

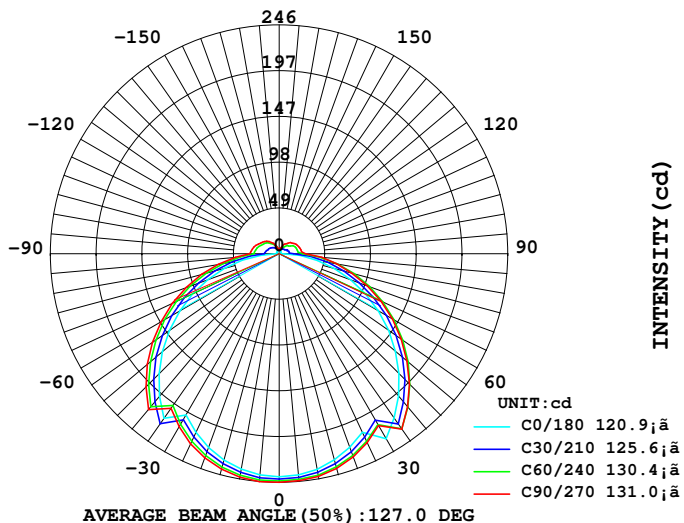
LUMINAIRE PHOTOMETRIC TEST REPORT

Report number: GO2018-064

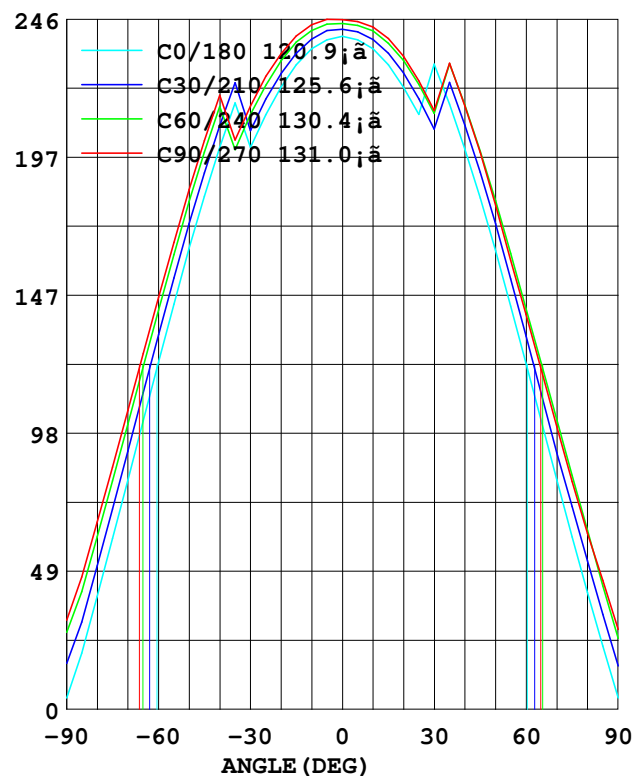
MANUFACTURER: BACKLIGHT SRL	Address: Via Volta 5 - Ornago (MB)	
NAME: HALO_14W/line meter_1000mm	TYPE: wall	WEIGHT:
SPECIFICATION: wall	DIMENSION: 1000x50x20	SERIAL No.:

DATA OF LAMP		Imax(cd)	245.7	S/MH (C0/180)	1.38
MODEL	HALO_14W/line meter_1000mm	Imax(cd)	100.0	S/MH (C90/270)	1.28
NOMINAL POWER(W)	13.7	TOTAL FLUX(lm)	933.86	Voltage(V)	24.00
RATED VOLTAGE(V)	24	EFFICIENCY (lm/W)	68.2	Current (A)	0.570
NOMINAL FLUX(lm)	933.9	η up(%)	8.9	Power(W)	13.70
LAMPS QUANTITY	1	η down(%)	91.1	Power Factor(PF)	1.000
TEST VOLTAGE(V)	24.0	Effective Flux(lm)	862.1	EEI	0.231

LUMINOUS INTENSITY DISTRIBUTION



LUMINOUS INTENSITY DISTRIBUTION



Test System: LSG-1800
 Temperature: 25.3 DEG
 Operators: G
 Test Date: 03-07-2018

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

ZONAL FLUX DIAGRAM

Report number: GO2018-064

MANUFACTURER: BACKLIGHT SRL	Address: Via Volta 5 - Ornago (MB)	
NAME: HALO_14W/line meter_1000mm	TYPE: wall	WEIGHT:
SPECIFICATION: wall	DIMENSION: 1000x50x20	SERIAL No.:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	zone	total
10.0	235.1	239.5	243.8	240.7	235.2	240.8	243.0	241.1	0- 10	23.07	23.07
20.0	221.6	227.3	233.5	229.0	221.6	230.6	232.5	230.2	10- 20	66.43	89.51
30.0	200.0	206.8	214.8	208.9	229.8	211.9	213.1	210.7	20- 30	101.4	190.9
40.0	200.0	208.1	218.6	209.9	199.5	215.5	214.8	213.1	30- 40	134.1	325.1
50.0	164.1	173.0	185.0	174.8	163.3	181.8	179.5	178.0	40- 50	149.4	474.5
60.0	123.8	133.8	146.8	135.1	123.1	143.0	140.6	138.5	50- 60	139.8	614.4
70.0	81.59	93.00	106.4	93.90	81.80	102.9	100.6	99.90	60- 70	115.0	729.4
80.0	40.20	53.29	66.59	53.60	41.60	63.09	62.69	60.20	70- 80	80.01	809.4
90.0	4.000	20.60	31.70	21.60	4.100	23.60	28.50	22.70	80- 90	40.83	850.3
100.0	3.200	19.40	29.60	19.50	1.600	17.80	23.90	19.60	90-100	19.99	870.3
110.0	2.800	17.29	26.80	17.20	1.600	16.90	22.50	17.60	100-110	17.49	887.8
120.0	2.800	15.60	23.19	14.90	2.000	12.70	20.80	15.70	110-120	14.74	902.5
130.0	3.000	13.60	20.70	10.59	2.300	11.70	18.09	13.90	120-130	11.66	914.2
140.0	3.300	11.20	17.10	7.800	2.600	9.700	15.20	12.10	130-140	8.606	922.8
150.0	3.500	8.700	13.40	6.900	2.900	8.299	12.20	10.40	140-150	5.713	928.5
160.0	3.700	6.300	8.700	5.800	3.200	6.700	8.200	8.200	150-160	3.345	931.8
170.0	3.700	4.200	5.400	4.300	3.400	5.200	5.700	6.100	160-170	1.567	933.4
180.0	3.600	3.600	3.600	4.100	3.600	3.800	3.200	4.400	170-180	0.407	933.8
DEG	LUMINOUS INTENSITY: cd									UNIT: lm	

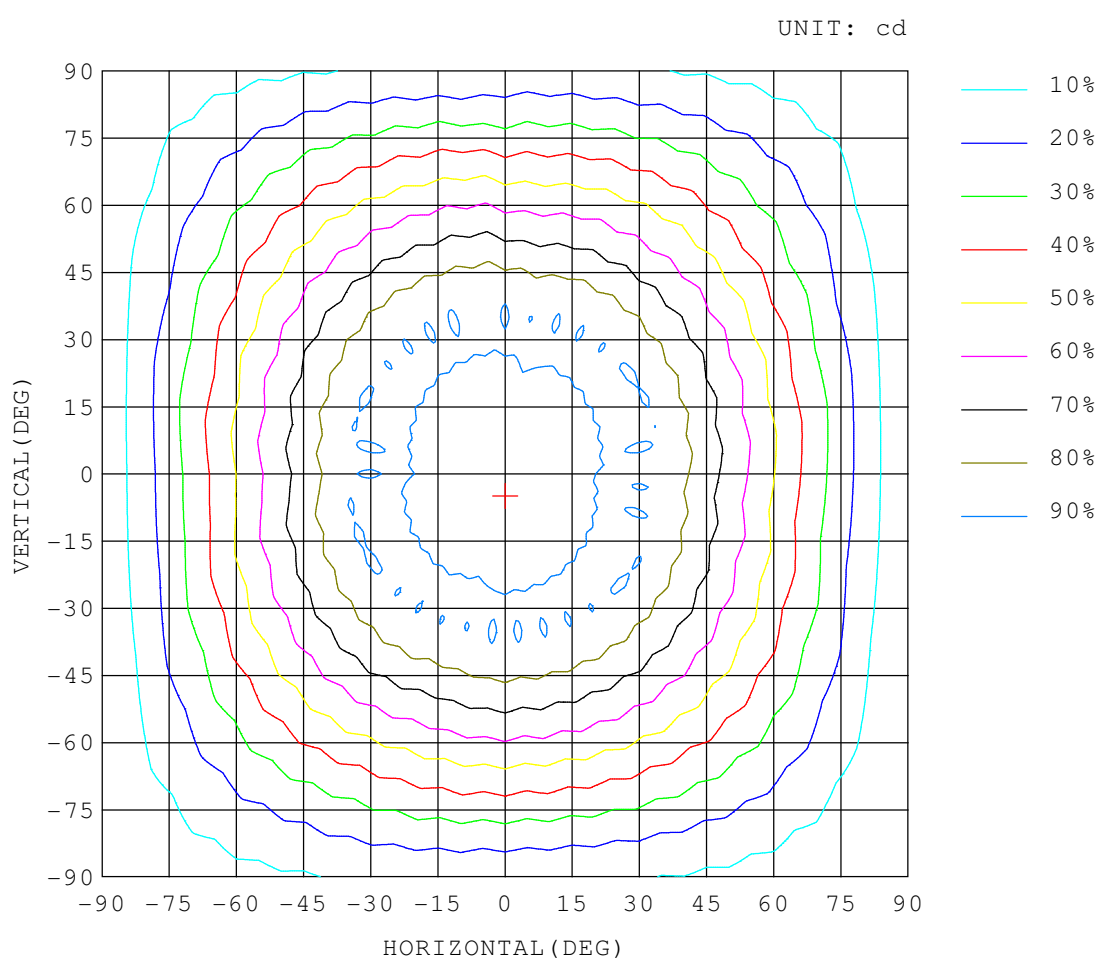
Test System: LSG-1800
Temperature: 25.3 DEG
Operators: G
Test Date: 03-07-2018

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

ISOCANDELA DIAGRAM

Report number: GO2018-064

MANUFACTURER: BACKLIGHT SRL	Address: Via Volta 5 - Ornago (MB)	
NAME: HALO_14W/line meter_1000mm	TYPE: wall	WEIGHT:
SPECIFICATION: wall	DIMENSION: 1000x50x20	SERIAL No.:



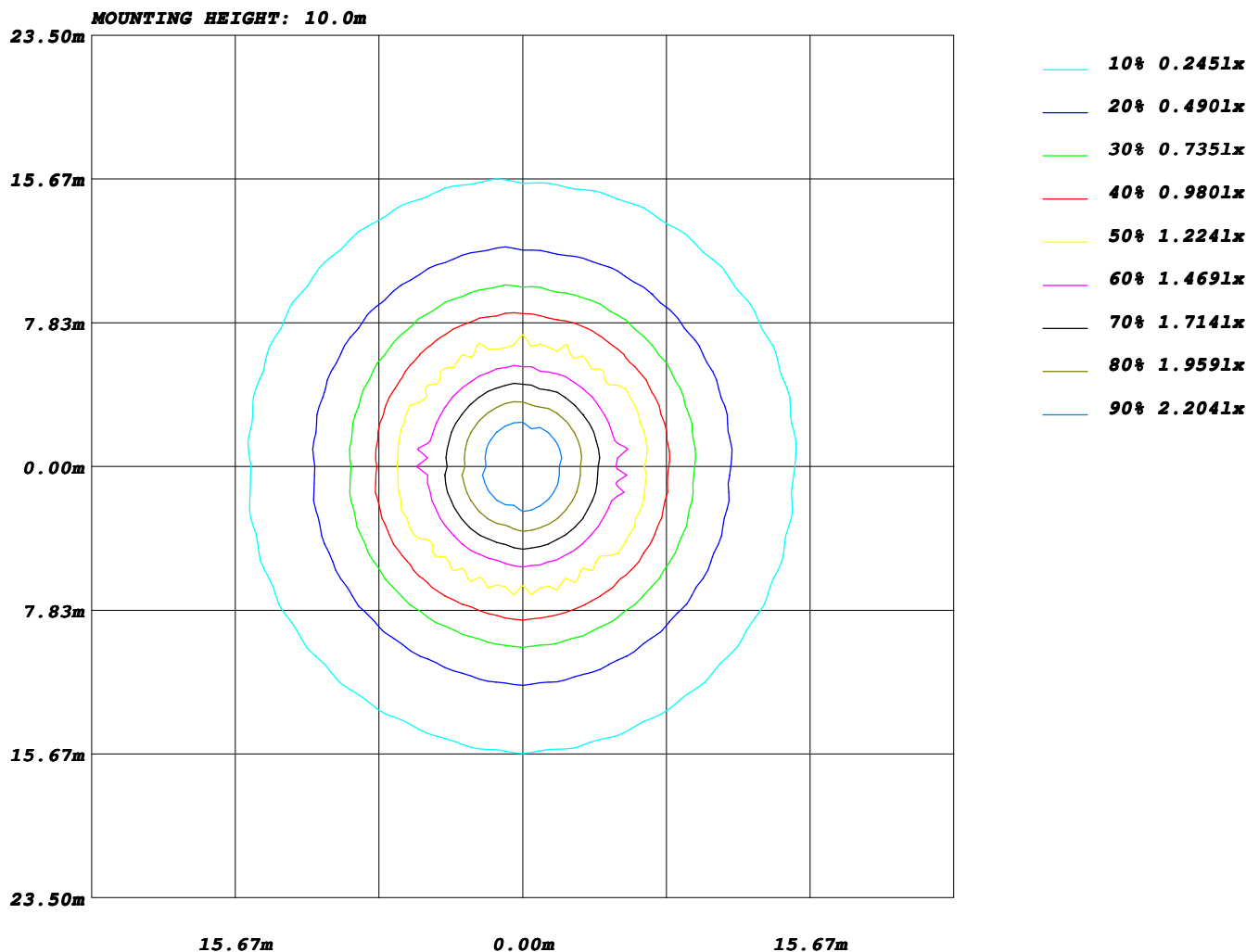
Test System: LSG-1800
Temperature: 25.3 DEG
Operators: G
Test Date: 03-07-2018

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

ISOLUX DIAGRAM

Report number: GO2018-064

MANUFACTURER: BACKLIGHT SRL	Address: Via Volta 5 - Ornago (MB)	
NAME: HALO_14W/line meter_1000mm	TYPE: wall	WEIGHT:
SPECIFICATION: wall	DIMENSION: 1000x50x20	SERIAL No.:



Test System: LSG-1800
Temperature: 25.3DEG
Operators: G
Test Date: 03-07-2018

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

AREA LUMINOUS FLUX

Report number: GO2018-064

MANUFACTURER: BACKLIGHT SRL	Address: Via Volta 5 - Ornago (MB)	
NAME: HALO_14W/line meter_1000mm	TYPE: wall	WEIGHT:
SPECIFICATION: wall	DIMENSION: 1000x50x20	SERIAL No.:

VERTICAL (DEG)	AREA FLUX DIAGRAM																		UNIT:lm		Φ t	Φ a
	0.02	0.12	0.29	0.52	0.77	1.02	1.23	1.36	1.41	1.46	1.38	1.21	0.99	0.73	0.48	0.26	0.10	0.02	13.4	12.4		
	80	0.04	0.20	0.49	0.89	1.35	1.81	2.22	2.51	2.58	2.56	2.45	2.16	1.75	1.29	0.84	0.45	0.17	0.03	23.8	23.5	
	70	0.05	0.27	0.68	1.25	1.92	2.59	3.19	3.64	3.82	3.69	3.53	3.12	2.52	1.85	1.20	0.64	0.24	0.04	34.2	34.1	
	60	0.06	0.33	0.85	1.58	2.45	3.34	4.14	4.73	5.00	4.83	4.59	4.03	3.25	2.37	1.52	0.81	0.30	0.05	44.2	44.1	
	50	0.07	0.39	1.01	1.90	2.95	4.03	5.00	5.74	6.10	5.94	5.62	4.89	3.92	2.86	1.83	0.96	0.35	0.06	53.6	53.6	
	40	0.07	0.44	1.17	2.17	3.37	4.62	5.70	6.36	6.46	6.44	6.28	5.62	4.54	3.30	2.11	1.11	0.40	0.06	60.3	60.2	
	30	0.08	0.49	1.27	2.40	3.70	5.04	5.85	6.36	6.77	6.66	6.31	5.89	5.00	3.64	2.34	1.21	0.46	0.07	63.5	63.5	
	0.08	0.52	1.34	2.50	3.91	5.30	5.87	6.68	7.18	7.10	6.65	5.87	5.26	3.86	2.46	1.30	0.50	0.07	66.5	66.4		
	0.08	0.51	1.36	2.56	3.97	5.33	5.97	6.78	7.31	7.30	6.80	5.95	5.29	3.95	2.55	1.35	0.50	0.07	67.6	67.6		
	0.08	0.50	1.33	2.53	3.97	5.32	5.96	6.84	7.31	7.29	6.74	5.94	5.26	3.88	2.48	1.30	0.49	0.07	67.3	67.3		
	0.07	0.49	1.33	2.53	3.91	5.30	5.90	6.67	7.11	7.15	6.62	5.83	5.21	3.81	2.44	1.27	0.46	0.07	66.2	66.1		
	0.07	0.47	1.27	2.37	3.69	5.03	5.83	6.30	6.66	6.72	6.30	5.90	4.96	3.61	2.30	1.21	0.44	0.06	63.2	63.2		
	0.06	0.44	1.14	2.16	3.35	4.57	5.62	6.18	6.49	6.53	6.23	5.59	4.51	3.29	2.10	1.09	0.41	0.06	59.8	59.8		
	0.06	0.39	1.01	1.88	2.91	3.96	4.88	5.53	6.00	6.02	5.60	4.88	3.92	2.86	1.83	0.97	0.36	0.05	53.1	53.0		
	0.05	0.32	0.84	1.56	2.39	3.23	3.96	4.53	4.93	4.93	4.59	3.99	3.21	2.35	1.51	0.80	0.29	0.04	43.5	43.5		
	0.04	0.25	0.65	1.19	1.81	2.44	3.01	3.47	3.75	3.74	3.48	3.04	2.45	1.79	1.16	0.62	0.23	0.03	33.2	33.0		
	0.03	0.18	0.46	0.83	1.24	1.68	2.08	2.40	2.55	2.53	2.36	2.06	1.66	1.22	0.79	0.42	0.16	0.03	22.7	22.4		
	0.02	0.12	0.28	0.50	0.73	0.98	1.20	1.36	1.41	1.39	1.29	1.13	0.92	0.68	0.45	0.25	0.10	0.02	12.8	11.8		
	-90																					
-90	-80	-70	-60	-50	-40	-30	-20	HORIZONTAL (DEG)				20	30	40	50	60	70	80	90			
Φ t	1.02	6.42	16.8	31.3	48.4	65.6	77.6	87.5	92.9	92.3	86.9	77.1	64.6	47.4	30.4	16.0	5.96	0.89	934			
Φ a	0.57	5.96	16.4	31.1	48.3	65.6	77.6	87.5	92.9	92.3	86.9	77.1	64.6	47.2	30.1	15.6	5.43	0.41		862		

Test System: LSG-1800
Temperature: 25.3 DEG
Operators: G
Test Date: 03-07-2018

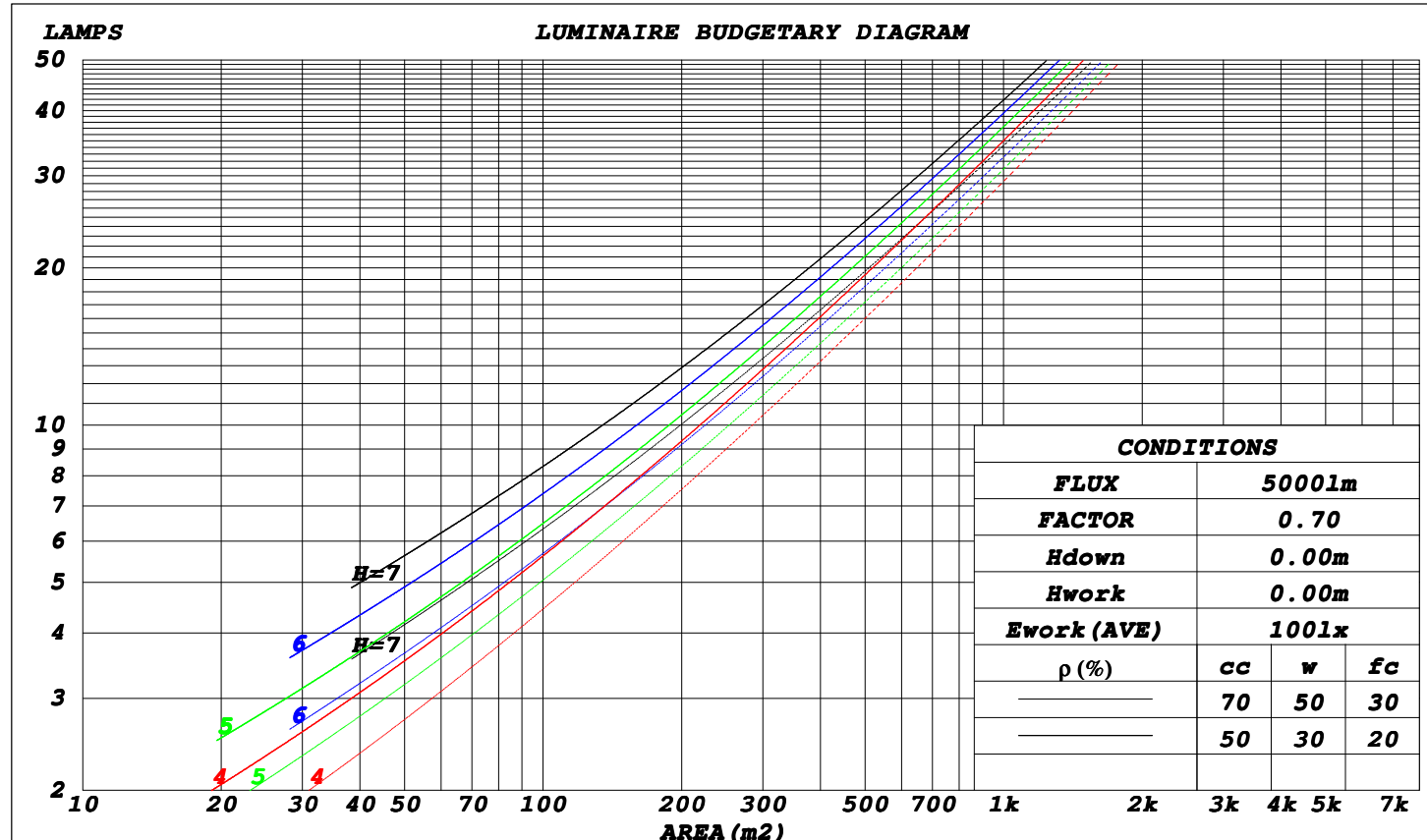
Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity: 65.0%
Test Distance: 10.000 m
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Report number: GO2018-064

MANUFACTURER: BACKLIGHT SRL	Address: Via Volta 5 - Ornago (MB)				
NAME: HALO_14W/line meter_1000mm	TYPE: wall			WEIGHT:	
SPECIFICATION: wall	DIMENSION: 1000x50x20			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	1.06	1.06	1.06	.00	.00	.00	.94	.94	.94	.91
1.0	.00	.95	.90	.96	.92	.88	.91	.87	.84	.85	.82	.80	.80	.78	.76	.73
2.0	.86	.78	.72	.83	.76	.71	.78	.72	.68	.73	.69	.65	.69	.65	.62	.59
3.0	.75	.66	.59	.72	.64	.58	.68	.61	.56	.64	.58	.54	.60	.56	.52	.49
4.0	.66	.56	.49	.64	.55	.48	.60	.53	.47	.57	.50	.45	.53	.48	.44	.41
5.0	.58	.49	.42	.57	.48	.41	.53	.46	.40	.50	.44	.39	.48	.42	.38	.35
6.0	.52	.43	.36	.51	.42	.36	.48	.40	.35	.45	.39	.34	.43	.37	.33	.30
7.0	.47	.38	.32	.46	.37	.31	.43	.36	.30	.41	.35	.30	.39	.33	.29	.27
8.0	.43	.34	.28	.42	.33	.28	.40	.32	.27	.38	.31	.26	.36	.30	.26	.23
9.0	.39	.31	.25	.38	.30	.25	.36	.29	.24	.35	.28	.24	.33	.27	.23	.21
10.0	.36	.28	.23	.35	.27	.22	.34	.27	.22	.32	.26	.21	.31	.25	.21	.19



Test System: LSG-1800
 Temperature: 25.3DEG
 Operators: G
 Test Date: 03-07-2018

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

WEC AND CCEC

Report number: GO2018-064

MANUFACTURER: BACKLIGHT SRL	Address: Via Volta 5 - Ornago (MB)				
NAME: HALO_14W/line meter_1000mm	TYPE: wall			WEIGHT:	
SPECIFICATION: wall	DIMENSION: 1000x50x20			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						Wall Exitance Coefficients (WEC)									
0.0																
1.0	.349	.198	.063	.339	.193	.061	.321	.184	.059	.304	.175	.056	.288	.167	.054	
2.0	.316	.173	.053	.307	.169	.052	.290	.161	.050	.275	.154	.048	.261	.147	.046	
3.0	.286	.152	.046	.278	.149	.045	.263	.143	.043	.250	.137	.042	.237	.131	.041	
4.0	.261	.136	.040	.254	.133	.039	.240	.127	.038	.228	.122	.037	.216	.118	.036	
5.0	.239	.122	.035	.233	.119	.035	.221	.115	.034	.209	.110	.033	.199	.106	.032	
6.0	.220	.110	.032	.215	.108	.031	.204	.104	.030	.193	.100	.030	.184	.097	.029	
7.0	.204	.101	.029	.199	.099	.028	.189	.095	.028	.180	.092	.027	.171	.089	.026	
8.0	.190	.093	.026	.185	.091	.026	.176	.088	.025	.168	.085	.024	.159	.082	.024	
9.0	.177	.086	.024	.173	.084	.024	.165	.081	.023	.157	.079	.023	.150	.076	.022	
10.0	.166	.080	.022	.162	.078	.022	.155	.076	.021	.148	.073	.021	.141	.071	.020	

pcc	80%			70%			50%			30%			10%			0
p _w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
p _{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients (CCEC)									
0.0	.259	.259	.259	.221	.221	.221	.151	.151	.151	.087	.087	.087	.028	.028	.028	
1.0	.252	.225	.200	.215	.193	.172	.147	.133	.119	.085	.077	.069	.027	.025	.022	
2.0	.245	.201	.164	.209	.173	.142	.144	.120	.099	.083	.070	.058	.027	.023	.019	
3.0	.237	.184	.142	.203	.159	.123	.140	.110	.086	.081	.064	.051	.026	.021	.017	
4.0	.230	.171	.126	.197	.148	.110	.135	.103	.077	.078	.060	.046	.025	.020	.015	
5.0	.222	.161	.116	.191	.139	.101	.131	.097	.071	.076	.057	.042	.025	.019	.014	
6.0	.215	.153	.108	.185	.132	.094	.127	.093	.067	.074	.055	.040	.024	.018	.013	
7.0	.208	.146	.103	.179	.127	.090	.124	.089	.064	.072	.052	.038	.023	.017	.013	
8.0	.201	.141	.099	.173	.122	.086	.120	.086	.061	.070	.050	.036	.023	.017	.012	
9.0	.195	.136	.096	.168	.118	.083	.116	.083	.059	.068	.049	.035	.022	.016	.012	
10.0	.189	.131	.093	.163	.114	.081	.113	.080	.058	.066	.047	.034	.021	.016	.011	

Test System: LSG-1800
Temperature: 25.3 DEG
Operators: G
Test Date: 03-07-2018

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

Uncorrected UGR Table

Report number: GO2018-064

MANUFACTURER: BACKLIGHT SRL						Address:Via Volta 5 – Ornago (MB)					
NAME: HALO_14W/line meter_1000mm						TYPE:wall		WEIGHT:			
SPECIFICATION:wall						DIMENSION: 1000x50x20		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	15.5	17.0	15.9	17.3	17.7	16.2	17.6	16.6	18.0	18.4	
	3H	17.1	18.5	17.5	18.9	19.3	18.1	19.5	18.5	19.9	20.3
	4H	17.8	19.1	18.2	19.5	19.9	19.1	20.3	19.5	20.8	21.2
	6H	18.3	19.5	18.8	20.0	20.5	20.0	21.2	20.4	21.6	22.1
	8H	18.5	19.7	19.0	20.1	20.6	20.3	21.5	20.8	22.0	22.4
	12H	18.6	19.7	19.1	20.2	20.7	20.8	21.9	21.3	22.3	22.8
4H	2H	16.3	17.6	16.7	18.0	18.4	16.8	18.1	17.2	18.5	18.9
	3H	18.1	19.2	18.6	19.7	20.2	18.9	20.0	19.4	20.5	21.0
	4H	18.9	20.0	19.4	20.4	21.0	20.0	21.0	20.5	21.5	22.1
	6H	19.6	20.5	20.1	21.0	21.6	21.1	22.0	21.6	22.5	23.1
	8H	19.8	20.7	20.4	21.2	21.8	21.6	22.4	22.1	22.9	23.5
	12H	20.0	20.8	20.5	21.3	21.9	22.1	22.9	22.6	23.4	24.0
8H	4H	19.4	20.3	20.0	20.8	21.4	20.3	21.2	20.9	21.7	22.3
	6H	20.3	21.0	20.9	21.6	22.2	21.6	22.3	22.2	22.9	23.5
	8H	20.6	21.3	21.2	21.8	22.5	22.2	22.9	22.8	23.5	24.1
	12H	20.9	21.5	21.5	22.1	22.7	22.9	23.5	23.5	24.1	24.7
12H	4H	19.5	20.3	20.0	20.8	21.4	20.3	21.1	20.9	21.7	22.3
	6H	20.4	21.1	21.0	21.7	22.3	21.7	22.3	22.3	22.9	23.5
	8H	20.9	21.4	21.5	22.0	22.7	22.4	23.0	23.0	23.5	24.2
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					+ 0.1 / – 0.2					

CIE Pub.117 Corrected 933.9 lm Total Lamp Luminous Flux. (8log(F/F0) = -0.2)

Test System: LSG-1800
 Temperature: 25.3DEG
 Operators: G
 Test Date: 03-07-2018

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

UTILIZATION FACTORS TABLE

Report number: GO2018-064

MANUFACTURER: BACKLIGHT SRL	Address: Via Volta 5 - Ornago (MB)	
NAME: HALO_14W/line meter_1000mm	TYPE: wall	WEIGHT:
SPECIFICATION: wall	DIMENSION: 1000x50x20	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) $k(RI) \times RCR = 5$									
$k = 0.60$	52	39	32	51	39	32	49	38	32	25
0.80	61	49	41	60	48	41	58	47	40	32
1.00	70	57	49	68	57	49	65	58	48	40
1.25	77	65	57	75	64	56	71	62	55	47
1.50	82	71	63	80	69	62	76	67	60	51
2.00	89	79	72	87	78	71	82	74	68	59
2.50	93	84	77	91	82	76	86	79	73	63
3.00	97	89	82	94	87	81	89	83	78	67
4.00	102	95	89	98	92	87	93	88	83	72
5.00	104	98	93	101	96	91	95	91	87	75
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: 03-07-2018

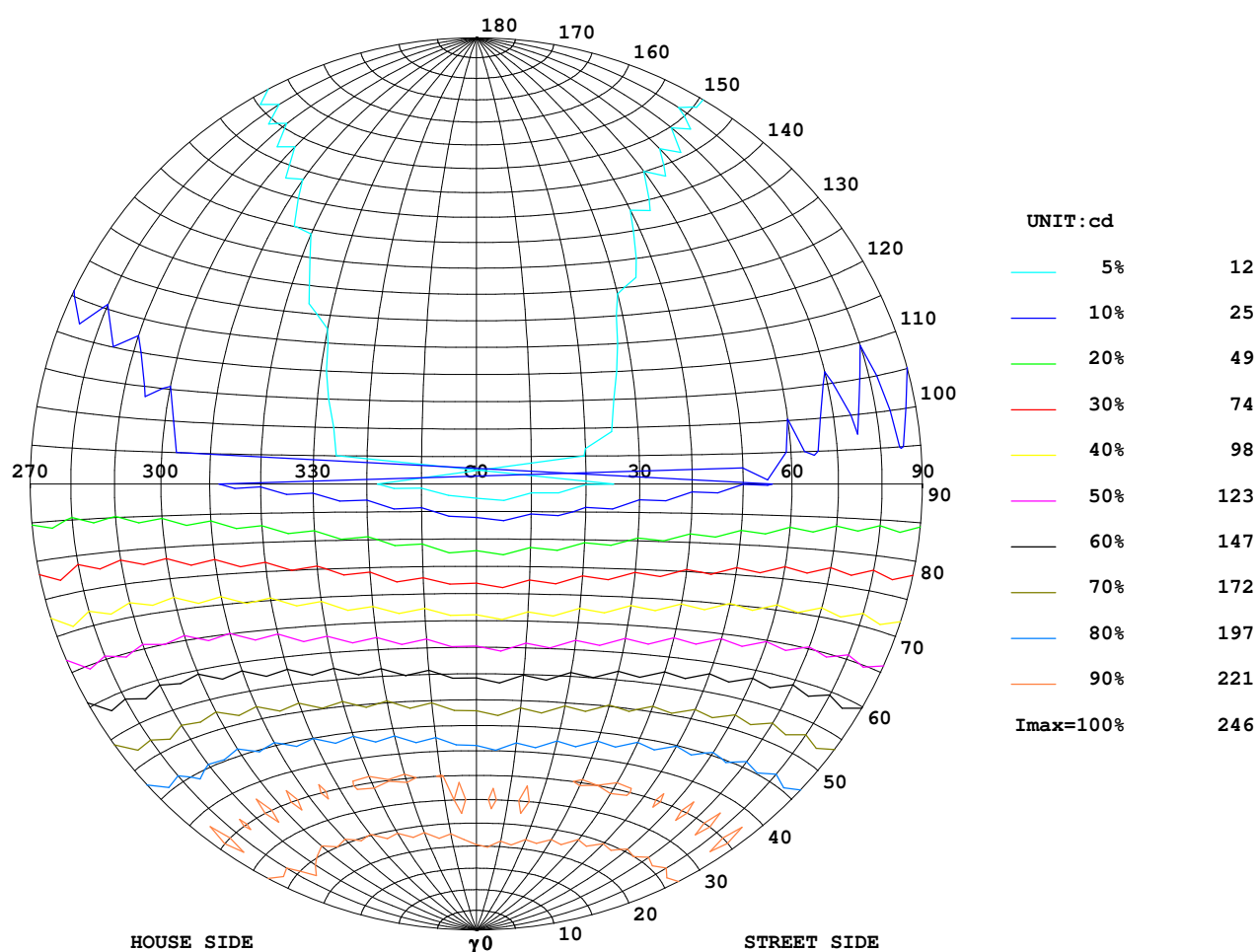
Test Set: 5.0 deg/s C-Gamma (TYPE C)
 Humidity: 65.0%
 Test Distance: 10.000 m
 Remarks:



ISOCANDELA DIAGRAM

Report number: GO2018-064

MANUFACTURER: BACKLIGHT SRL	Address: Via Volta 5 - Ornago (MB)	
NAME: HALO_14W/line meter_1000mm	TYPE: wall	WEIGHT:
SPECIFICATION: wall	DIMENSION: 1000x50x20	SERIAL No.:



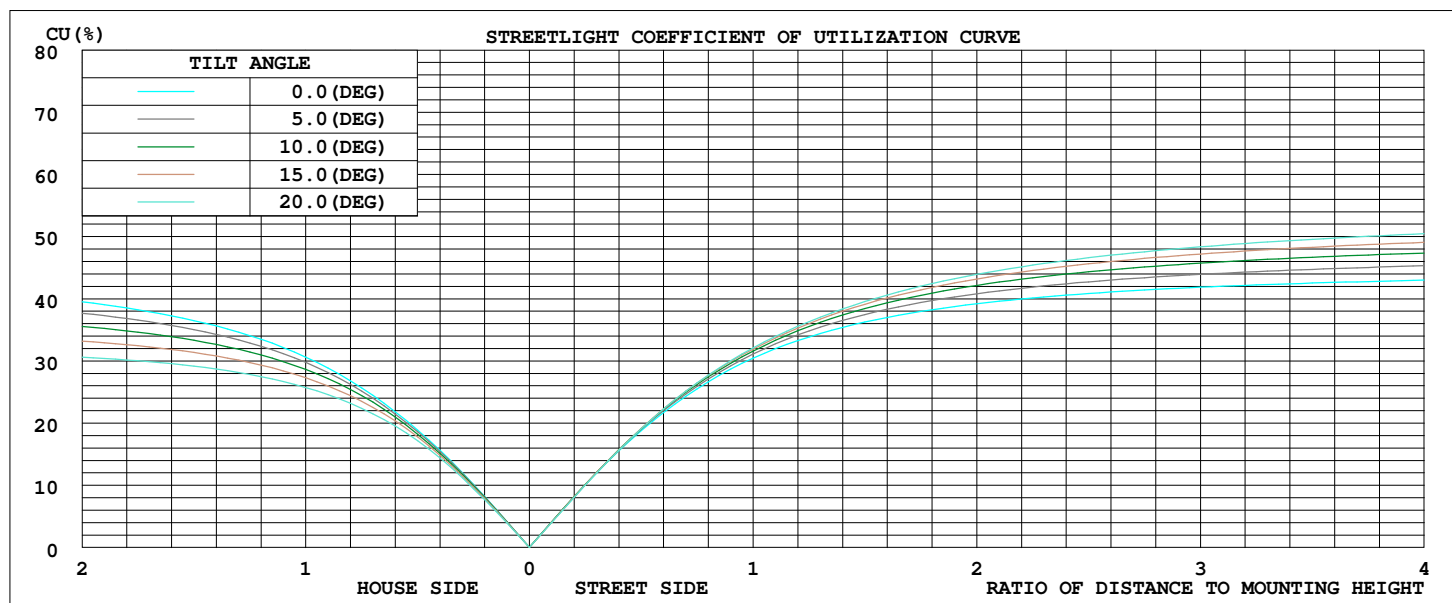
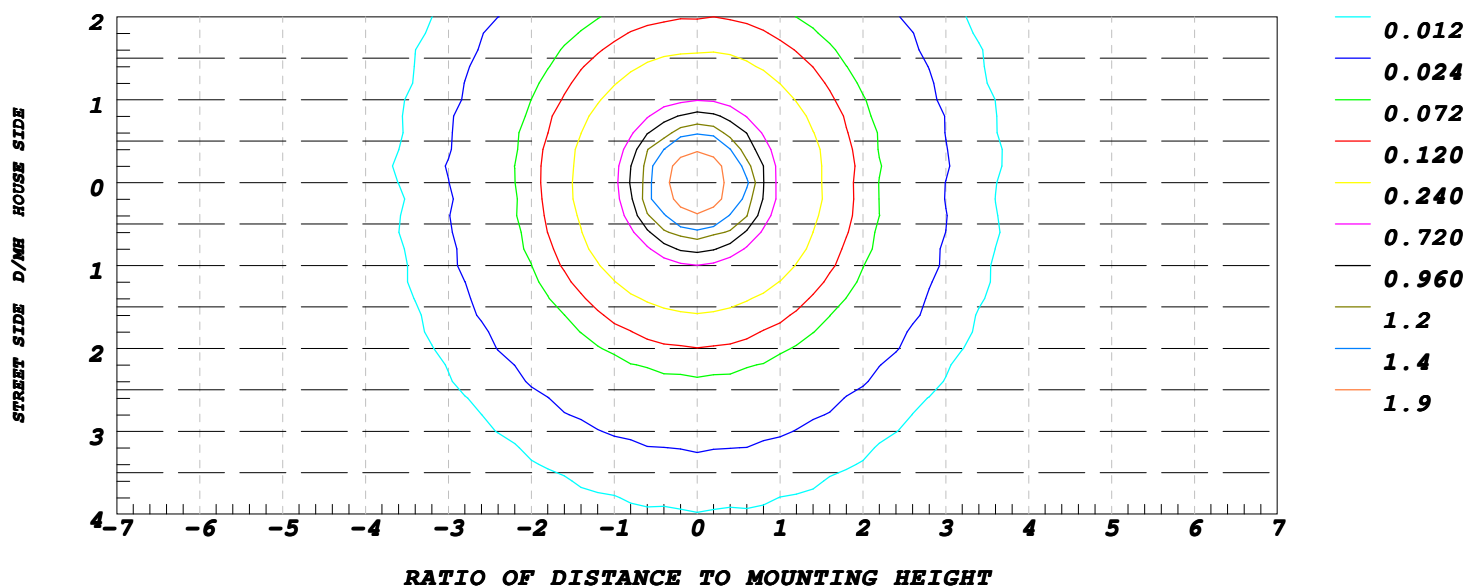
Test System: LSG-1800
 Temperature: 25.3 DEG
 Operators: G
 Test Date: 03-07-2018

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

ISOLUX DIAGRAM

Report number: GO2018-064

MANUFACTURER: BACKLIGHT SRL	Address: Via Volta 5 - Ornago (MB)	
NAME: HALO_14W/line meter_1000mm	TYPE: wall	WEIGHT:
SPECIFICATION: wall	DIMENSION: 1000x50x20	SERIAL No.:

ILLUMINANCE AT MH=10 m, Enadir = 2.40 lx

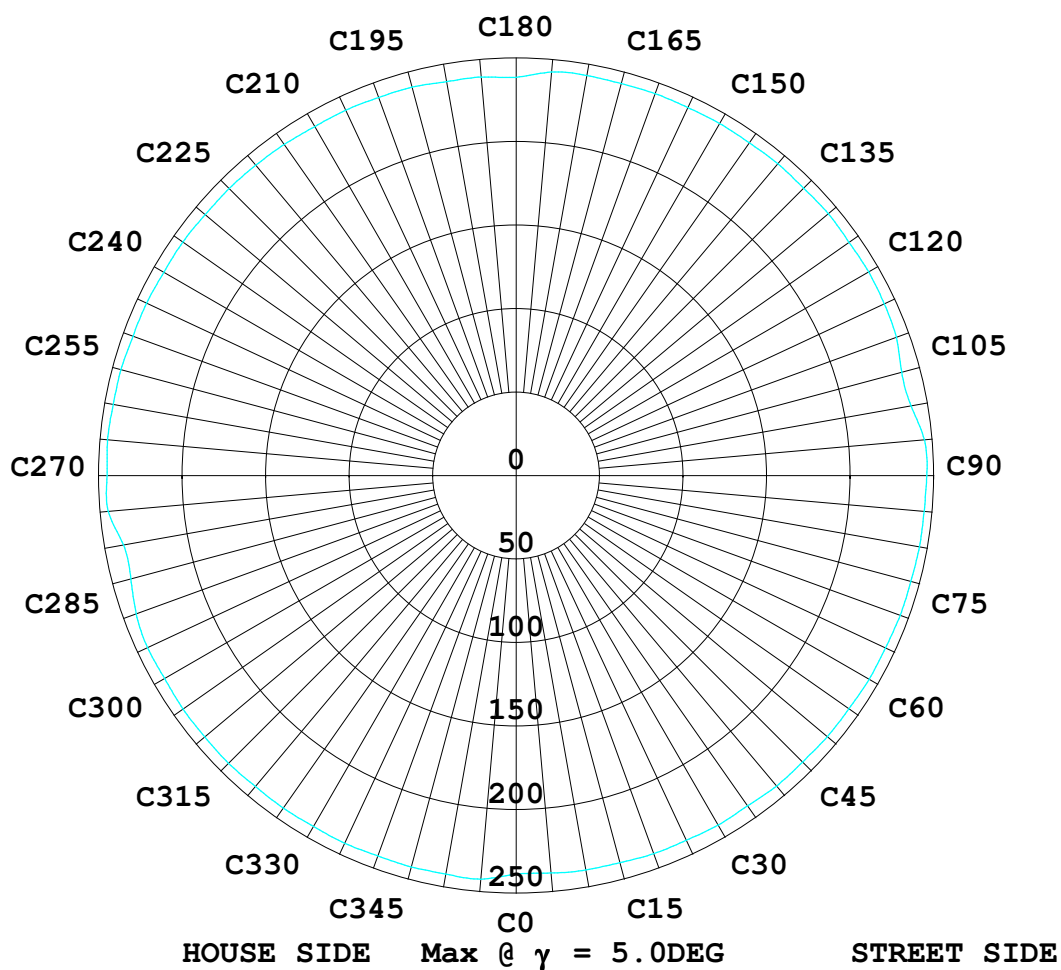
Test System: LSG-1800
Temperature: 25.3 DEG
Operators: G
Test Date: 03-07-2018

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

ISOCANDELA DIAGRAM

Report number: GO2018-064

MANUFACTURER: BACKLIGHT SRL	Address: Via Volta 5 - Ornago (MB)	
NAME: HALO_14W/line meter_1000mm	TYPE: wall	WEIGHT:
SPECIFICATION: wall	DIMENSION: 1000x50x20	SERIAL No.:



Test System: LSG-1800
 Temperature: 25.3DEG
 Operators: G
 Test Date: 03-07-2018

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