7
45	315.0	337.4	361.1	376.4	380.3	376.4	361.1	337.4	315.0	337.4	361.1	376.4	380.3	376.4	361.1	337.4
50	277.8	303.0	329.3	347.5	352.5	347.5	329.3	303.0	277.8	303.0	329.3	347.5	352.5	347.5	329.3	303.0
55	240.5	267.8	295.9	315.8	322.1	315.8	295.9	267.8	240.5	267.8	295.9	315.8	322.1	315.8	295.9	267.8
60	202.8	232.0	262.5	283.8	290.8	283.8	262.5	232.0	202.8	232.0	262.5	283.8	290.8	283.8	262.5	232.0
65	165.1	196.1	228.7	252.3	259.7	252.3	228.7	196.1	165.1	196.1	228.7	252.3	259.7	252.3	228.7	196.1
70	128.8	160.5	194.5	219.1	226.6	219.1	194.5	160.5	128.8	160.5	194.5	219.1	226.6	219.1	194.5	160.5
75	93.9	126.5	160.6	186.5	194.1	186.5	160.6	126.5	93.9	126.5	160.6	186.5	194.1	186.5	160.6	126.5
80	61.2	94.7	129.4	155.6	163.6	155.6	129.4	94.7	61.2	94.7	129.4	155.6	163.6	155.6	129.4	94.7
85	30.6	64.5	100.2	126.3	134.6	126.3	100.2	64.5	30.6	64.5	100.2	126.3	134.6	126.3	100.2	64.5
90	3.3	37.9	73.4	99.3	107.9	99.3	73.4	37.9	3.3	37.9	73.4	99.3	107.9	99.3	73.4	37.9
95	2.4	35.5	70.2	95.0	103.3	95.0	70.2	35.5	2.4	35.5	70.2	95.0	103.3	95.0	70.2	35.5
100	1.9	34.4	67.7	91.6	99.4	91.6	67.7	34.4	1.9	34.4	67.7	91.6	99.4	91.6	67.7	34.4
105	1.6	32.5	64.7	87.2	94.6	87.2	64.7	32.5	1.6	32.5	64.7	87.2	94.6	87.2	64.7	32.5
110	1.3	30.4	61.2	82.4	89.4	82.4	61.2	30.4	1.3	30.4	61.2	82.4	89.4	82.4	61.2	30.4
115	1.0	27.7	56.5	77.2	83.8	77.2	56.5	27.7	1.0	27.7	56.5	77.2	83.8	77.2	56.5	27.7
120	0.8	25.4	52.8	71.1	77.7	71.1	52.8	25.4	0.8	25.4	52.8	71.1	77.7	71.1	52.8	25.4
125	0.7	22.3	48.5	65.4	70.9	65.4	48.5	22.3	0.7	22.3	48.5	65.4	70.9	65.4	48.5	22.3
130	0.5	19.7	40.6	59.7	64.1	59.7	40.6	19.7	0.5	19.7	40.6	59.7	64.1	59.7	40.6	19.7
135	0.4	16.9	35.1	52.6	56.9	52.6	35.1	16.9	0.4	16.9	35.1	52.6	56.9	52.6	35.1	16.9
140	0.3	13.9	29.9	45.0	49.8	45.0	29.9	13.9	0.3	13.9	29.9	45.0	49.8	45.0	29.9	13.9
145	0.2	11.9	25.1	36.4	42.3	36.4	25.1	11.9	0.2	11.9	25.1	36.4	42.3	36.4	25.1	11.9
150	0.1	9.4	20.5	28.2	34.6	28.2	20.5	9.4	0.1	9.4	20.5	28.2	34.6	28.2	20.5	9.4
155	0.0	7.1	16.1	22.3	28.4	22.3	16.1	7.1	0.0	7.1	16.1	22.3	28.4	22.3	16.1	7.1
160	0.0	5.3	12.1	15.2	20.5	15.2	12.1	5.3	0.0	5.3	12.1	15.2	20.5	15.2	12.1	5.3
165	0.0	3.6	7.5	9.8	14.8	9.8	7.5	3.6	0.0	3.6	7.5	9.8	14.8	9.8	7.5	3.6
170	0.0	1.9	4.4	5.0	2.1	5.0	4.4	1.9	0.0	1.9	4.4	5.0	2.1	5.0	4.4	1.9
175	0.0	0.4	1.1	1.4	0.1	1.4	1.1	0.4	0.0	0.4	1.1	1.4	0.1	1.4	1.1	0.4
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<sup>2</sup>)**  
Horizontal Angle (Degrees)

	0	45	90
0	8382	8382	8382
45	7156	7550	7719
55	6719	7362	7693
65	6239	7297	7824
75	5747	7454	8257
85	5345	9047	10270

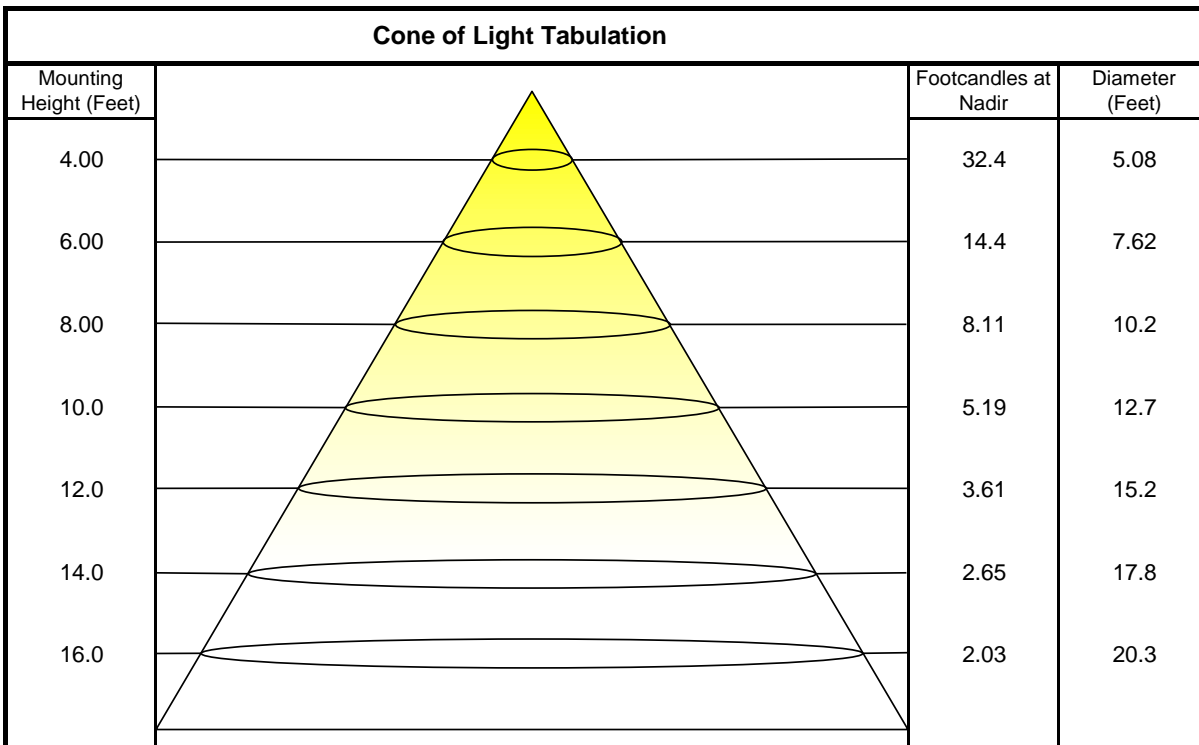


### Coefficients of Utilization - Zonal Cavity Method

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	116	116	116	116	111	111	111	111	103	103	103	96	96	96	89	89	89	86
1	104	98	93	89	100	95	90	86	88	84	81	82	79	76	76	73	71	68
2	94	85	77	71	90	82	75	69	76	70	65	70	66	62	65	62	59	56
3	85	74	65	58	81	71	63	57	66	60	54	62	56	52	57	53	49	46
4	78	65	56	49	74	63	54	48	59	51	46	55	49	44	51	46	42	39
5	71	58	49	42	68	56	47	41	52	45	39	49	43	38	46	40	36	33
6	66	52	43	36	63	50	42	36	47	40	34	44	38	33	41	36	31	29
7	61	47	38	32	58	46	37	31	43	35	30	40	34	29	38	32	28	26
8	57	43	34	28	54	42	33	28	39	32	27	37	30	26	35	29	25	23
9	53	39	31	25	51	38	30	25	36	29	24	34	28	23	32	26	22	20
10	49	36	28	23	47	35	28	23	33	26	22	31	25	21	30	24	20	18

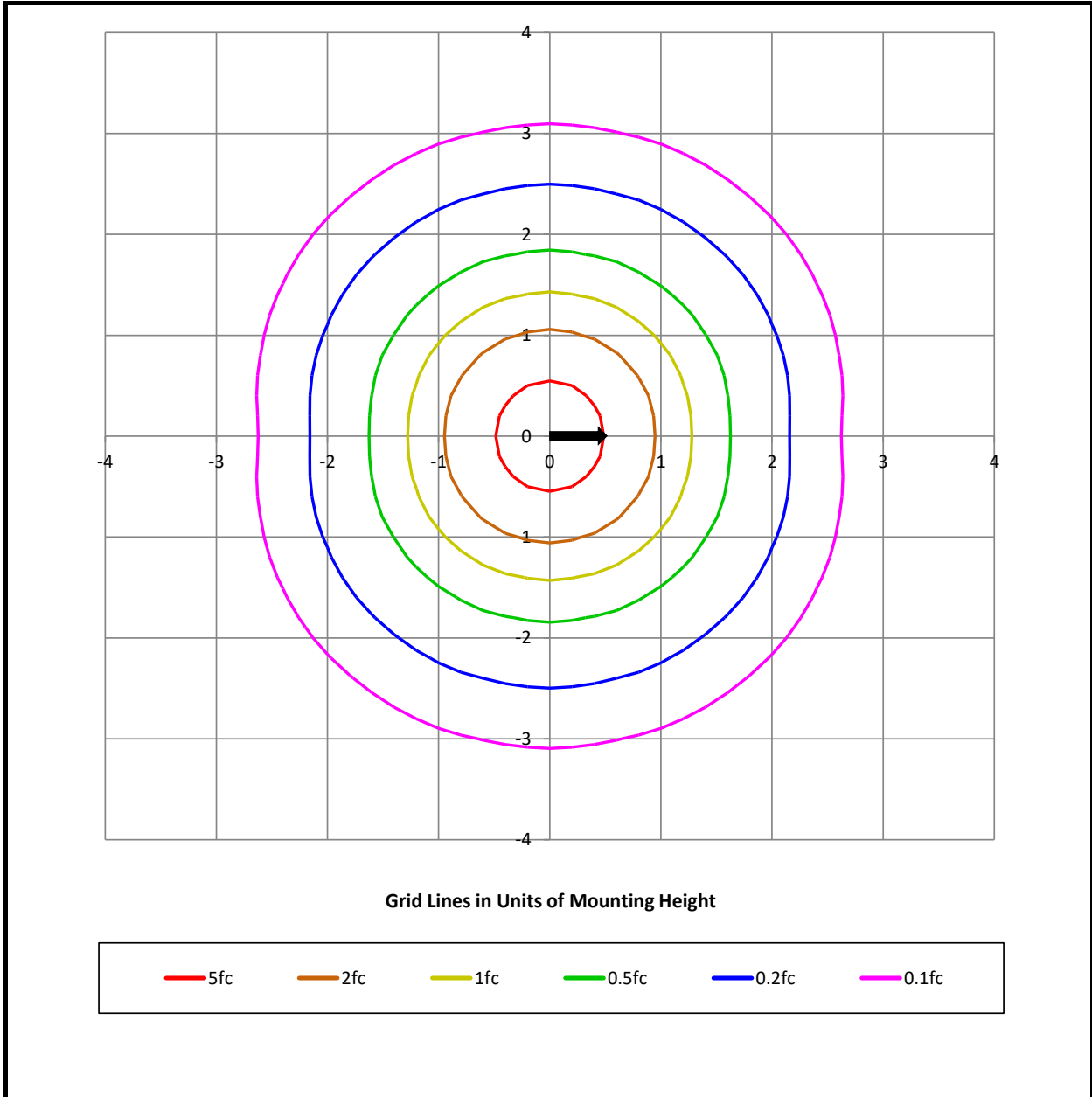
Beam and Field Information	
CIE Type:	Semi-Direct
Center Beam Intensity:	519.1 Candela
Central Cone Intensity:	519 Candela
Beam Flux:	1206.0 Lumens
Beam Angle (0-180):	104.9 Degrees
Beam Angle (90-270):	130.0 Degrees
Field Angle (0-180):	162.9 Degrees
Field Angle (90-270):	276.8 Degrees





# ISOFootcandle Plot

Mounting Height - 8 Feet



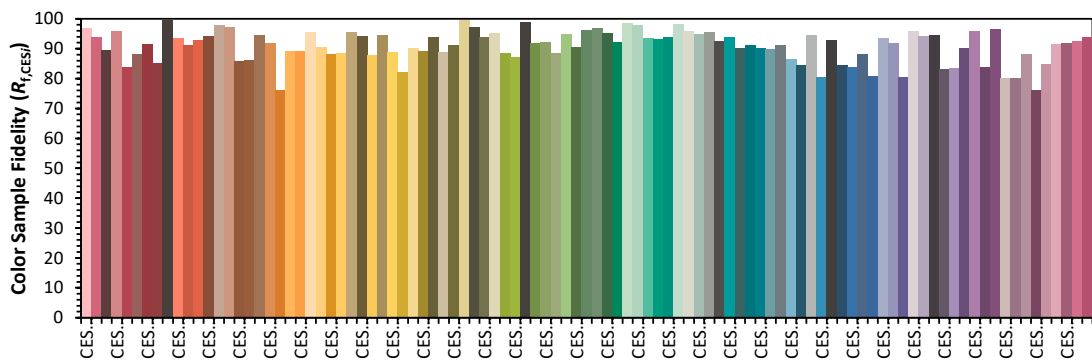
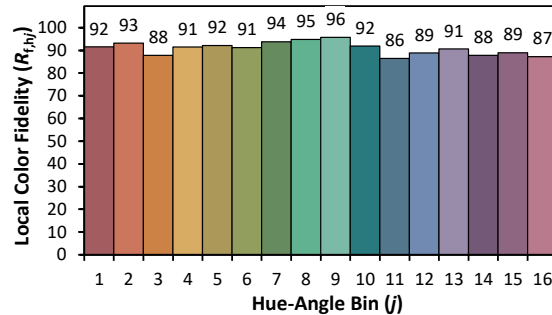
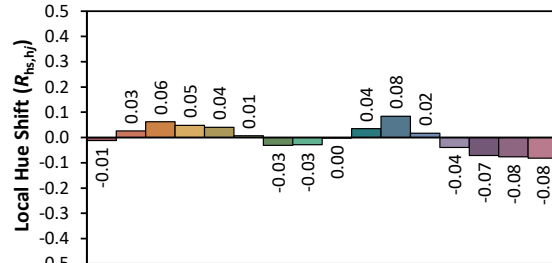
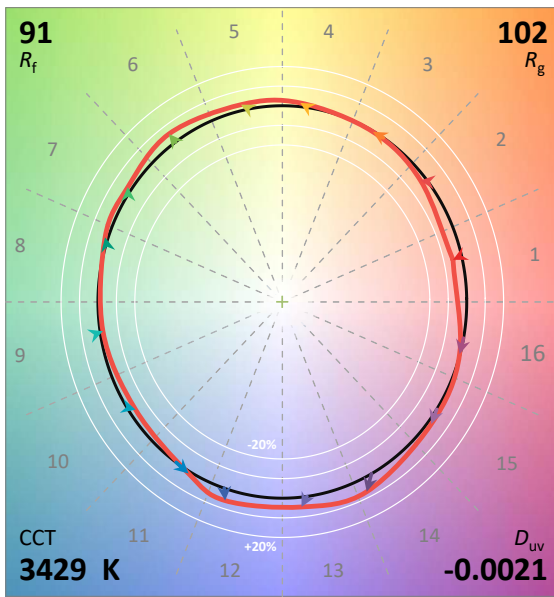
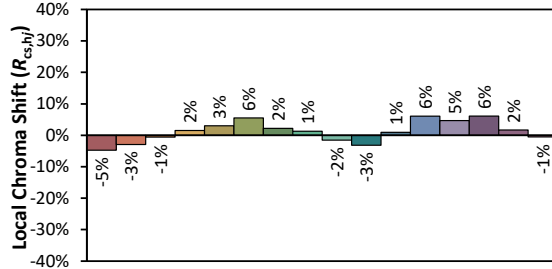
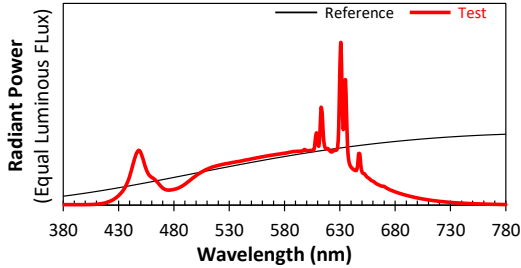
# ANSI/IES TM-30-18 Color Rendition Report

Source: Test Number: 13542729.02

Manufacturer: BARTCO LIGHTING INC

Date: 2020-10-15

Model: GRM30-45-35-ND-1-NA-R-NA-C-C4-S



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

x 0.4069  
y 0.3867  
u' 0.2384  
v' 0.5098

CIE 13.3-1995 (CRI)	
R <sub>a</sub>	94
R <sub>g</sub>	66

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