

LUMINAIRE PHOTOMETRIC TEST REPORT

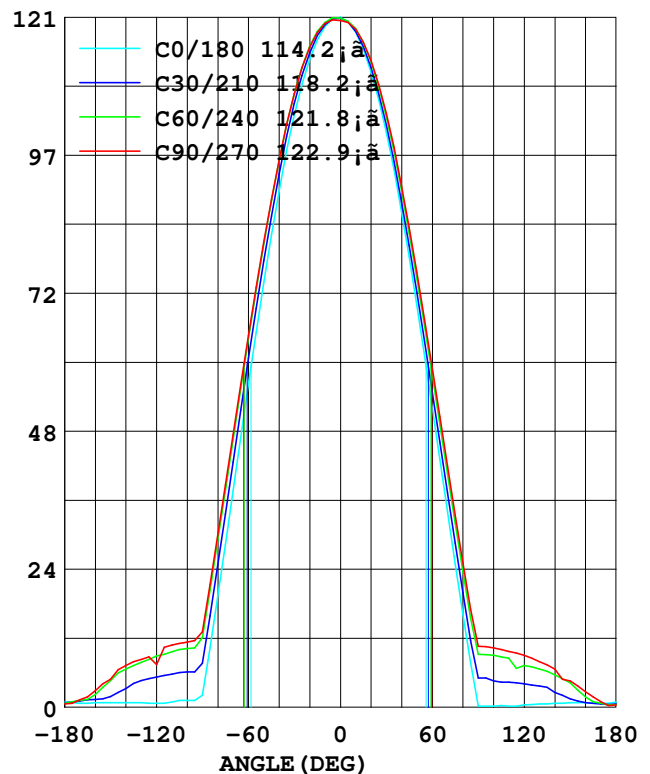
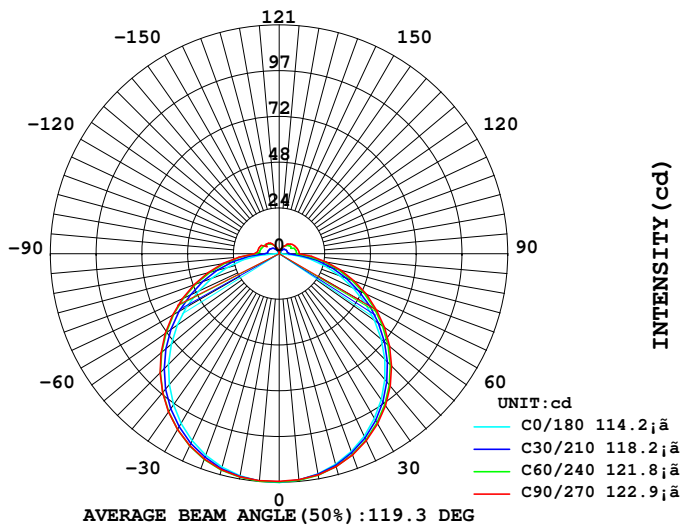
Report number: GO2018-051A

MANUFACTURER: BACKLIGHT SRL	Address: Via Volta 5 - Ornago (MB)	
NAME: MARKER_9.0W/line foot_1ft	TYPE: wall	WEIGHT:
SPECIFICATION: wall	DIMENSION: 50x305x20	SERIAL No.:

DATA OF LAMP		Imax(cd)	120.7	S/MH (C0/180)	1.27
MODEL	MARKER_9.0W/line foot_1ft	REF. EFFICIENCY(%)	100.0	S/MH (C90/270)	1.33
NOMINAL POWER(W)	7.8	TOTAL FLUX(lm)	418.18	Voltage(V)	24.10
RATED VOLTAGE(V)	24	EFFICIENCY(lm/W)	53.6	Current(A)	0.326
NOMINAL FLUX(lm)	418.2	η up(%)	8.1	Power(W)	7.800
LAMPS QUANTITY	1	η down(%)	91.9	Power Factor(PF)	1.000
TEST VOLTAGE(V)	24.1	Effective Flux(lm)	382.3	EEI	0.250

LUMINOUS INTENSITY DISTRIBUTION

LUMINOUS INTENSITY DISTRIBUTION



Test System: LSG-1800
 Temperature: 25.3 DEG
 Operators: G
 Test Date: 03-02-2018

Test Set: 5.0 deg/s C-Gamma (TYPE C)
 Humidity: 65.0%
 Test Distance: 10.000 m
 Remarks:

ZONAL FLUX DIAGRAM

Report number: GO2018-051A

MANUFACTURER: BACKLIGHT SRL	Address: Via Volta 5 - Ornago (MB)	
NAME: MARKER_9.0W/line foot_1ft	TYPE: wall	WEIGHT:
SPECIFICATION: wall	DIMENSION: 50x305x20	SERIAL No.:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	zone	total
10.0	119.2	119.4	119.7	118.9	118.2	119.2	118.7	119.5	0- 10	11.44	11.44
20.0	113.3	114.1	115.5	113.5	111.1	113.6	113.1	114.5	10- 20	33.00	44.45
30.0	103.5	105.2	107.2	104.2	100.6	104.4	103.9	105.5	20- 30	50.49	94.94
40.0	90.40	92.69	95.80	91.59	86.79	91.59	91.29	93.19	30- 40	61.63	156.5
50.0	74.40	77.60	81.50	76.50	70.40	76.30	76.20	78.09	40- 50	65.15	221.7
60.0	56.59	60.70	65.10	59.39	52.60	59.20	59.50	61.19	50- 60	60.96	282.6
70.0	37.90	42.89	47.70	41.60	34.20	41.29	42.20	43.20	60- 70	50.07	332.7
80.0	19.40	25.50	30.10	24.00	16.30	23.90	25.29	25.50	70- 80	34.58	367.3
90.0	2.100	8.800	13.20	7.700	0.200	8.700	10.70	8.900	80- 90	17.06	384.4
100.0	1.200	7.400	11.40	6.100	0.200	8.299	10.40	8.299	90-100	7.920	392.3
110.0	0.900	7.200	10.90	6.800	0.200	7.300	9.800	7.700	100-110	7.111	399.4
120.0	0.700	6.600	7.500	6.400	0.400	6.900	9.099	7.100	110-120	6.176	405.6
130.0	0.800	5.900	8.400	5.400	0.600	6.200	8.000	6.300	120-130	5.033	410.6
140.0	0.800	5.000	7.300	4.700	0.700	5.200	6.700	5.300	130-140	3.715	414.3
150.0	0.800	2.900	4.900	2.700	0.800	3.200	4.600	3.500	140-150	2.321	416.6
160.0	0.800	1.300	2.900	1.200	0.800	1.600	2.700	2.000	150-160	1.068	417.7
170.0	0.700	0.900	1.300	0.700	0.700	1.000	1.000	1.200	160-170	0.353	418.1
180.0	0.900	0.600	0.600	0.600	0.900	0.800	0.400	0.800	170-180	0.072	418.1
DEG	LUMINOUS INTENSITY: cd									UNIT: lm	

Test System: LSG-1800
Temperature: 25.3 DEG
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Test Date: 03-02-2018

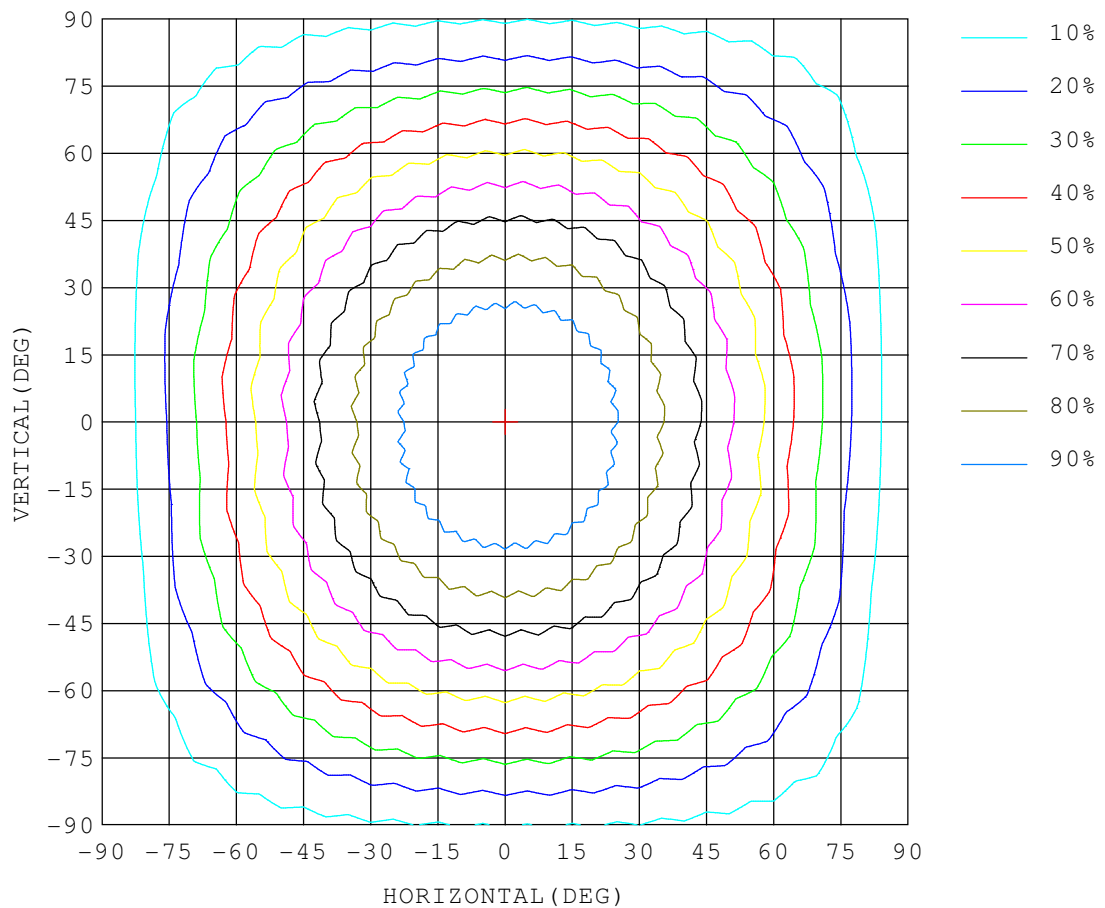
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Remarks:

ISOCANDELA DIAGRAM

Report number: GO2018-051A

MANUFACTURER: BACKLIGHT SRL	Address: Via Volta 5 - Ornago (MB)	
NAME: MARKER_9.0W/line foot_1ft	TYPE: wall	WEIGHT:
SPECIFICATION: wall	DIMENSION: 50x305x20	SERIAL No.:

UNIT: cd



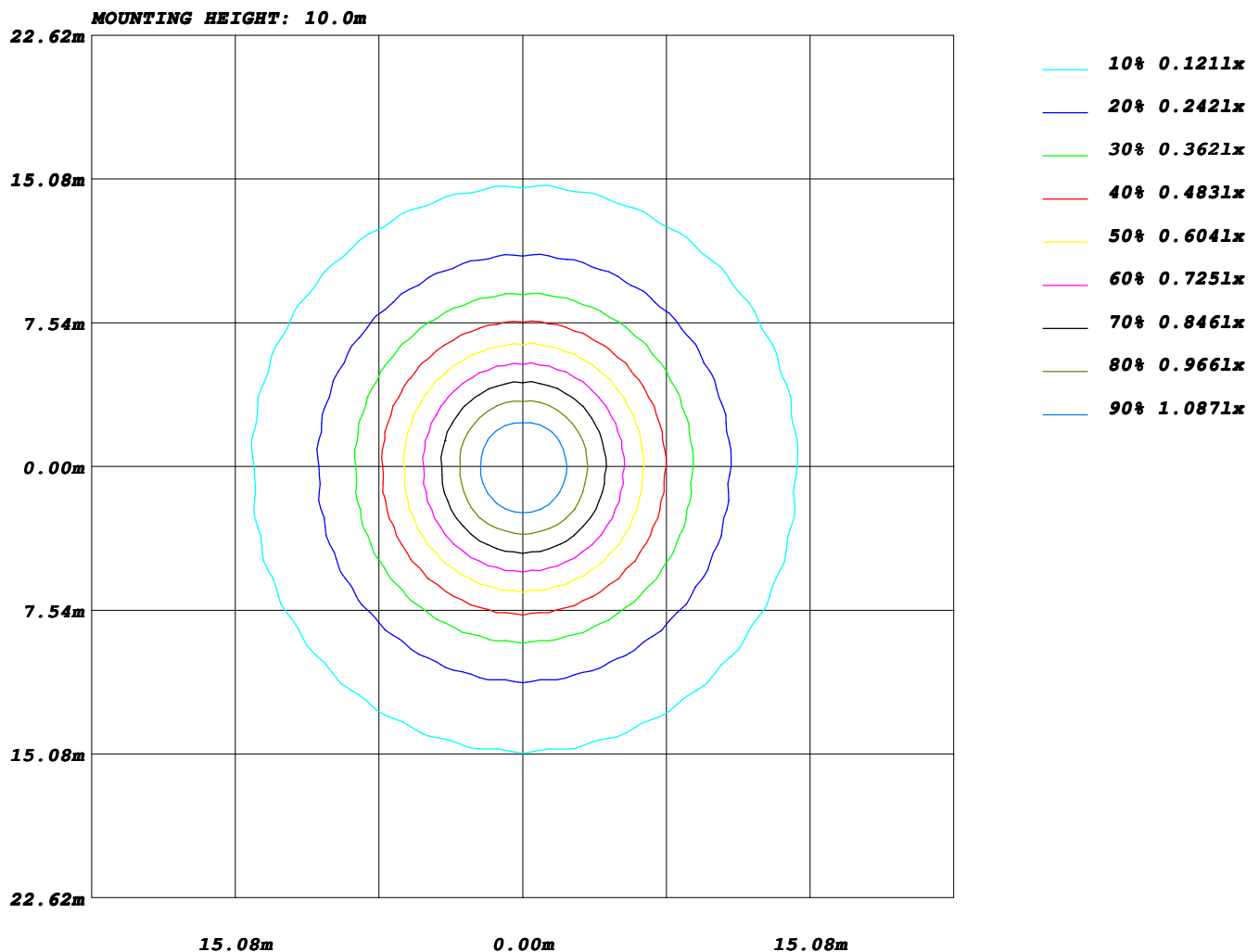
Test System: LSG-1800
Temperature: 25.3 DEG
Operators: G
Test Date: 03-02-2018

Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity: 65.0%
Test Distance: 10.000 m
Remarks:

ISOLUX DIAGRAM

Report number: GO2018-051A

MANUFACTURER: BACKLIGHT SRL	Address: Via Volta 5 - Ornago (MB)	
NAME: MARKER_9.0W/line foot_1ft	TYPE: wall	WEIGHT:
SPECIFICATION: wall	DIMENSION: 50x305x20	SERIAL No.:



Test System: LSG-1800
Temperature: 25.3DEG
Operators: G
Test Date: 03-02-2018

Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity: 65.0%
Test Distance: 10.000 m
Remarks:

AREA LUMINOUS FLUX

Report number: GO2018-051A

MANUFACTURER: BACKLIGHT SRL	Address: Via Volta 5 - Ornago (MB)	
NAME: MARKER_9.0W/line foot_1ft	TYPE: wall	WEIGHT:
SPECIFICATION: wall	DIMENSION: 50x305x20	SERIAL No.:

90	AREA FLUX DIAGRAM																		UNIT:lm		Φ t	Φ a
	0.01	0.04	0.10	0.18	0.28	0.37	0.46	0.52	0.55	0.56	0.53	0.47	0.39	0.30	0.20	0.11	0.05	0.01	5.11	4.12		
80	0.01	0.07	0.18	0.34	0.51	0.70	0.86	0.98	1.04	1.05	1.00	0.88	0.73	0.55	0.36	0.20	0.08	0.01	9.55	9.35		
70	0.02	0.10	0.27	0.50	0.76	1.03	1.27	1.46	1.56	1.57	1.48	1.31	1.07	0.80	0.53	0.29	0.12	0.02	14.1	14.0		
60	0.02	0.13	0.35	0.65	1.00	1.37	1.70	1.94	2.07	2.08	1.97	1.73	1.41	1.04	0.69	0.37	0.15	0.02	18.7	18.6		
50	0.02	0.16	0.42	0.79	1.22	1.67	2.08	2.39	2.55	2.56	2.42	2.12	1.72	1.27	0.83	0.45	0.17	0.03	22.9	22.8		
40	0.03	0.18	0.49	0.91	1.41	1.94	2.42	2.77	2.97	2.98	2.80	2.46	1.99	1.46	0.95	0.52	0.19	0.03	26.5	26.5		
30	0.03	0.20	0.53	1.00	1.56	2.15	2.68	3.08	3.29	3.30	3.11	2.72	2.19	1.61	1.04	0.56	0.21	0.03	29.3	29.3		
VERTICAL (DEG)	0.03	0.21	0.56	1.06	1.66	2.29	2.85	3.28	3.51	3.52	3.31	2.89	2.33	1.71	1.10	0.59	0.23	0.04	31.2	31.2		
	0.03	0.21	0.58	1.10	1.71	2.35	2.93	3.37	3.61	3.62	3.40	2.97	2.40	1.76	1.15	0.62	0.23	0.04	32.1	32.1		
	0.03	0.20	0.56	1.07	1.69	2.34	2.93	3.37	3.62	3.63	3.40	2.97	2.39	1.75	1.12	0.60	0.23	0.04	31.9	31.9		
	0.03	0.20	0.55	1.07	1.67	2.30	2.88	3.31	3.54	3.55	3.33	2.91	2.34	1.71	1.11	0.59	0.22	0.03	31.3	31.3		
	0.02	0.19	0.53	1.01	1.59	2.18	2.72	3.13	3.34	3.35	3.15	2.75	2.22	1.63	1.04	0.56	0.21	0.03	29.7	29.6		
-30	0.02	0.18	0.48	0.93	1.45	1.99	2.48	2.85	3.04	3.04	2.86	2.50	2.02	1.49	0.96	0.51	0.20	0.03	27.0	27.0		
-40	0.02	0.16	0.43	0.81	1.26	1.74	2.16	2.47	2.64	2.65	2.48	2.18	1.77	1.30	0.84	0.46	0.17	0.03	23.6	23.5		
-50	0.02	0.13	0.36	0.68	1.05	1.43	1.78	2.04	2.18	2.18	2.05	1.80	1.46	1.08	0.71	0.38	0.15	0.02	19.5	19.4		
-60	0.01	0.10	0.27	0.52	0.81	1.10	1.36	1.56	1.66	1.67	1.57	1.38	1.13	0.84	0.55	0.30	0.12	0.02	15.0	14.9		
-70	0.01	0.07	0.19	0.36	0.55	0.76	0.94	1.07	1.14	1.14	1.08	0.96	0.78	0.59	0.39	0.21	0.08	0.01	10.3	10.1		
-80	0.01	0.04	0.10	0.20	0.30	0.41	0.51	0.58	0.62	0.63	0.60	0.53	0.44	0.33	0.22	0.12	0.05	0.01	5.71	4.99		
-90																						
-90 -80 -70 -60 -50 -40 -30 -20 HORIZONTAL (DEG) 20 30 40 50 60 70 80 90																						
Φ t	0.36	2.54	6.93	13.1	20.5	28.1	35.0	40.2	43.0	43.1	40.6	35.6	28.8	21.2	13.8	7.44	2.85	0.45	418			
Φ a	0.11	2.25	6.68	12.9	20.3	28.0	34.9	40.1	42.9	43.1	40.5	35.5	28.7	21.1	13.6	7.22	2.59	0.22		382		

Test System: LSG-1800
Temperature: 25.3 DEG
Operators: G
Test Date: 03-02-2018

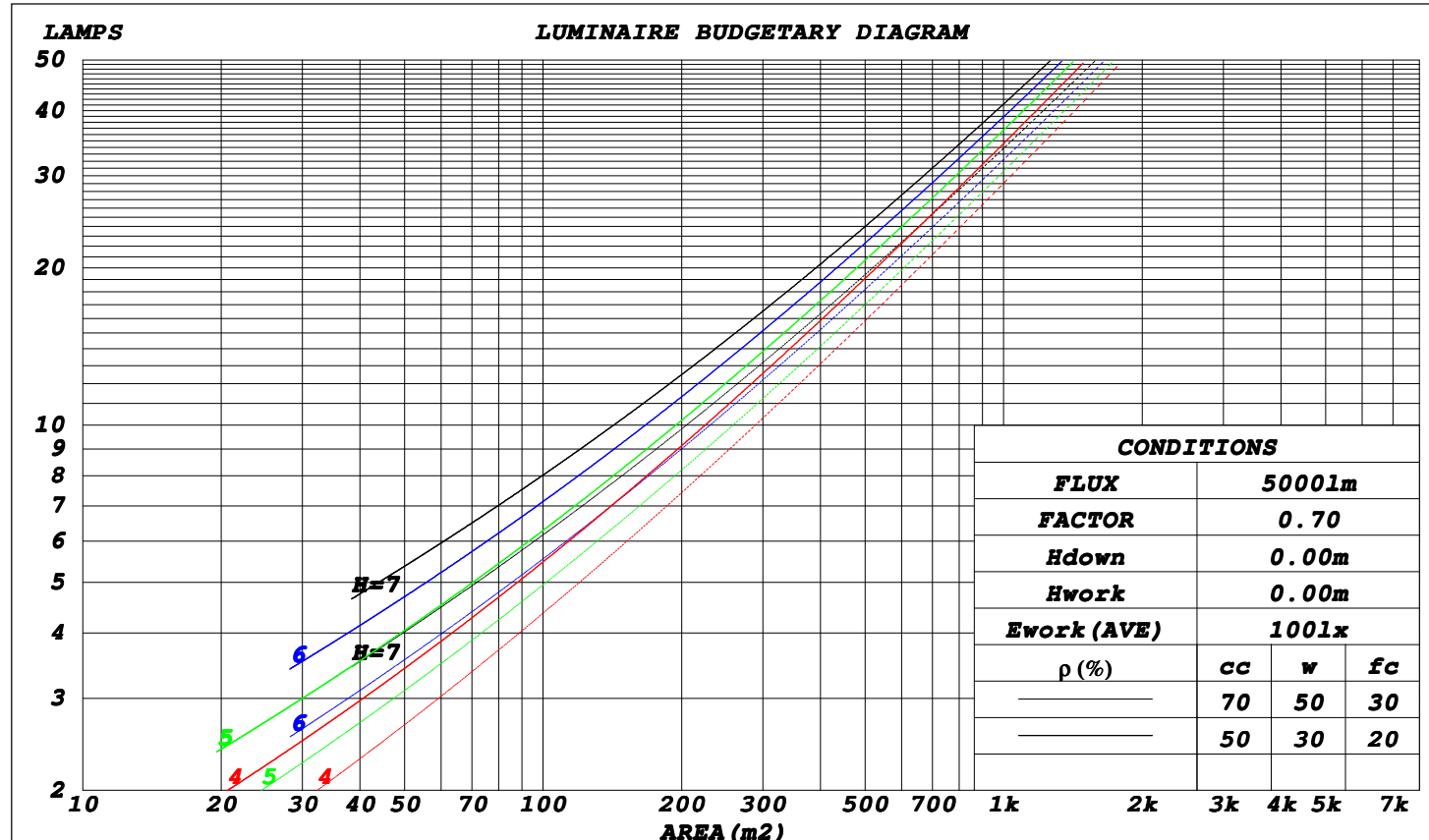
Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity: 65.0%
Test Distance: 10.000 m
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Report number: GO2018-051A

MANUFACTURER: BACKLIGHT SRL	Address: Via Volta 5 - Ornago (MB)				
NAME: MARKER_9.0W/line foot_1ft	TYPE: wall			WEIGHT:	
SPECIFICATION: wall	DIMENSION: 50x305x20			SERIAL No.:	

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Coefficients of Utilization (CU)									
0.0	1.17	1.17	1.17	1.13	1.13	1.13	1.07	1.07	1.07	1.00	1.00	1.00	.95	.95	.95	.92
1.0	1.00	.96	.91	.97	.93	.89	.91	.88	.85	.86	.83	.81	.81	.79	.77	.74
2.0	.87	.79	.73	.84	.77	.72	.79	.74	.69	.75	.70	.66	.70	.67	.63	.61
3.0	.76	.67	.60	.73	.65	.59	.69	.63	.57	.65	.60	.55	.62	.57	.53	.50
4.0	.67	.58	.51	.65	.56	.50	.61	.54	.48	.58	.52	.47	.55	.50	.45	.43
5.0	.59	.50	.43	.58	.49	.43	.55	.47	.41	.52	.45	.40	.49	.44	.39	.37
6.0	.53	.44	.38	.52	.43	.37	.49	.42	.36	.47	.40	.35	.44	.39	.34	.32
7.0	.48	.39	.33	.47	.39	.33	.45	.37	.32	.43	.36	.31	.41	.35	.30	.28
8.0	.44	.35	.29	.43	.35	.29	.41	.34	.28	.39	.32	.28	.37	.31	.27	.25
9.0	.40	.32	.26	.39	.31	.26	.38	.30	.25	.36	.29	.25	.34	.29	.24	.22
10.0	.37	.29	.24	.36	.29	.23	.35	.28	.23	.33	.27	.23	.32	.26	.22	.20



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WEC AND CCEC

Report number: GO2018-051A

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SPECIFICATION: wall	DIMENSION: 50x305x20			SERIAL No.:	

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pf _c	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.341	.194	.062	.332	.189	.060	.314	.180	.057	.297	.171	.055	.282	.163	.053	
2.0	.310	.170	.052	.301	.166	.051	.285	.158	.049	.270	.152	.047	.256	.145	.046	
3.0	.281	.150	.045	.274	.147	.044	.259	.141	.043	.246	.135	.041	.234	.129	.040	
4.0	.257	.133	.039	.250	.131	.039	.237	.126	.038	.225	.121	.036	.214	.116	.035	
5.0	.236	.120	.035	.230	.118	.034	.218	.113	.033	.207	.109	.032	.197	.105	.032	
6.0	.217	.109	.031	.212	.107	.031	.201	.103	.030	.191	.099	.029	.182	.096	.028	
7.0	.202	.100	.028	.196	.098	.028	.187	.094	.027	.178	.091	.027	.170	.088	.026	
8.0	.188	.092	.026	.183	.090	.025	.174	.087	.025	.166	.084	.024	.158	.081	.024	
9.0	.175	.085	.024	.171	.083	.023	.163	.081	.023	.156	.078	.022	.149	.076	.022	
10.0	.165	.079	.022	.161	.078	.022	.153	.075	.021	.147	.073	.021	.140	.070	.020	

pcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients (CCEC)									
0.0	.252	.252	.252	.215	.215	.215	.147	.147	.147	.084	.084	.084	.027	.027	.027	
1.0	.245	.218	.194	.209	.187	.167	.143	.129	.115	.082	.074	.067	.026	.024	.022	
2.0	.237	.194	.158	.203	.167	.137	.139	.116	.095	.080	.067	.056	.026	.022	.018	
3.0	.229	.177	.135	.197	.153	.117	.135	.106	.082	.078	.062	.049	.025	.020	.016	
4.0	.222	.164	.120	.190	.142	.104	.131	.099	.074	.076	.058	.044	.024	.019	.014	
5.0	.214	.154	.110	.184	.133	.095	.127	.093	.067	.073	.055	.040	.024	.018	.013	
6.0	.207	.146	.102	.178	.126	.089	.123	.088	.063	.071	.052	.037	.023	.017	.012	
7.0	.200	.139	.096	.172	.121	.084	.119	.085	.060	.069	.050	.035	.022	.016	.012	
8.0	.194	.133	.092	.167	.116	.080	.115	.081	.057	.067	.048	.034	.022	.016	.011	
9.0	.187	.129	.089	.161	.112	.078	.112	.078	.055	.065	.046	.033	.021	.015	.011	
10.0	.182	.124	.086	.157	.108	.075	.109	.076	.053	.063	.045	.032	.021	.015	.011	

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Test Set: 5.0 deg/s C-Gamma (TYPE C)
Humidity: 65.0%
Test Distance: 10.000 m
Remarks:

Uncorrected UGR Table

Report number: GO2018-051A

MANUFACTURER: BACKLIGHT SRL						Address:Via Volta 5 – Ornago (MB)					
NAME: MARKER_9.0W/line foot_1ft						TYPE:wall		WEIGHT:			
SPECIFICATION:wall						DIMENSION: 50x305x20		SERIAL No.:			
ceiling/cavity	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3	
walls	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3	
working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Room dimensions		Viewed crosswise					Viewed endwise				
x = 2H y = 2H	12.8	14.3	13.2	14.6	15.0	13.4	14.9	13.8	15.2	15.6	
	3H	14.5	15.8	14.9	16.2	16.6	15.4	16.7	15.8	17.1	17.5
	4H	15.2	16.5	15.7	16.9	17.3	16.3	17.6	16.8	18.0	18.4
	6H	15.8	17.0	16.3	17.5	17.9	17.3	18.5	17.7	18.9	19.3
	8H	16.0	17.2	16.5	17.6	18.1	17.7	18.9	18.2	19.3	19.8
	12H	16.2	17.3	16.7	17.8	18.2	18.1	19.3	18.6	19.7	20.2
4H	2H	13.6	14.9	14.1	15.3	15.7	14.1	15.3	14.5	15.7	16.1
	3H	15.5	16.6	16.0	17.1	17.5	16.2	17.3	16.7	17.8	18.3
	4H	16.4	17.4	16.9	17.9	18.4	17.3	18.4	17.8	18.8	19.3
	6H	17.1	18.1	17.7	18.6	19.1	18.5	19.4	19.0	19.9	20.4
	8H	17.4	18.3	18.0	18.8	19.4	19.0	19.9	19.5	20.4	20.9
	12H	17.7	18.4	18.2	19.0	19.6	19.5	20.3	20.1	20.8	21.4
8H	4H	16.9	17.7	17.4	18.3	18.8	17.7	18.6	18.2	19.1	19.6
	6H	17.9	18.6	18.5	19.1	19.7	19.0	19.8	19.6	20.3	20.9
	8H	18.3	19.0	18.9	19.5	20.2	19.8	20.4	20.3	21.0	21.6
	12H	18.7	19.2	19.3	19.8	20.5	20.5	21.0	21.1	21.6	22.2
12H	4H	17.0	17.8	17.5	18.3	18.9	17.7	18.5	18.3	19.0	19.6
	6H	18.1	18.7	18.7	19.3	19.9	19.2	19.8	19.7	20.4	21.0
	8H	18.6	19.2	19.2	19.8	20.4	20.0	20.5	20.6	21.1	21.7
Variations with the observer position at spacings:											
S = 1.0H	+ 0.1 / – 0.1					+ 0.1 / – 0.1					
1.5H	+ 0.2 / – 0.2					+ 0.2 / – 0.2					
2.0H	+ 0.2 / – 0.3					+ 0.2 / – 0.3					

CIE Pub.117 Corrected 418.2 lm Total Lamp Luminous Flux. (8log(F/F0) = -3.0)

Test System: LSG-1800
Temperature: 25.3DEG
Operators: G
Test Date: 03-02-2018

Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity: 65.0%
Test Distance: 10.000 m
Remarks:

UTILIZATION FACTORS TABLE

Report number: GO2018-051A

MANUFACTURER: BACKLIGHT SRL	Address: Via Volta 5 - Ornago (MB)	
NAME: MARKER_9.0W/line foot_1ft	TYPE: wall	WEIGHT:
SPECIFICATION: wall	DIMENSION: 50x305x20	SERIAL No.:

REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	53	41	34	52	41	34	51	40	34	27
0.80	63	51	43	62	50	43	59	49	42	35
1.00	71	59	51	69	58	51	67	59	50	42
1.25	78	67	59	76	66	58	73	64	57	49
1.50	83	72	65	81	71	64	77	69	62	53
2.00	90	81	73	88	79	72	83	76	70	60
2.50	94	86	79	92	84	77	87	80	75	64
3.00	98	90	84	95	88	82	90	84	79	68
4.00	102	96	90	99	93	88	94	89	85	73
5.00	105	99	94	102	97	92	96	92	88	76
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SERNOM = 1.25		

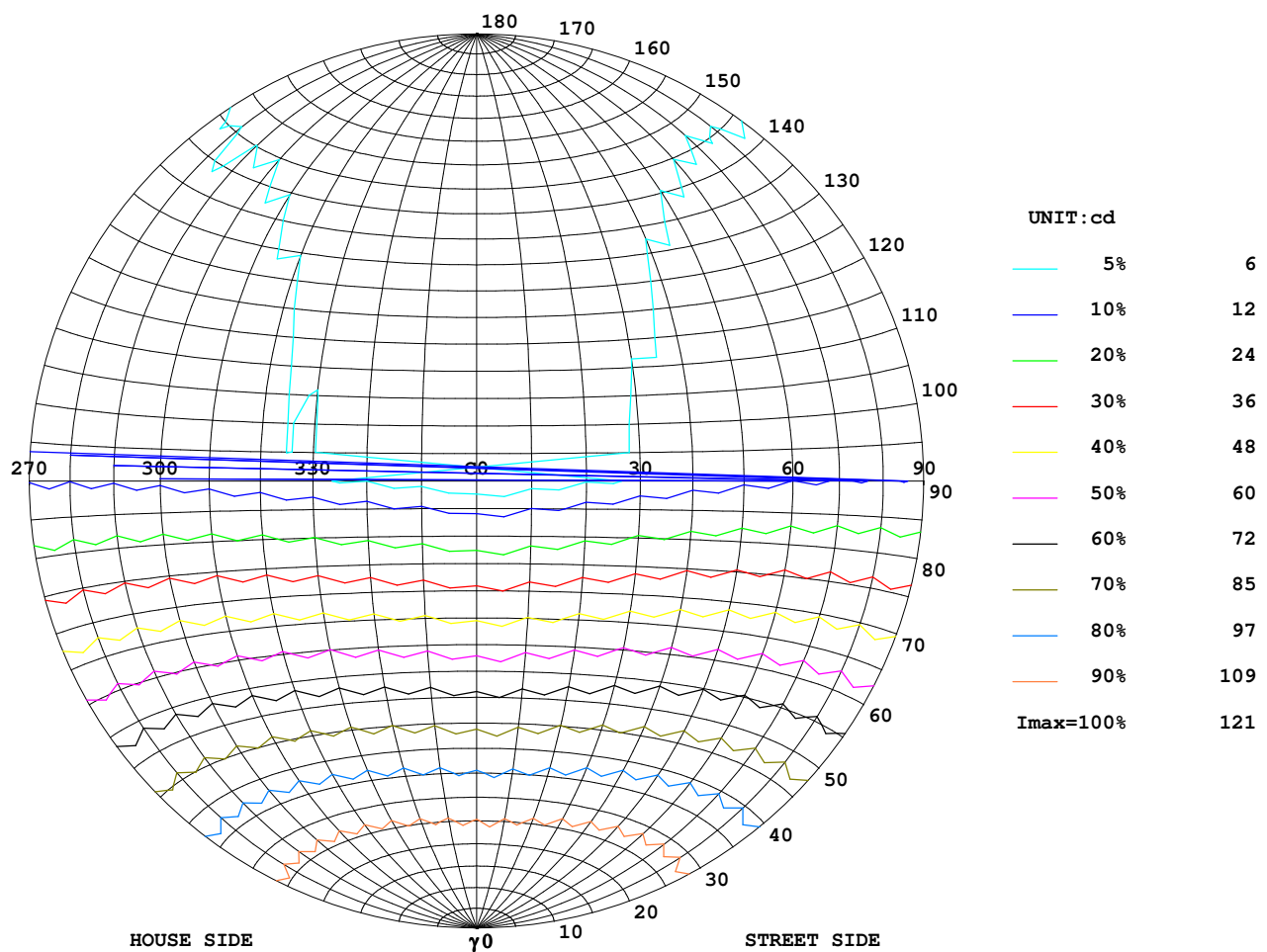
Test System: LSG-1800
Temperature: 25.3 DEG
Operators: G
Test Date: 03-02-2018

Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity: 65.0%
Test Distance: 10.000 m
Remarks:

ISOCANDELA DIAGRAM

Report number: GO2018-051A

MANUFACTURER: BACKLIGHT SRL	Address: Via Volta 5 - Ornago (MB)	
NAME: MARKER_9.0W/line foot_1ft	TYPE: wall	WEIGHT:
SPECIFICATION: wall	DIMENSION: 50x305x20	SERIAL No.:



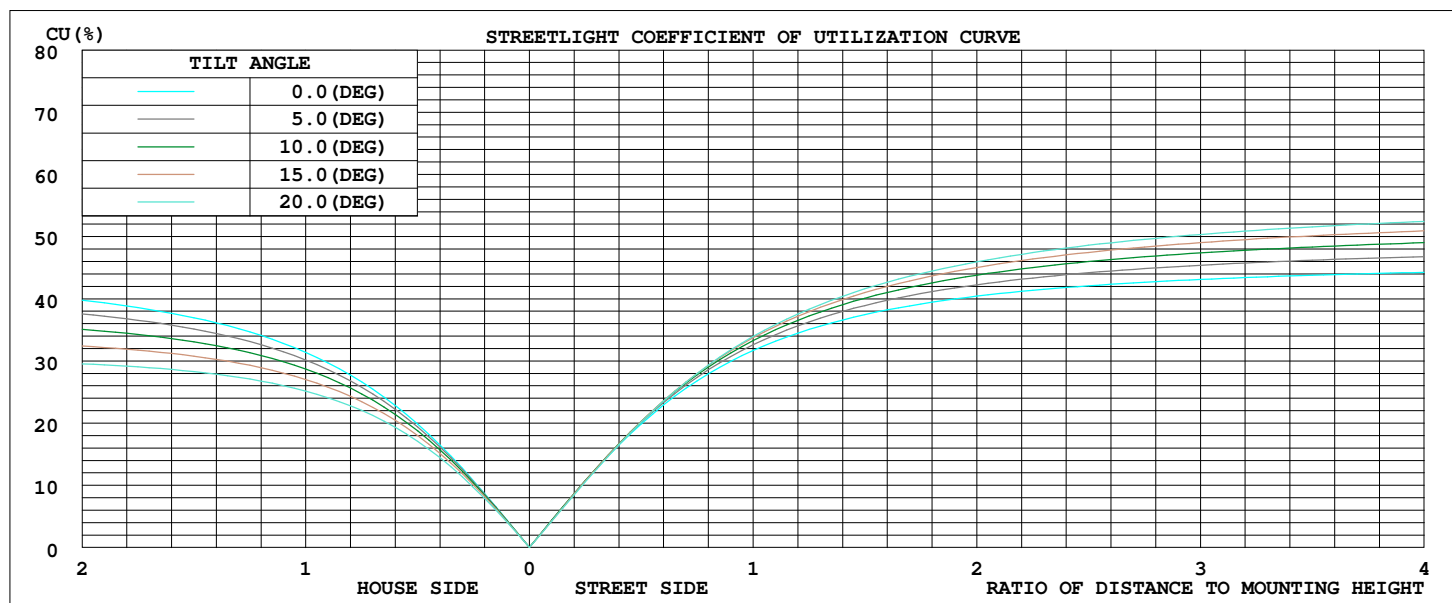
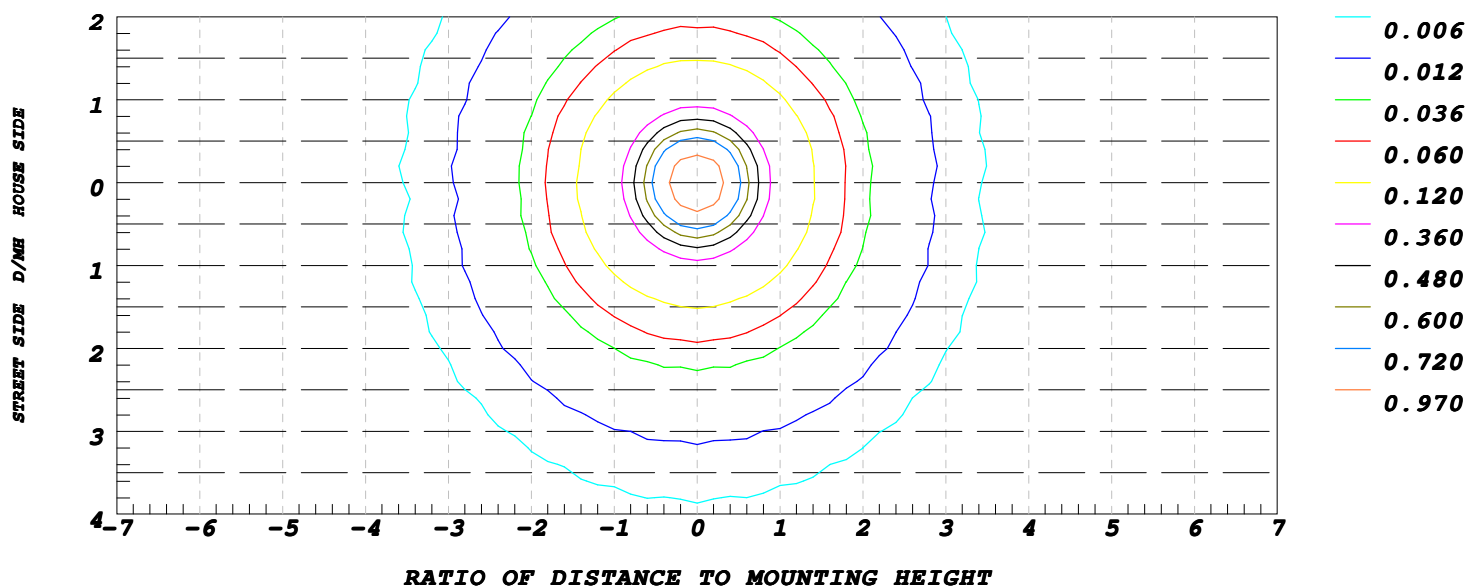
Test System: LSG-1800
 Temperature: 25.3 DEG
 Operators: G
 Test Date: 03-02-2018

Test Set: 5.0 deg/s C-Gamma (TYPE C)
 Humidity: 65.0%
 Test Distance: 10.000 m
 Remarks:

ISOLUX DIAGRAM

Report number: GO2018-051A

MANUFACTURER: BACKLIGHT SRL	Address: Via Volta 5 - Ornago (MB)	
NAME: MARKER_9.0W/line foot_1ft	TYPE: wall	WEIGHT:
SPECIFICATION: wall	DIMENSION: 50x305x20	SERIAL No.:

ILLUMINANCE AT MH=10 m, Enadir = 1.21 lx

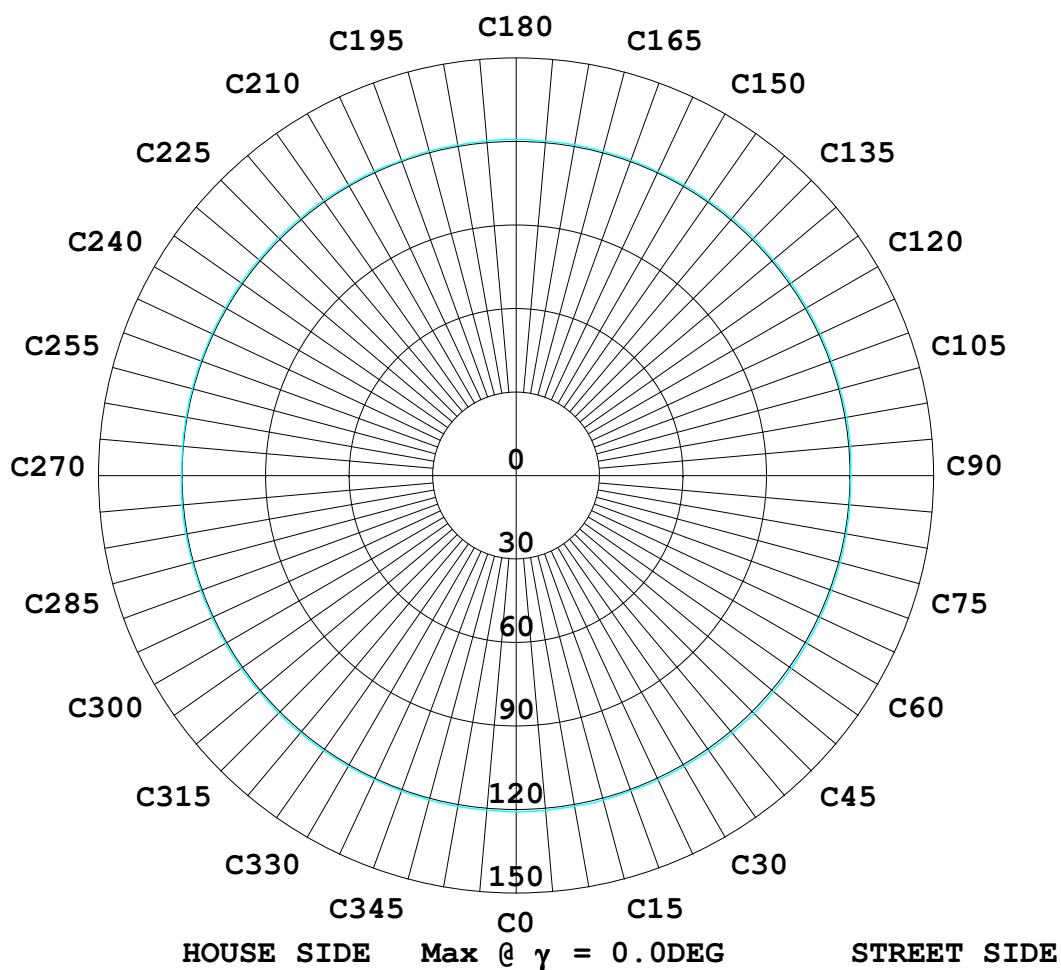
Test System: LSG-1800
Temperature: 25.3 DEG
Operators: G
Test Date: 03-02-2018

Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity: 65.0%
Test Distance: 10.000 m
Remarks:

ISOCANDELA DIAGRAM

Report number: GO2018-051A

MANUFACTURER: BACKLIGHT SRL	Address: Via Volta 5 - Ornago (MB)	
NAME: MARKER_9.0W/line foot_1ft	TYPE: wall	WEIGHT:
SPECIFICATION: wall	DIMENSION: 50x305x20	SERIAL No.:



Test System: LSG-1800
 Temperature: 25.3DEG
 Operators: G
 Test Date: 03-02-2018

Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity: 65.0%
 Test Distance: 10.000 m
 Remarks: