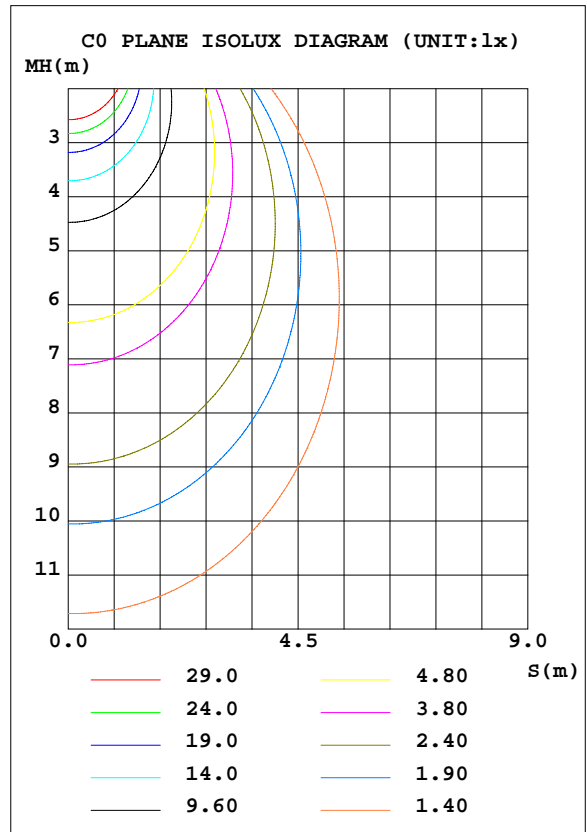
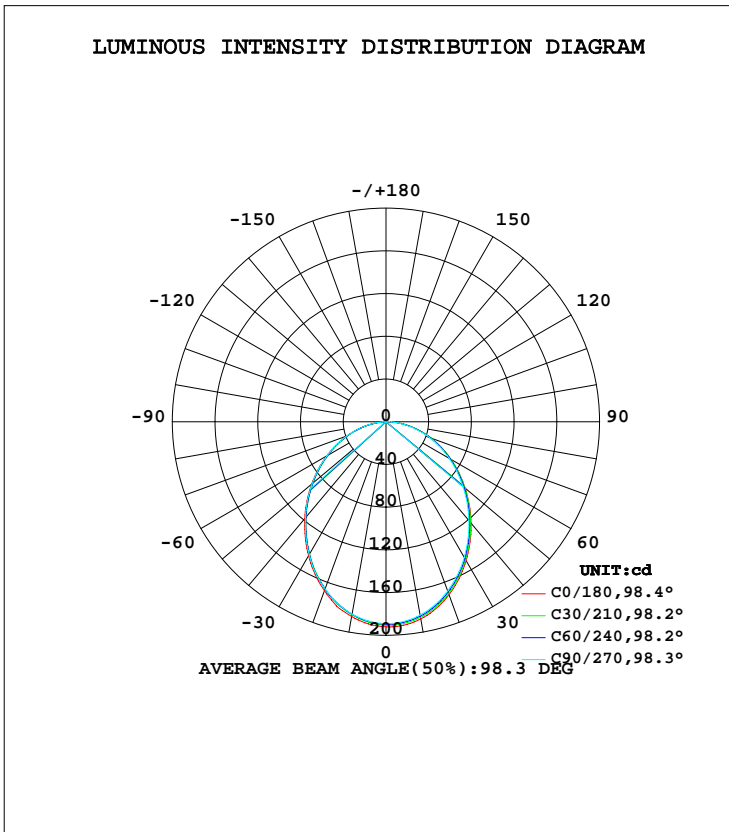


## LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: Halo-L12-S-3000k-RA90	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: VD Avenue Lighting	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 38.37 lm/W			
MODEL	ML1213-BLK	I <sub>max</sub> (cd)	192.1	S/MH(C0/180)	1.17
NOMINAL POWER(W)	12	LOR(%)	100.0	S/MH(C90/270)	1.16
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	469.69	η UP, DN(C0-180)	0.1, 50.8
NOMINAL FLUX(lm)	469.69	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.1, 48.9
LAMPS INSIDE	1	η up(%)	0.2	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	24	η down(%)	99.8	CIBSE SHR MAX	1.30



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:tang  
Test Date:2022-04-08

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.262  
Humidity:65.0%  
Test Distance:7.100m [K=1.0000]  
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	$\Phi$ lum,lamp
10	187.5	185.4	183.9	182.7	185.2	183.2	182.9	183.4	0- 10	17.82	17.82	3.79,3.79
20	172.5	170.6	168.7	167.3	168.5	166.8	166.7	168.0	10- 20	49.89	67.71	14.4,14.4
30	150.1	148.4	146.6	144.7	145.0	143.3	143.8	145.5	20- 30	72.51	140.2	29.9,29.9
40	123.9	122.7	120.8	118.7	118.3	116.5	117.4	119.5	30- 40	83.04	223.3	47.5,47.5
50	96.75	95.89	94.21	91.89	90.91	89.31	90.30	92.63	40- 50	81.80	305.1	64.9,64.9
60	70.04	69.72	68.19	65.75	64.17	62.81	63.86	66.23	50- 60	70.88	375.9	80,80
70	44.67	44.74	43.37	40.94	38.94	37.88	38.95	41.17	60- 70	53.02	429.0	91.3,91.3
80	20.97	21.34	20.17	17.93	15.71	14.99	16.00	17.98	70- 80	31.11	460.1	98,98
90	0.4489	0.7151	0.2621	0.0008	0	0	0	0.0009	80- 90	8.543	468.6	99.8,99.8
100	0	0	0	0	0	0	0	0	90-100	0.0088	468.6	99.8,99.8
110	0	0.0212	0.0426	0.0259	0.0661	0.0378	0.0141	0.0307	100-110	0.0091	468.6	99.8,99.8
120	0.0849	0.1062	0.1369	0.1156	0.1558	0.1298	0.1038	0.1156	110-120	0.0711	468.7	99.8,99.8
130	0.1793	0.2029	0.2220	0.2100	0.2503	0.2265	0.2028	0.2147	120-130	0.1471	468.9	99.8,99.8
140	0.2784	0.3019	0.3305	0.3067	0.3399	0.3185	0.3067	0.3115	130-140	0.2016	469.1	99.9,99.9
150	0.3774	0.3964	0.4956	0.3964	0.4391	0.4083	0.4110	0.4012	140-150	0.2246	469.3	99.9,99.9
160	0.4671	0.4814	0.5098	0.4790	0.5239	0.4908	0.4812	0.4860	150-160	0.2060	469.5	100,100
170	0.5333	0.5474	0.5587	0.5389	0.5707	0.5480	0.5285	0.5378	160-170	0.1460	469.6	100,100
180	0.5805	0.5734	0.5710	0.5710	0.5805	0.5687	0.5710	0.5639	170-180	0.0531	469.7	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

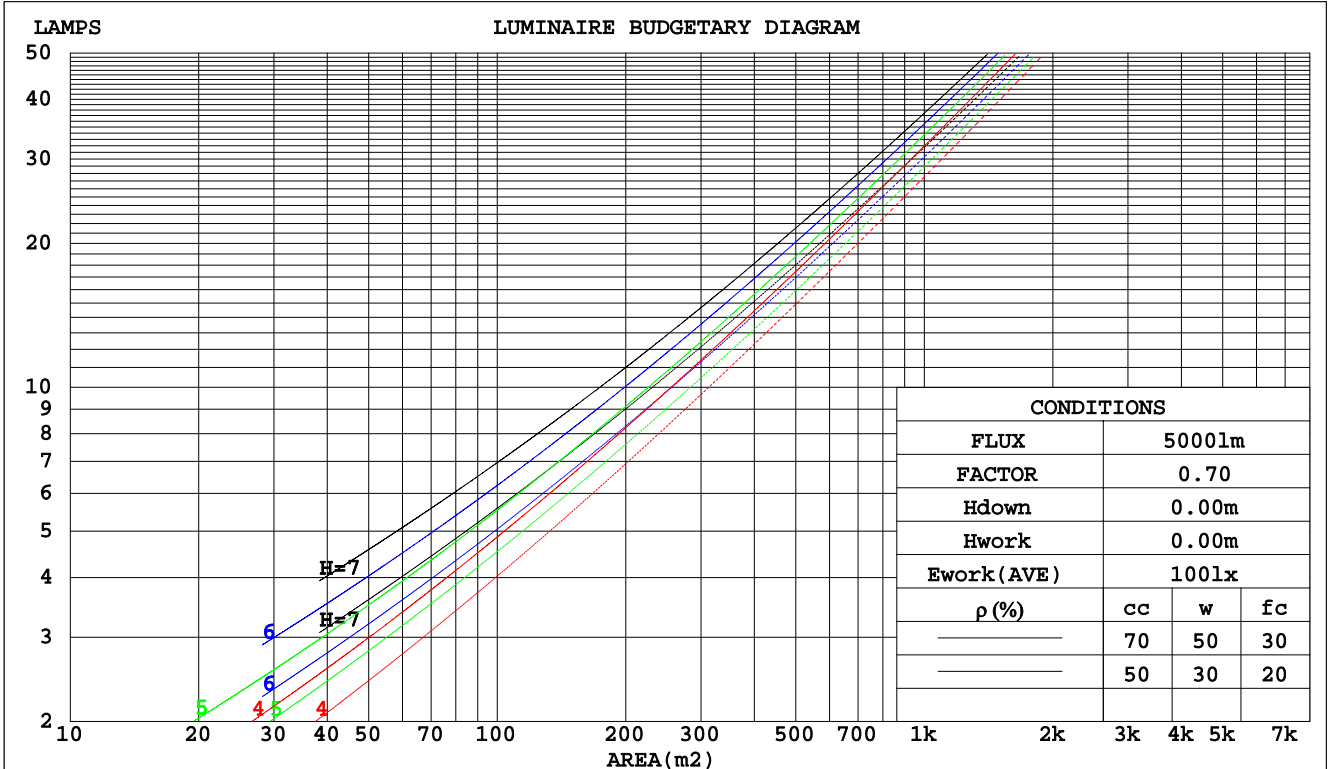
C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:tang  
Test Date:2022-04-08

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.262  
Humidity:65.0%  
Test Distance:7.100m [K=1.0000]  
Remarks:

**CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM**

NAME: Halo-L12-s-3000k-RA90	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: VD	SUR.:	PROTECTION ANGLE:

pcc	80%			70%			50%			30%			10%			0
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pw																0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio															
	Coefficients of Utilization(CU)															
0.0	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	.00
1.0	1.04	1.00	.96	1.02	.98	.95	.98	.95	.92	.94	.91	.89	.90	.88	.86	.84
2.0	.91	.85	.79	.89	.83	.78	.86	.81	.76	.82	.78	.74	.79	.76	.73	.70
3.0	.80	.72	.66	.79	.71	.65	.76	.69	.64	.73	.68	.63	.70	.66	.62	.60
4.0	.71	.63	.56	.70	.62	.56	.68	.61	.55	.65	.59	.54	.63	.58	.54	.51
5.0	.64	.55	.49	.63	.55	.48	.61	.53	.48	.59	.52	.47	.57	.51	.47	.45
6.0	.58	.49	.43	.57	.49	.43	.55	.48	.42	.53	.47	.42	.52	.46	.41	.39
7.0	.53	.44	.38	.52	.44	.38	.50	.43	.37	.49	.42	.37	.47	.41	.37	.35
8.0	.48	.40	.34	.47	.39	.34	.46	.39	.34	.45	.38	.33	.44	.38	.33	.31
9.0	.44	.36	.31	.44	.36	.31	.43	.35	.30	.41	.35	.30	.40	.34	.30	.28
10.0	.41	.33	.28	.40	.33	.28	.39	.33	.28	.38	.32	.28	.38	.32	.27	.26



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: tang  
Test Date: 2022-04-08

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.262  
Humidity: 65.0%  
Test Distance: 7.100m [K=1.0000]  
Remarks:

WEC AND CCEC

NAME: Halo-L12-S-3000k-RA90	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: VD	SUR.:	PROTECTION ANGLE:

ρ <sub>cc</sub>	80%			70%			50%			30%			10%			0
ρ <sub>w</sub>	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ <sub>fc</sub>	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.302	.172	.054	.295	.168	.053	.281	.161	.052	.269	.155	.050	.258	.149	.048	
2.0	.284	.156	.048	.278	.153	.047	.266	.148	.046	.255	.143	.045	.245	.139	.044	
3.0	.263	.140	.042	.258	.138	.042	.247	.134	.041	.238	.130	.040	.229	.127	.039	
4.0	.243	.126	.037	.238	.125	.037	.229	.121	.036	.220	.118	.036	.213	.115	.035	
5.0	.225	.115	.033	.221	.113	.033	.213	.111	.033	.205	.108	.032	.198	.106	.032	
6.0	.209	.105	.030	.205	.104	.030	.198	.101	.029	.191	.099	.029	.185	.097	.029	
7.0	.195	.096	.027	.191	.095	.027	.185	.093	.027	.179	.092	.027	.173	.090	.026	
8.0	.182	.089	.025	.179	.088	.025	.173	.087	.025	.168	.085	.025	.163	.083	.024	
9.0	.171	.083	.023	.168	.082	.023	.163	.081	.023	.158	.079	.023	.153	.078	.023	
10.0	.161	.077	.021	.158	.076	.021	.154	.075	.021	.149	.074	.021	.145	.073	.021	

ρ <sub>cc</sub>	80%			70%			50%			30%			10%			0
ρ <sub>w</sub>	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ <sub>fc</sub>	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.192	.192	.192	.164	.164	.164	.112	.112	.112	.064	.064	.064	.021	.021	.021	
1.0	.181	.158	.137	.155	.136	.118	.106	.093	.081	.061	.054	.047	.020	.017	.015	
2.0	.173	.134	.101	.148	.115	.087	.102	.080	.061	.059	.046	.036	.019	.015	.012	
3.0	.165	.116	.077	.141	.100	.067	.097	.070	.047	.056	.041	.028	.018	.013	.009	
4.0	.157	.103	.061	.135	.089	.053	.093	.062	.037	.054	.036	.022	.017	.012	.007	
5.0	.150	.092	.050	.128	.080	.043	.089	.056	.031	.051	.033	.018	.017	.011	.006	
6.0	.142	.084	.042	.122	.073	.036	.084	.051	.026	.049	.030	.015	.016	.010	.005	
7.0	.136	.077	.036	.117	.067	.031	.081	.047	.022	.047	.027	.013	.015	.009	.004	
8.0	.129	.071	.031	.111	.062	.027	.077	.043	.019	.045	.026	.011	.014	.008	.004	
9.0	.123	.066	.027	.106	.057	.024	.074	.040	.017	.043	.024	.010	.014	.008	.003	
10.0	.118	.062	.025	.101	.054	.021	.070	.038	.015	.041	.022	.009	.013	.007	.003	

C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: tang  
 Test Date: 2022-04-08

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.262  
 Humidity: 65.0%  
 Test Distance: 7.100m [K=1.0000]  
 Remarks:

Uncorrected UGR Table

NAME: Halo-L12-S-3000k-RA90					TYPE:					WEIGHT:					
DIM.:					SPEC.:					SERIAL No.:					
MFR.: VD					SUR.:					PROTECTION ANGLE:					
ceiling/cavity	0.7	0.7	0.5	0.5	0.3	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	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	0.2	0.2	0.2	0.2	0.2
Room dimensions	Viewed crosswise					Viewed endwise									
x = 2H y = 2H	14.1	15.6	14.4	15.8	16.0	14.0	15.5	14.3	15.7	15.9	14.0	15.5	14.3	15.7	15.9
3H	15.7	17.1	16.0	17.3	17.5	15.5	16.9	15.8	17.1	17.4	15.5	16.9	15.8	17.1	17.4
4H	16.3	17.7	16.7	17.9	18.2	16.2	17.5	16.5	17.7	18.0	16.2	17.5	16.5	17.7	18.0
6H	16.9	18.1	17.2	18.4	18.7	16.7	17.9	17.0	18.2	18.5	16.7	17.9	17.0	18.2	18.5
8H	17.1	18.3	17.4	18.5	18.8	16.9	18.1	17.2	18.3	18.6	16.9	18.1	17.2	18.3	18.6
12H	17.2	18.3	17.6	18.6	18.9	17.0	18.1	17.3	18.4	18.7	17.0	18.1	17.3	18.4	18.7
4H 2H	14.7	16.0	15.1	16.3	16.6	14.6	15.9	15.0	16.2	16.5	14.6	15.9	15.0	16.2	16.5
3H	16.5	17.6	16.8	17.9	18.2	16.4	17.5	16.7	17.8	18.1	16.4	17.5	16.7	17.8	18.1
4H	17.3	18.3	17.7	18.7	19.0	17.2	18.2	17.5	18.5	18.9	17.2	18.2	17.5	18.5	18.9
6H	18.0	18.9	18.4	19.2	19.6	17.8	18.7	18.2	19.1	19.5	17.8	18.7	18.2	19.1	19.5
8H	18.2	19.1	18.6	19.5	19.8	18.0	18.9	18.5	19.3	19.7	18.0	18.9	18.5	19.3	19.7
12H	18.4	19.2	18.8	19.6	20.0	18.2	19.0	18.7	19.4	19.8	18.2	19.0	18.7	19.4	19.8
8H 4H	17.6	18.5	18.0	18.8	19.2	17.5	18.3	17.9	18.7	19.1	17.5	18.3	17.9	18.7	19.1
6H	18.4	19.2	18.9	19.6	20.0	18.3	19.0	18.7	19.4	19.9	18.3	19.0	18.7	19.4	19.9
8H	18.8	19.4	19.3	19.9	20.3	18.6	19.3	19.1	19.7	20.2	18.6	19.3	19.1	19.7	20.2
12H	19.1	19.6	19.6	20.1	20.6	18.9	19.5	19.4	19.9	20.4	18.9	19.5	19.4	19.9	20.4
12H 4H	17.6	18.4	18.0	18.8	19.2	17.5	18.3	17.9	18.7	19.1	17.5	18.3	17.9	18.7	19.1
6H	18.5	19.2	19.0	19.6	20.0	18.4	19.0	18.9	19.5	19.9	18.4	19.0	18.9	19.5	19.9
8H	18.9	19.5	19.4	19.9	20.4	18.8	19.3	19.3	19.8	20.3	18.8	19.3	19.3	19.8	20.3
Variations with the observer position at spacings:															
S = 1.0H	+ 0.2 / - 0.2					+ 0.2 / - 0.2									
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3									
2.0H	+ 0.2 / - 0.2					+ 0.1 / - 0.2									

CIE Pub.117 Corrected 469.7 lm Total Lamp Luminous Flux. (8log(F/F0) = -2.6)

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: tang  
Test Date: 2022-04-08

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.262  
Humidity: 65.0%  
Test Distance: 7.100m [K=1.0000]  
Remarks:

UTILIZATION FACTORS TABLE

NAME: Halo-L12-S-3000k-RA90	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: VD	SUR.:	PROTECTION ANGLE:

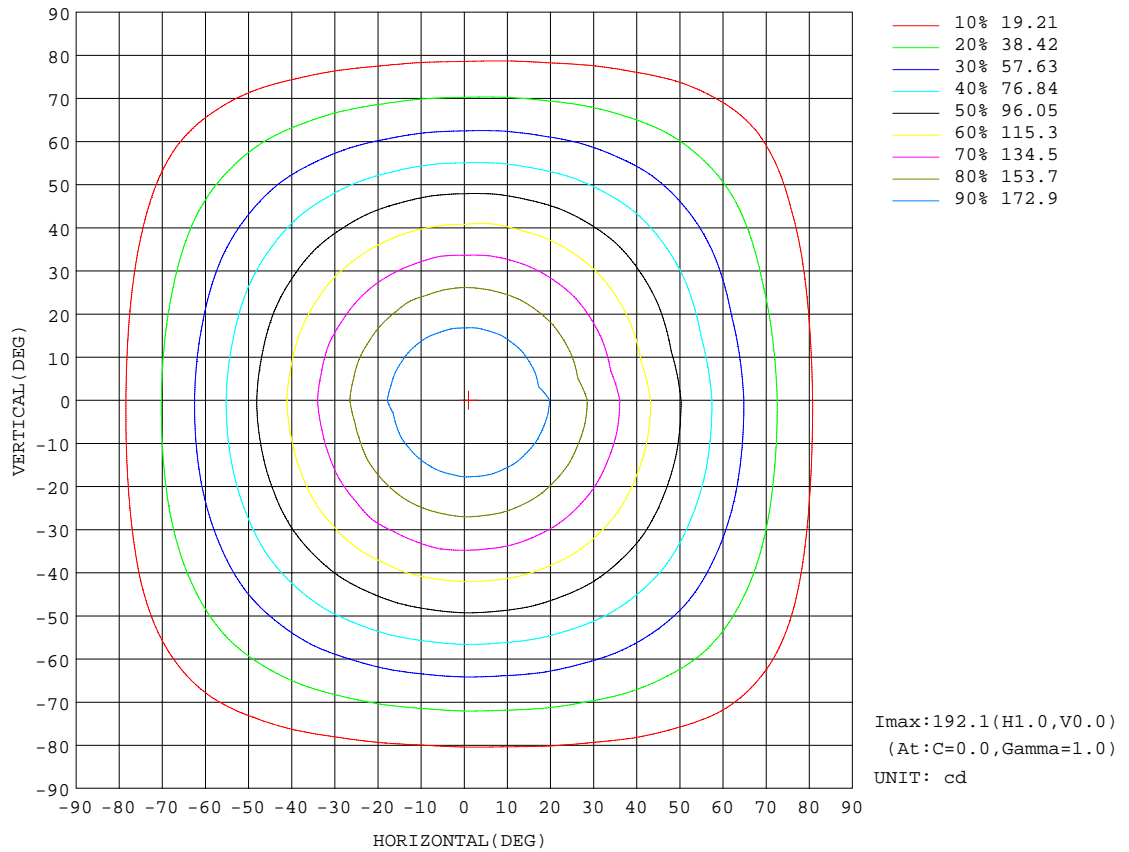
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	59	48	41	59	48	41	57	47	41	35
0.80	69	58	51	68	57	51	66	57	50	43
1.00	77	67	60	76	66	59	74	67	59	52
1.25	84	74	67	83	73	67	80	72	66	59
1.50	89	80	73	87	79	72	84	77	71	64
2.00	96	87	81	94	86	80	90	84	79	71
2.50	100	92	86	97	91	85	94	88	83	75
3.00	103	96	91	101	95	90	97	92	87	79
4.00	107	101	97	104	99	95	100	96	92	84
5.00	109	104	100	107	102	99	102	99	96	87
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: tang  
 Test Date: 2022-04-08

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.262  
 Humidity: 65.0%  
 Test Distance: 7.100m [K=1.0000]  
 Remarks:

ISOCANDELA DIAGRAM

NAME: Halo-L12-s-3000k-RA90	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: VD	SUR.:	PROTECTION ANGLE:

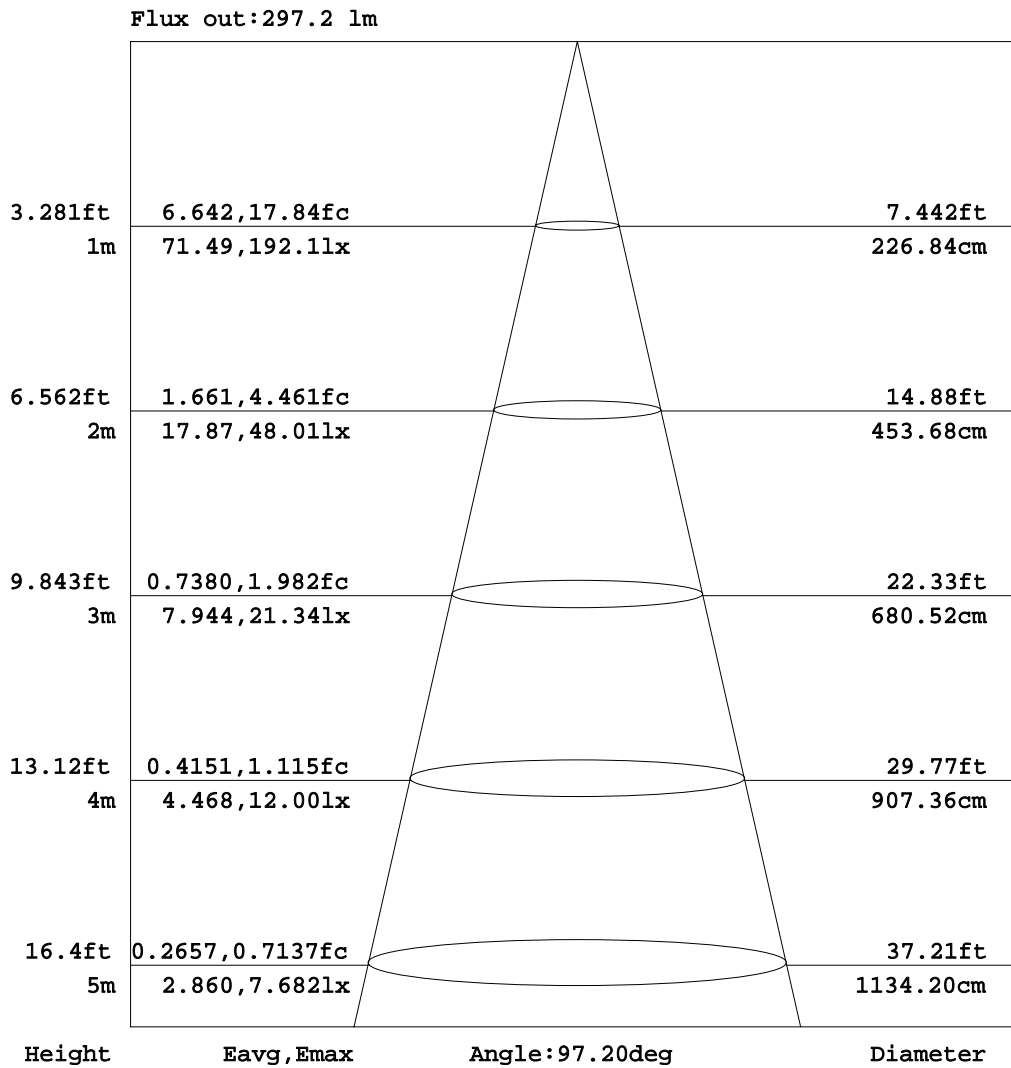


C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: tang  
 Test Date: 2022-04-08

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.262  
 Humidity: 65.0%  
 Test Distance: 7.100m [K=1.0000]  
 Remarks:

AAI Figure

NAME: Halo-L12-S-3000k-RA90	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: VD	SUR.:	PROTECTION ANGLE:



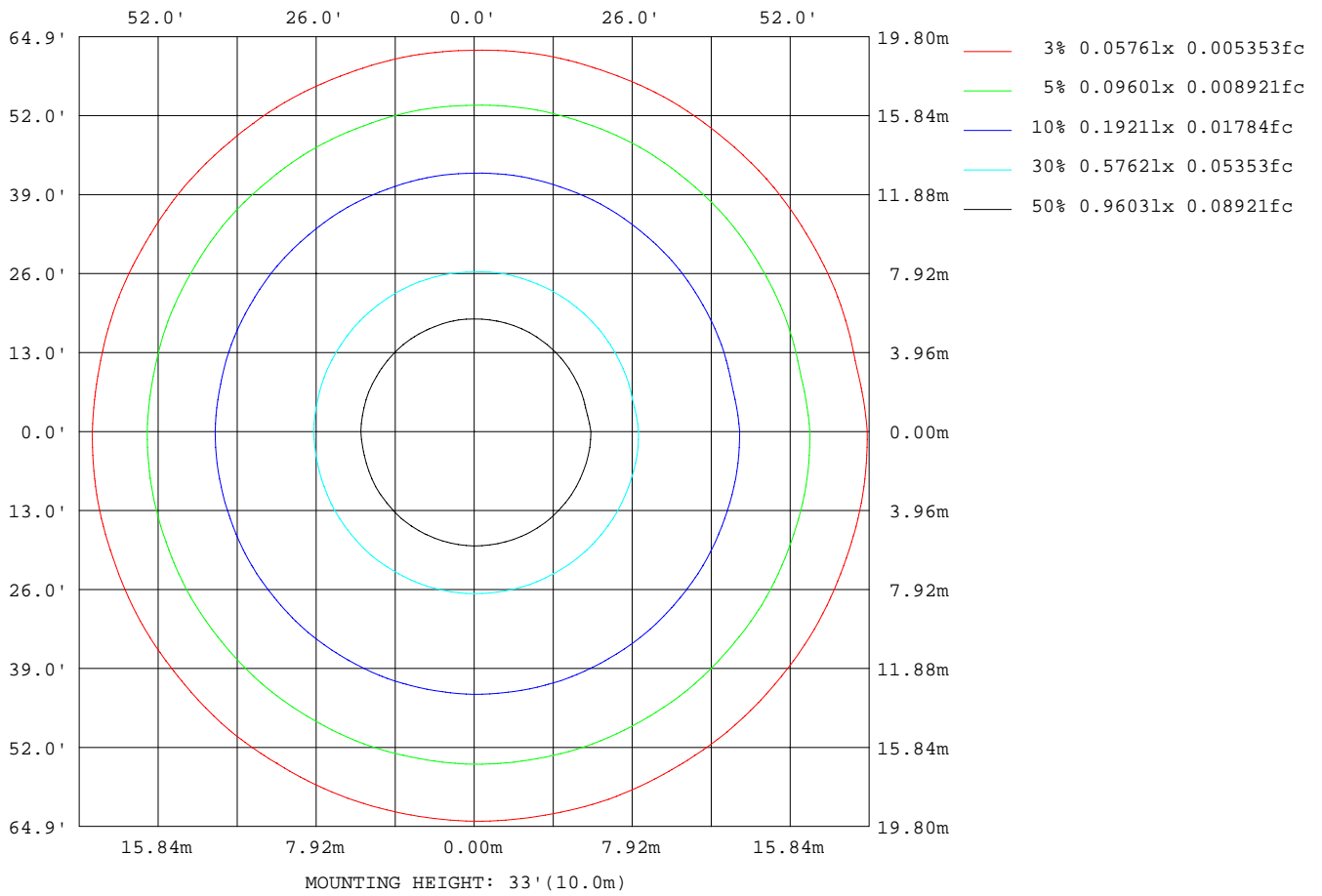
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:tang  
Test Date:2022-04-08

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.262  
Humidity:65.0%  
Test Distance:7.100m [K=1.0000]  
Remarks:

ISOLUX DIAGRAM

NAME: Halo-L12-s-3000k-RA90	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: VD	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: tang  
 Test Date: 2022-04-08

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.262  
 Humidity: 65.0%  
 Test Distance: 7.100m [K=1.0000]  
 Remarks:

**Average Luminance Table(CIBSE)**

NAME: Halo-L12-S-3000k-RA90	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: VD	SUR.:	PROTECTION ANGLE:

Parameter description for average Luminance	Symbol	Value	Unit
Luminance in Azimuth Plane	Bc	refer Table 2	cd/sq.m.
Intensity at angle Gamma in given azimuth plane	I	from data	cd/klm
Number of lamps	N	1	
Output of each lamp(initial lumens as specified)	F	469.69	lm
Multiplying factor	K	1	
Luminous area in horizontal plane used in calculations	A	0.1	sq.m.
Angle to the downward vertical from light centre	Gamma	from data	deg

Table 1. Calculation parameters for determination of CIBSE LG3:1996 Average Luminance

G deg	C plane(deg)																		
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
55	1453	1457	1449	1451	1442	1442	1431	1429	1417	1413	1400	1396	1382	1379	1365	1363	1351	1351	1349
60	1401	1408	1400	1404	1393	1395	1383	1381	1367	1364	1347	1343	1327	1323	1306	1304	1290	1291	1283
65	1353	1362	1354	1360	1351	1351	1338	1337	1319	1315	1298	1291	1272	1267	1248	1244	1228	1228	1214
70	1306	1319	1310	1318	1306	1310	1295	1293	1273	1268	1245	1239	1215	1208	1186	1180	1162	1161	1138
75	1259	1276	1267	1279	1265	1271	1252	1250	1225	1219	1190	1181	1151	1142	1113	1107	1083	1083	1045
80	1208	1232	1224	1241	1225	1232	1209	1204	1172	1162	1123	1108	1067	1051	1014	1002	971	968	905
85	1135	1183	1173	1206	1178	1193	1152	1145	1084	1068	997	971	896	868	799	778	723	720	586

Table 2. Average Luminance(cd/sq.m.) for defined C plane,Gamma angle

CIBSE Category	Gamma (deg)	Average Luminance		Patch Luminance	
		maximum	specified	maximum	specified
		calculated	maximum	measured	maximum
Category 1	55 to 90	1457	200	---	500
Category 2	65 to 90	1362	200	---	500
Category 3	75 to 90	1279	200	---	500

Table 3. Tabulation of Average and Patch Luminance(cd/sq.m.) for defined CIBSE categories

No match

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:tang  
Test Date:2022-04-08

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.262  
Humidity:65.0%  
Test Distance:7.100m [K=1.0000]  
Remarks:

**Average Luminance Table(CIBSE)**

NAME: Halo-L12-S-3000k-RA90	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: VD	SUR.:	PROTECTION ANGLE:

Parameter description for average Luminance	Symbol	Value	Unit
Luminance in Azimuth Plane	Bc	refer Table 2	cd/sq.m.
Intensity at angle Gamma in given azimuth plane	I	from data	cd/klm
Number of lamps	N	1	
Output of each lamp(initial lumens as specified)	F	469.69	lm
Multiplying factor	K	1	
Luminous area in horizontal plane used in calculations	A	0.1	sq.m.
Angle to the downward vertical from light centre	Gamma	from data	deg

Table 1. Calculation parameters for determination of CIBSE LG3:2001 Average Luminance

G deg	C plane(deg)																		
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
55	1453	1457	1449	1451	1442	1442	1431	1429	1417	1413	1400	1396	1382	1379	1365	1363	1351	1351	1349
60	1401	1408	1400	1404	1393	1395	1383	1381	1367	1364	1347	1343	1327	1323	1306	1304	1290	1291	1283
65	1353	1362	1354	1360	1351	1351	1338	1337	1319	1315	1298	1291	1272	1267	1248	1244	1228	1228	1214
70	1306	1319	1310	1318	1306	1310	1295	1293	1273	1268	1245	1239	1215	1208	1186	1180	1162	1161	1138
75	1259	1276	1267	1279	1265	1271	1252	1250	1225	1219	1190	1181	1151	1142	1113	1107	1083	1083	1045
80	1208	1232	1224	1241	1225	1232	1209	1204	1172	1162	1123	1108	1067	1051	1014	1002	971	968	905
85	1135	1183	1173	1206	1178	1193	1152	1145	1084	1068	997	971	896	868	799	778	723	720	586

Table 2. Average Luminance(cd/sq.m.) for defined C plane,Gamma angle

range (deg)	Maximum measured	Average Luminance(cd/sq.m)			
		Maximum limit for screen type & software category used			
		Type I,II screen Some neg.s'ware	Type I,II screen Only pos.s'ware	Type III screen Some neg.s'ware	Type III screen Only pos.s'ware
55 to 90	1457	1000	1500	200	500
65 to 90	1362	1000	1500	200	500

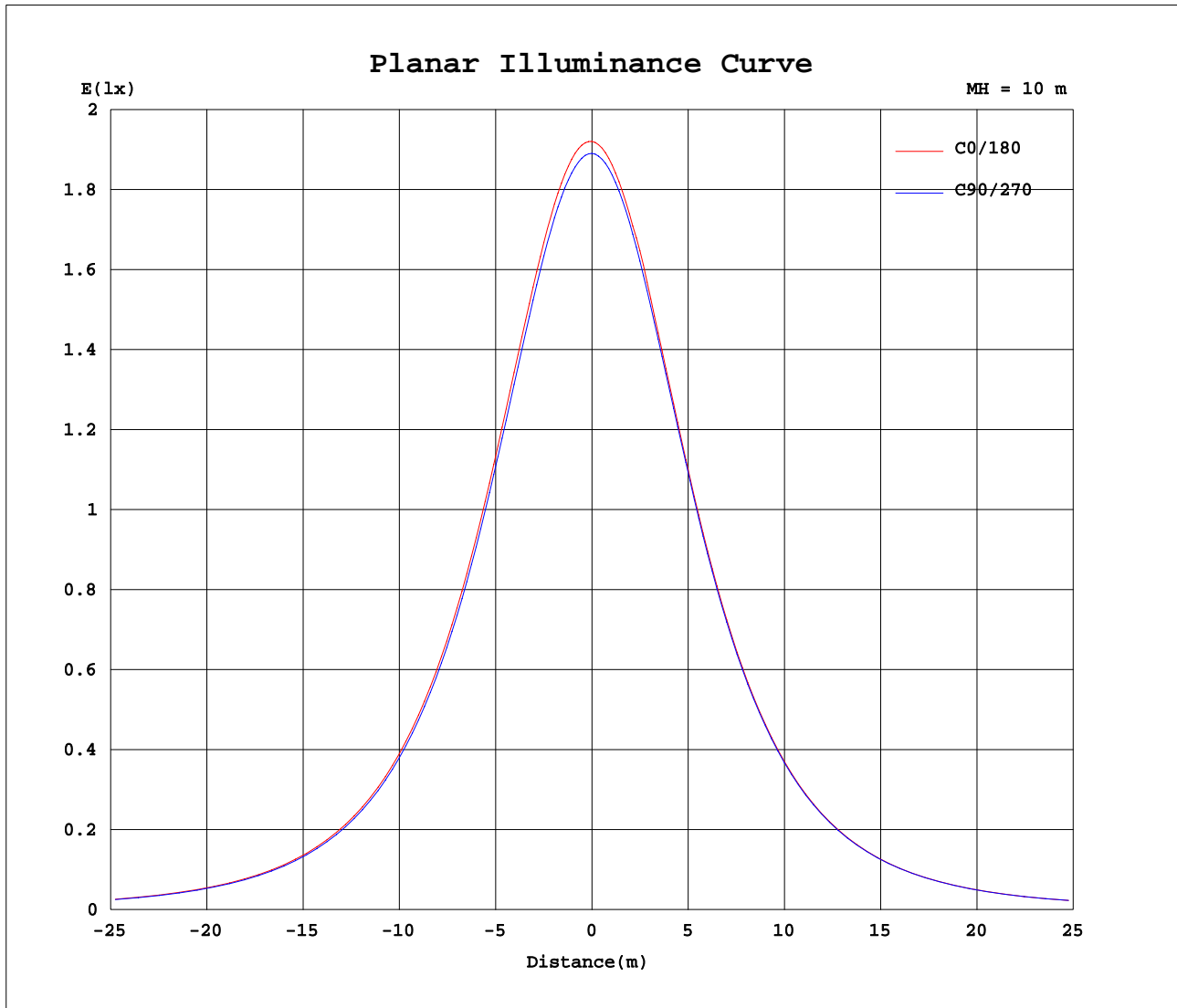
Table 3. Tabulation of average luminance(cd/sq.m.) and luminance limits

No match

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:tang  
Test Date:2022-04-08

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.262  
Humidity:65.0%  
Test Distance:7.100m [K=1.0000]  
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: tang  
 Test Date: 2022-04-08

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.262  
 Humidity: 65.0%  
 Test Distance: 7.100m [K=1.0000]  
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: Halo-L12-S-3000k-RA90	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: VD	SUR.:	PROTECTION ANGLE:

Table--1

UNIT: cd

C( DEG) γ (DEG)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
0	192	191	191	191	190	190	190	189	189	189	189	189	189	189	189	189	189	189	192
5	191	191	190	190	189	189	188	188	188	188	188	187	187	187	187	187	187	187	190
10	188	187	186	186	186	185	185	185	184	184	184	183	183	183	183	183	182	182	185
15	181	181	180	180	179	179	178	178	178	177	177	177	176	176	176	176	176	176	179
20	173	172	172	171	171	170	170	170	169	169	168	168	168	167	167	167	167	167	168
25	162	162	161	161	160	160	159	159	159	158	158	158	157	157	157	156	156	156	157
30	150	150	149	149	148	148	148	147	147	147	146	146	145	145	144	144	144	144	145
35	137	137	137	136	136	136	135	135	134	134	134	133	132	133	131	131	131	131	132
40	124	124	123	123	123	123	122	122	121	121	120	120	119	119	118	118	118	118	118
45	110	110	110	110	109	109	109	108	108	107	107	107	106	106	105	105	104	104	105
50	96.8	97.0	96.4	96.5	95.9	95.9	95.2	95.1	94.4	94.2	93.4	93.2	92.4	92.3	91.5	91.4	90.7	90.8	90.9
55	83.3	83.6	83.1	83.2	82.7	82.7	82.1	82.0	81.3	81.1	80.3	80.1	79.3	79.1	78.3	78.2	77.5	77.5	77.4
60	70.0	70.4	70.0	70.2	69.7	69.8	69.2	69.1	68.3	68.2	67.4	67.2	66.3	66.2	65.3	65.2	64.5	64.5	64.2
65	57.2	57.6	57.2	57.5	57.1	57.1	56.5	56.5	55.8	55.6	54.9	54.6	53.8	53.5	52.7	52.6	51.9	51.9	51.3
70	44.7	45.1	44.8	45.1	44.7	44.8	44.3	44.2	43.5	43.4	42.6	42.4	41.6	41.3	40.6	40.4	39.7	39.7	38.9
75	32.6	33.0	32.8	33.1	32.7	32.9	32.4	32.4	31.7	31.5	30.8	30.6	29.8	29.6	28.8	28.6	28.0	28.0	27.0
80	21.0	21.4	21.3	21.5	21.3	21.4	21.0	20.9	20.4	20.2	19.5	19.2	18.5	18.3	17.6	17.4	16.9	16.8	15.7
85	9.89	10.3	10.2	10.5	10.3	10.4	10.0	9.98	9.45	9.30	8.69	8.46	7.81	7.57	6.97	6.78	6.30	6.28	5.11
90	0.45	0.67	0.64	0.80	0.68	0.75	0.56	0.53	0.30	0.26	0.03	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.02
110	0.00	0.04	0.00	0.04	0.00	0.04	0.00	0.03	0.00	0.04	0.00	0.05	0.00	0.05	0.00	0.05	0.00	0.06	0.07
115	0.04	0.08	0.04	0.08	0.03	0.08	0.04	0.09	0.04	0.09	0.05	0.09	0.04	0.09	0.05	0.09	0.05	0.09	0.11
120	0.08	0.12	0.08	0.12	0.08	0.13	0.09	0.13	0.09	0.14	0.09	0.14	0.08	0.14	0.09	0.14	0.10	0.14	0.16
125	0.13	0.17	0.13	0.18	0.13	0.18	0.13	0.18	0.14	0.18	0.14	0.18	0.13	0.19	0.14	0.18	0.13	0.19	0.21
130	0.18	0.23	0.17	0.22	0.18	0.23	0.18	0.23	0.18	0.22	0.19	0.23	0.18	0.23	0.19	0.23	0.18	0.23	0.25
135	0.23	0.26	0.23	0.28	0.22	0.27	0.24	0.27	0.23	0.27	0.24	0.28	0.23	0.28	0.24	0.28	0.24	0.28	0.30
140	0.28	0.33	0.27	0.33	0.28	0.32	0.27	0.32	0.29	0.33	0.30	0.35	0.28	0.33	0.28	0.33	0.29	0.33	0.34
145	0.33	0.36	0.33	0.36	0.32	0.37	0.33	0.37	0.33	0.38	0.36	0.41	0.33	0.38	0.33	0.37	0.33	0.38	0.39
150	0.38	0.42	0.37	0.42	0.37	0.42	0.38	0.42	0.38	0.50	0.41	0.45	0.41	0.42	0.38	0.42	0.37	0.42	0.44
155	0.42	0.46	0.41	0.46	0.42	0.47	0.42	0.46	0.42	0.47	0.45	0.50	0.45	0.46	0.42	0.46	0.41	0.47	0.48
160	0.47	0.51	0.46	0.50	0.45	0.51	0.46	0.50	0.46	0.51	0.49	0.51	0.47	0.50	0.46	0.50	0.46	0.50	0.52
165	0.50	0.54	0.50	0.54	0.49	0.54	0.50	0.54	0.50	0.54	0.50	0.53	0.49	0.53	0.50	0.54	0.50	0.54	0.56
170	0.53	0.57	0.53	0.57	0.52	0.57	0.52	0.56	0.52	0.56	0.52	0.56	0.53	0.56	0.52	0.56	0.52	0.56	0.57
175	0.57	0.58	0.56	0.58	0.55	0.58	0.55	0.57	0.55	0.57	0.55	0.57	0.55	0.57	0.55	0.57	0.55	0.58	0.58
180	0.58	0.58	0.58	0.58	0.57	0.58	0.57	0.58	0.56	0.57	0.56	0.58	0.56	0.57	0.57	0.58	0.56	0.58	0.58

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: tang  
Test Date: 2022-04-08

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.262  
Humidity: 65.0%  
Test Distance: 7.100m [K=1.0000]  
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: Halo-L12-S-3000k-RA90	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: VD	SUR.:	PROTECTION ANGLE:

Table--2

UNIT: cd

C( DEG) γ (DEG)	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350		
0	191	191	191	190	190	190	189	189	189	189	189	189	189	189	189	189	189		
5	189	189	188	188	188	188	188	187	187	187	187	187	187	187	187	187	187		
10	184	184	184	183	183	183	183	183	183	183	183	183	183	183	184	184	184		
15	178	177	177	176	176	176	176	176	176	176	176	177	177	177	177	177	177		
20	168	167	167	167	167	167	167	167	167	167	167	168	168	168	168	168	168		
25	156	156	156	156	155	156	156	156	156	156	156	157	157	158	158	158	158		
30	144	144	143	143	143	143	143	144	144	144	145	145	145	146	146	146	146		
35	131	131	130	130	130	130	130	131	131	132	132	132	132	133	133	133	133		
40	117	117	117	117	116	117	117	117	117	119	118	119	119	120	120	120	120		
45	104	104	103	103	103	103	103	104	104	105	105	106	106	106	106	107	107		
50	90.0	89.9	89.3	89.5	89.2	89.6	89.5	90.2	90.3	91.1	91.3	92.1	92.3	93.0	93.0	93.5	93.4		
55	76.5	76.4	75.8	76.1	75.8	76.2	76.2	76.8	76.9	77.7	77.9	78.8	78.9	79.6	79.7	80.2	80.1		
60	63.3	63.3	62.7	63.0	62.6	63.1	63.1	63.8	63.9	64.7	64.8	65.7	65.9	66.6	66.6	67.2	67.1		
65	50.6	50.5	50.0	50.2	50.0	50.4	50.4	51.0	51.2	51.9	52.2	52.9	53.2	53.8	54.0	54.5	54.5		
70	38.2	38.2	37.7	38.0	37.8	38.2	38.2	38.8	39.0	39.7	39.9	40.6	40.8	41.5	41.6	42.2	42.2		
75	26.4	26.4	26.0	26.2	26.1	26.4	26.5	27.1	27.2	27.9	28.1	28.8	29.0	29.7	29.8	30.3	30.3		
80	15.1	15.2	14.8	15.1	14.9	15.3	15.3	15.9	16.0	16.6	16.8	17.5	17.7	18.3	18.4	18.9	18.9		
85	4.65	4.71	4.43	4.67	4.53	4.89	4.92	5.41	5.50	6.08	6.23	6.86	7.00	7.57	7.67	8.17	8.15		
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01		
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
105	0.00	0.02	0.00	0.02	0.00	0.02	0.00	0.02	0.00	0.02	0.00	0.02	0.00	0.01	0.00	0.00	0.00		
110	0.02	0.06	0.01	0.07	0.01	0.06	0.02	0.06	0.01	0.05	0.01	0.06	0.01	0.05	0.00	0.05	0.00		
115	0.06	0.11	0.07	0.11	0.06	0.10	0.06	0.10	0.06	0.10	0.06	0.09	0.05	0.09	0.05	0.09	0.04		
120	0.11	0.15	0.11	0.15	0.11	0.16	0.10	0.16	0.10	0.15	0.10	0.14	0.09	0.14	0.09	0.13	0.09		
125	0.15	0.20	0.15	0.20	0.15	0.20	0.15	0.20	0.16	0.19	0.15	0.19	0.14	0.19	0.14	0.18	0.13		
130	0.20	0.25	0.20	0.25	0.20	0.25	0.20	0.25	0.20	0.25	0.20	0.24	0.20	0.23	0.18	0.23	0.18		
135	0.25	0.29	0.25	0.30	0.25	0.29	0.25	0.29	0.25	0.29	0.24	0.29	0.25	0.29	0.23	0.28	0.23		
140	0.29	0.34	0.30	0.34	0.30	0.34	0.30	0.34	0.31	0.34	0.29	0.33	0.29	0.34	0.29	0.33	0.28		
145	0.34	0.39	0.34	0.39	0.34	0.38	0.36	0.40	0.35	0.39	0.34	0.38	0.33	0.38	0.33	0.37	0.33		
150	0.39	0.43	0.39	0.43	0.39	0.45	0.40	0.44	0.41	0.43	0.38	0.43	0.38	0.42	0.37	0.42	0.37		
155	0.42	0.47	0.42	0.47	0.42	0.48	0.44	0.48	0.44	0.48	0.42	0.47	0.42	0.47	0.42	0.46	0.42		
160	0.47	0.52	0.47	0.51	0.47	0.51	0.47	0.51	0.48	0.51	0.46	0.51	0.46	0.51	0.45	0.51	0.46		
165	0.50	0.55	0.50	0.54	0.50	0.55	0.50	0.55	0.50	0.54	0.50	0.54	0.50	0.54	0.50	0.54	0.50		
170	0.54	0.57	0.53	0.57	0.53	0.57	0.52	0.56	0.53	0.56	0.52	0.56	0.52	0.56	0.52	0.57	0.52		
175	0.56	0.58	0.55	0.57	0.56	0.57	0.55	0.56	0.55	0.57	0.54	0.57	0.54	0.56	0.55	0.57	0.55		
180	0.58	0.58	0.57	0.57	0.57	0.58	0.57	0.57	0.57	0.57	0.57	0.58	0.56	0.57	0.57	0.58	0.57		

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:tang  
Test Date:2022-04-08

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.262  
Humidity:65.0%  
Test Distance:7.100m [K=1.0000]  
Remarks: