

PHOTOMETRIC TESTING & EVALUATION TO IES LM-79-19

Sample Tested

JR4-50-GT2-GY--AC**

Prepared for:

Nemalux Inc.1018 72 Ave NE
Calgary, Alberta, Canada T2E 8V9**Technical Report Number**

80213137-3

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Program Description

Photometric and electrical testing of a JR4-50-GT2-GY-**-AC Type C LED Luminaire to IES LM-79-19.

Executive Summary

Sample Tested = JR4-50-GT2-GY-**-AC

Sample Number = 44003157

Driver = Sosen SS-35VA-L50BHL

LED Module = CREE XHP35.2

Luminous Efficacy (Lumens/Watt)	Luminous Flux (Lumens)	Input Power (Watts)	Power Factor	ATHD (%)
97.10	3699.70	38.10	0.9891	7.98

Spacing Criterion (0-180°)	Spacing Criterion (90-270°)	Stabilization Time (Light & Power)
1.78	1.8	30

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Test Sample Pictures

The following sample was submitted for evaluation:



Nemalux Inc. : JR4-50-GT2-GY--AC**

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Test Result

The following results were measured after stabilization of the sample in the Integrating Sphere (unless otherwise stated). Stability shall be achieved when the variation (Maximum to minimum) of at least three readings of the light output and electrical power consumption, taken at a maximum of 10 minute intervals over a period of 20 minutes and divided by the last of these measurements chronologically, is less than 0.5%.

Key Photometric Results	Sample Reference
	JR4-50-GT2-GY-**-AC
	Goniophotometer
Luminous Efficacy (Lumens/Watt)	97.00
Total Luminous Flux (Lumens)	3699.7
Stabilization Time (Light and Power)	30 minutes
Total Run Time (Goniophotometer)	45 minutes
Spacing Criteria (0°-180°)/(90°-270°)	1.78 / 1.78

Electrical Input Results:	Sample Reference
	JR4-50-GT2-GY-**-AC
Input Power (Watts)	38.1
Input Voltage (Volts AC)	120.00
Input Current (Amps)	0.32
Input Frequency (Hertz)	60.0
Power Factor	0.9891
Total Harmonic Distortion (THD A)%	7.98

Additional Information	Sample Reference
	JR4-50-GT2-GY-**-AC
Ambient Temperature	24.9
Date Tested	6/14/2024

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Photometric Test Results

Characteristics		Luminance Data (cd/sq.m)			
Total Lumens:	3699.70	Angle In Degrees	Average		
Input Wattage (W):	38.1		0°	45°	90°
Efficacy(lm/W):	97.10	45	54523	115712	66140
Spacing Criterion (0-180°):	1.78	55	29214	94395	98382
Spacing Criterion (90-270°):	1.78	65	18112	48594	130984
Spacing Criterion (Diagonal):	1.76	75	8295	30657	72856
Luminous Length (0-180°):	0.48 ft	85	1607	3749	2678
Luminous Width (90-270°):	0.48 ft				
Luminous Height:	0.00 ft				

Zonal Lumen Summary												
Zone	Lumens	%Fixt		Zone	Lumens	%Fixt		Zone	Lumens		Zone	Lumens
0-20°	340.78	9.2		60-80°	894.08	24.2		0-10°	82.00		90-100°	0.00
0-30°	791.19	21.4		70-80°	274.58	7.4		10-20°	258.79		100-110°	0.00
0-40°	1404.76	38.0		80-90°	17.53	0.5		20-30°	450.40		110-120°	0.00
0-60°	2788.09	75.4		90-110°	0.00	0.0		30-40°	613.57		120-130°	0.00
0-80°	3682.17	99.5		90-120°	0.00	0.0		40-50°	685.42		130-140°	0.00
0-90°	3699.70	100.0		90-130°	0.00	0.0		50-60°	697.91		140-150°	0.00
10-90°	3617.71	97.8		90-150°	0.00	0.0		60-70°	619.50		150-160°	0.00
20-40°	1063.98	28.8		90-180°	0.00	0.0		70-80°	274.58		160-170°	0.00
20-50°	1749.40	47.3		110-180°	0.00	0.0		80-90°	17.53		170-180°	0.00
40-70°	2002.83	54.1		0-180°	3699.70	100.0		0-90°	3699.70		90-180°	0.00

Coefficients of Utilization																		
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	109	104	99	95	106	101	97	94	97	94	91	93	90	88	90	87	85	83
2	98	89	82	76	95	87	81	75	84	78	73	80	76	72	77	73	70	68
3	88	77	69	62	86	76	68	61	73	66	60	70	64	59	67	62	58	56
4	80	68	58	51	78	66	58	51	64	56	50	61	55	49	59	53	49	46
5	73	60	50	43	71	59	50	43	56	48	42	54	47	42	52	46	41	39
6	67	53	44	37	65	52	43	37	50	42	36	49	42	36	47	41	36	34
7	62	48	39	32	60	47	38	32	45	38	32	44	37	31	43	36	31	29
8	58	43	34	28	56	43	34	28	41	33	28	40	33	28	39	32	28	26
9	54	39	31	25	52	39	31	25	38	30	25	37	30	25	36	29	25	23
10	50	36	28	22	49	36	28	22	35	27	22	34	27	22	33	27	22	20

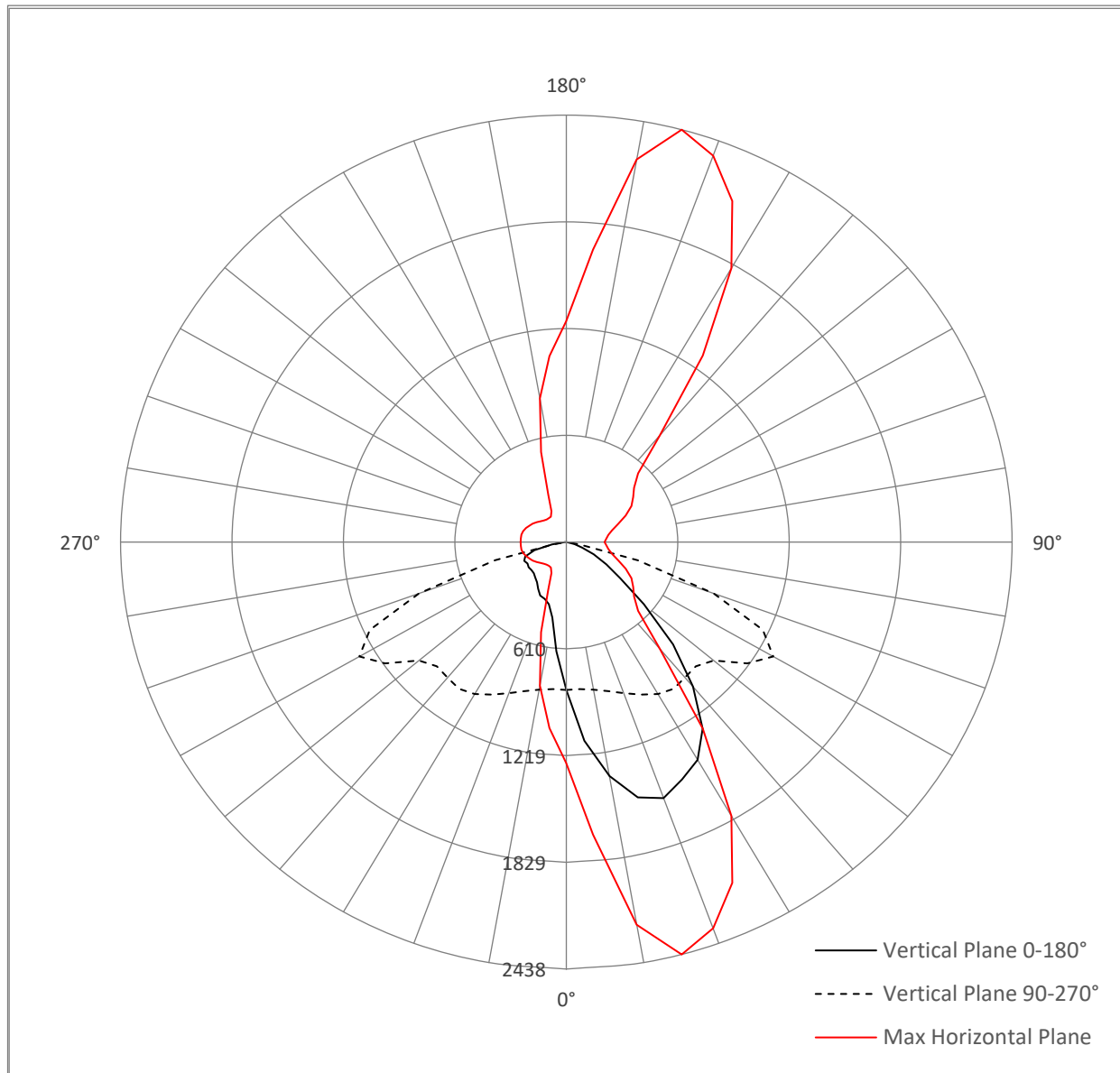
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UGR Table												
		Reflectances						Reflectances				
Ceiling Cavity		70	70	50	50	30		70	70	50	50	30
Walls		50	30	50	30	30		50	30	50	30	30
Floor Cavity		20	20	20	20	20		20	20	20	20	20
Room Size		UGR Viewed Crosswise						UGR Viewed Endwise				
X=2H	Y=2H	23.2	24.9	25.6	34.5	35.1	32.8	34.5	33.1	34.8	35.1	
	3H	23.7	25.2	25.9	37.3	38.0	35.7	37.3	36.1	37.6	38.0	
	4H	23.7	25.2	25.9	37.6	38.4	36.2	37.6	36.6	38.0	38.4	
	6H	23.8	25.1	25.9	37.6	38.3	36.2	37.6	36.6	37.9	38.3	
	8H	23.7	25.0	25.8	37.5	38.3	36.2	37.5	36.6	37.9	38.3	
	12H	23.7	25.0	25.8	37.4	38.2	36.2	37.4	36.6	37.8	38.2	
4H	2H	24.6	26.0	26.8	34.1	34.9	32.7	34.1	33.1	34.5	34.9	
	3H	25.2	26.5	27.3	37.1	37.9	35.9	37.1	36.3	0.0	37.9	
	4H	25.4	26.5	27.3	37.7	38.5	36.5	37.7	37.0	38.1	38.5	
	6H	25.4	26.4	27.3	37.6	38.5	36.6	37.6	37.1	38.1	38.5	
	8H	25.4	26.3	27.2	37.5	38.4	36.6	37.5	37.1	38.0	38.4	
	12H	25.4	26.2	27.1	37.4	38.4	36.6	37.4	37.1	37.9	38.4	
8H	4H	27.7	28.6	29.5	37.4	38.3	36.5	37.4	36.9	37.8	38.3	
	6H	27.7	28.4	29.4	37.3	38.3	36.6	37.3	37.1	37.8	38.3	
	8H	27.7	28.3	29.3	37.2	38.2	36.6	37.2	37.1	37.7	38.2	
	12H	27.7	28.2	29.3	37.1	38.2	36.6	37.1	37.1	37.6	38.2	
12H	4H	27.8	28.6	29.5	37.3	38.2	36.5	37.3	37.0	37.8	38.2	
	6H	27.8	28.5	29.5	37.2	38.2	36.6	37.2	37.1	37.7	38.2	
	8H	27.8	28.4	29.4	37.1	38.2	36.6	37.1	37.1	37.6	38.2	

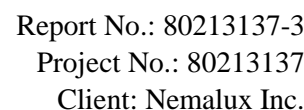
Maximum UGR = 38.5

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Polar Graph



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Vertical Angle

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Photometric Testing Information

The sample was evaluated for photometric and electrical characteristics using a goniophotometer, located in purpose-built, temperature and humidity-controlled, draft free environments

Luminaire Stabilization.

The results were measured after stabilization of the sample in the Goniophotometer (unless otherwise stated). Stability shall be achieved when the variation (Maximum to minimum) of at least three readings of the light output and electrical power consumption, taken at a maximum of 10-minute intervals over a period of 20 minutes and divided by the last of these measurements chronologically, is less than 0.5%.

The goniophotometer Mayer Engineering Type C is calibrated using a frosted tungsten filament FDS/DZE lamp with the following specifications:

The goniophotometer Mayer Engineering Type C is calibrated using a frosted tungsten filament FDS/DZE lamp with the following specifications:

Manufacturer: GE
Part Number: DZE
Bulb Number: 106-A
Voltage: 16.93 Volts DC reference
Calibration Current: 4.863 Amperes
Luminous Intensity: 168.8 Candelas
Calibration Date: 4/25/12 (NIST traceable)

Manufacturer: GE
Part Number: DZE
Bulb Number: 106-B
Voltage: 16.45 Volts DC reference
Calibration Current: 4.79 Amperes
Luminous Intensity: 145.3 Candelas
Calibration Date: 4/25/12(NIST traceable)

Manufacturer: GE
Part Number: DZE
Bulb Number: 106-C
Voltage: 16.57 Volts DC reference
Calibration Current: 4.829 Amperes
Luminous Intensity: 157.0 Candelas
Calibration Date: 4/25/12 (NIST traceable)

A Yokogawa WT310 Power Analyzer was used to measure all electrical characteristics of the sample.

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Equipment List: Goniophotometer Type C (Mirror 2)

Description	Manufacturer and Model Number	CSA Instrument Reference Number	Calibration Due Date
Optometer	Gigahertz Optik P9801	OPT400	N/A
Programmable DC Power Supply	Chroma Instruments 62012P-80-60	DCP300	N/A
Regulated Power Supply	Chroma Instruments 61602	AC301	N/A
Power Analyzer	Yokogawa WT310-E	POA400	9/25/2024

* All equipment is calibrated to ISO / IEC 17025-2017 guidelines.

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Testing
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