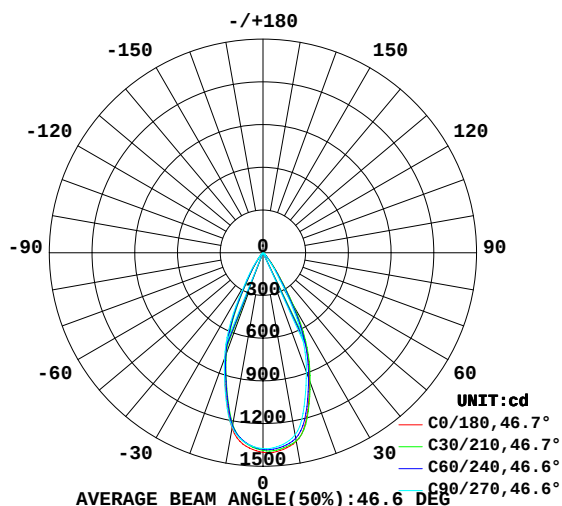


LUMINAIRE PHOTOMETRIC TEST REPORT

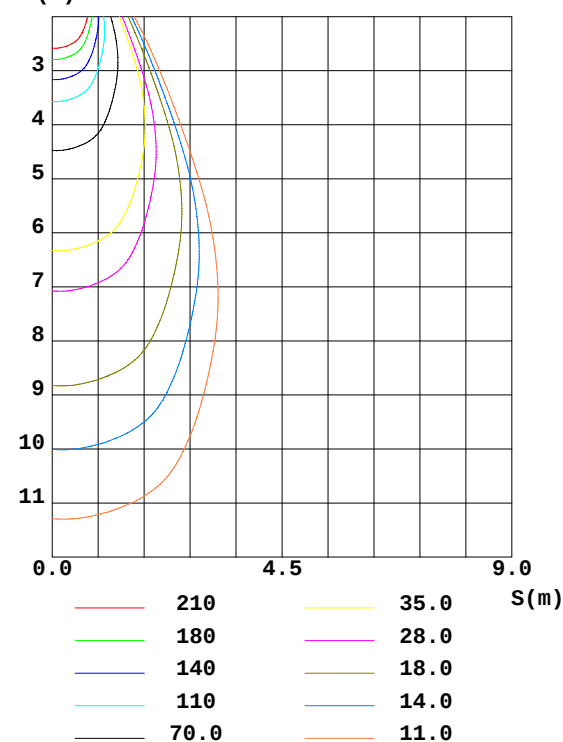
NAME: CL-Halo-D12-uls 3000k-RA90-48D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 63.89 lm/W			
MODEL		Imax(cd)	1405	S/MH(C0/180)	0.77
NOMINAL POWER(W)	12	LOR(%)	100.0	S/MH(C90/270)	0.74
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	801.98	η UP, DN(C0-180)	0.2, 52.2
NOMINAL FLUX(lm)	801.979	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.2, 47.5
LAMPS INSIDE	1	η up(%)	0.4	CIBSE SHR NOM	0.75
TEST VOLTAGE(V)	24	η down(%)	99.6	CIBSE SHR MAX	0.75

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Vando
Test Date:2021-03-02

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity:65.0%
Test Distance:7.000m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	1344	1333	1299	1255	1251	1226	1245	1289	0- 10	127.2	127.2	15.9,15.9
20	955.3	955.7	892.0	813.5	777.1	754.2	791.3	866.0	10- 20	297.9	425.1	53,53
30	413.4	414.4	331.2	248.2	217.4	213.1	257.7	335.4	20- 30	264.0	689.1	85.9,85.9
40	74.00	66.73	51.79	39.89	36.75	38.11	48.57	63.86	30- 40	88.86	777.9	97,97
50	10.87	9.682	10.03	5.840	5.571	5.535	6.713	9.212	40- 50	17.67	795.6	99.2,99.2
60	1.756	1.503	1.126	0.8419	0.8600	0.8597	1.080	1.394	50- 60	3.010	798.6	99.6,99.6
70	0.0001	0	0	0	0	0	0	0	60- 70	0.3563	799.0	99.6,99.6
80	0	0	0	0	0	0	0	0	70- 80	0.0000	799.0	99.6,99.6
90	0	0	0	0	0	0	0	0	80- 90	0	799.0	99.6,99.6
100	0	0	0	0	0	0	0	0	90-100	0	799.0	99.6,99.6
110	0	0	0	0	0	0	0	0	100-110	0	799.0	99.6,99.6
120	0	0	0	0	0	0	0	0	110-120	0	799.0	99.6,99.6
130	0.0136	0.0185	0.0462	0.0963	0.1839	0.1675	0.1006	0.0689	120-130	0.0151	799.0	99.6,99.6
140	0.5084	0.4815	0.5282	0.6559	0.7809	0.7982	0.6874	0.5735	130-140	0.2445	799.2	99.7,99.7
150	1.361	1.300	1.386	1.553	1.726	1.739	1.605	1.441	140-150	0.6464	799.9	99.7,99.7
160	2.398	2.321	2.391	2.527	2.744	2.723	2.586	2.408	150-160	0.9152	800.8	99.9,99.9
170	3.407	3.328	3.372	3.456	3.703	3.651	3.531	3.392	160-170	0.8346	801.6	100,100
180	4.078	4.007	3.968	3.970	4.096	4.023	3.972	3.954	170-180	0.3543	802.0	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

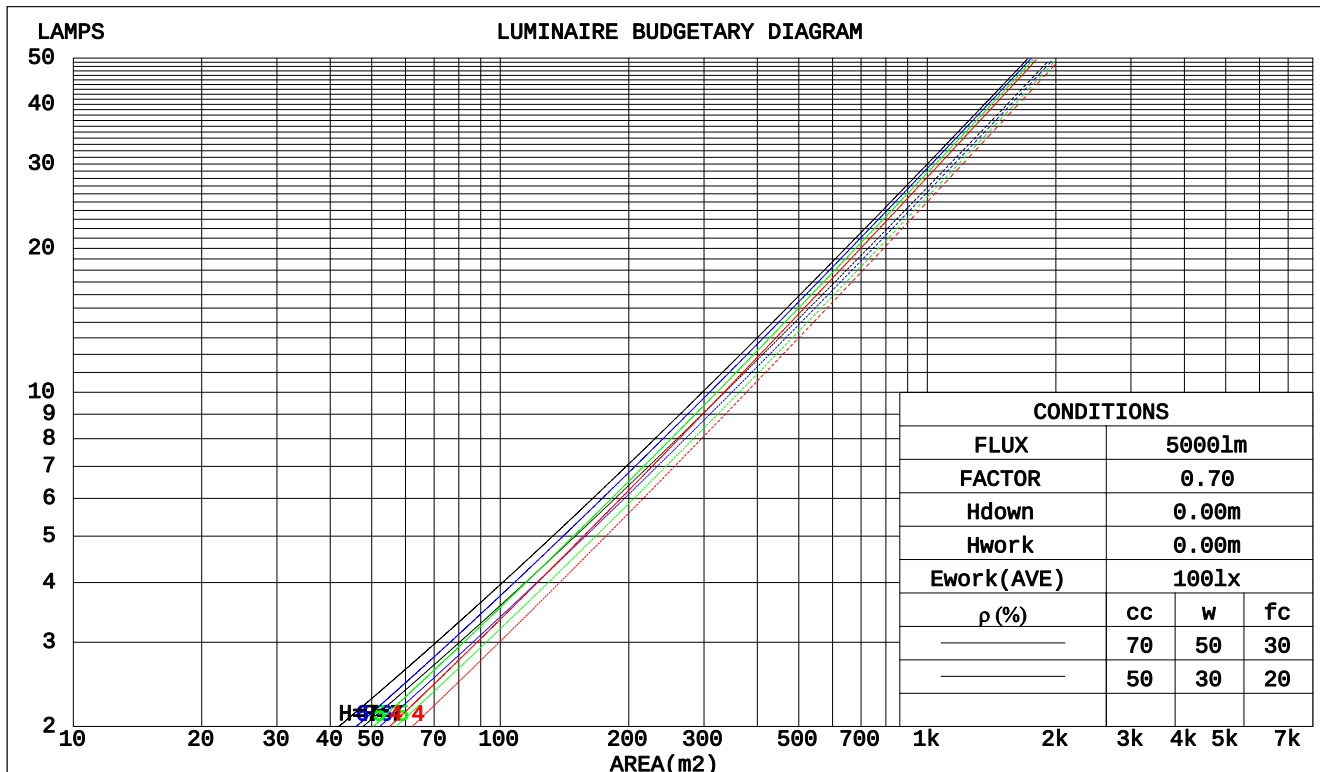
C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Vando
Test Date:2021-03-02

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 γ Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity:65.0%
Test Distance:7.000m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

NAME: HaLo-D12-3000k-RA90-48D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

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	1.19	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	1.12	1.09	1.07	1.09	1.07	1.06	1.05	1.04	1.02	1.02	1.00	.99	.98	.97	.96	.94
2.0	1.05	1.01	.98	1.03	.99	.97	.99	.97	.95	.97	.95	.93	.94	.92	.91	.89
3.0	.99	.95	.91	.98	.94	.90	.95	.92	.89	.93	.90	.87	.90	.88	.86	.85
4.0	.94	.89	.85	.92	.88	.84	.90	.86	.83	.88	.85	.82	.86	.84	.81	.80
5.0	.89	.83	.80	.88	.83	.79	.86	.82	.79	.84	.81	.78	.83	.80	.77	.76
6.0	.84	.79	.75	.83	.78	.75	.82	.78	.74	.81	.77	.74	.79	.76	.73	.72
7.0	.80	.75	.71	.79	.74	.71	.78	.74	.70	.77	.73	.70	.76	.72	.70	.68
8.0	.76	.71	.67	.76	.71	.67	.75	.70	.67	.74	.70	.67	.73	.69	.66	.65
9.0	.73	.68	.64	.72	.67	.64	.71	.67	.64	.70	.66	.63	.70	.66	.63	.62
10.0	.70	.64	.61	.69	.64	.61	.68	.64	.61	.68	.63	.61	.67	.63	.60	.59



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Vando
Test Date: 2021-03-02

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity: 65.0%
Test Distance: 7.000m [K=1.0000]
Remarks:

WEC AND CCEC

NAME: Halo-D12-3000k-RA90-48D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

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	.161	.091	.029	.154	.088	.028	.141	.081	.026	.129	.075	.024	.119	.069	.022		
2.0	.152	.083	.026	.146	.081	.025	.136	.075	.023	.126	.071	.022	.117	.066	.021		
3.0	.144	.077	.023	.139	.075	.022	.130	.071	.021	.122	.067	.020	.114	.063	.020		
4.0	.137	.071	.021	.133	.069	.021	.125	.066	.020	.118	.063	.019	.111	.060	.018		
5.0	.130	.066	.019	.127	.065	.019	.120	.062	.018	.114	.060	.018	.108	.058	.017		
6.0	.124	.062	.018	.121	.061	.018	.115	.059	.017	.110	.057	.017	.105	.055	.016		
7.0	.119	.059	.017	.116	.058	.016	.111	.056	.016	.106	.054	.016	.102	.053	.016		
8.0	.114	.056	.016	.112	.055	.016	.107	.053	.015	.103	.052	.015	.099	.051	.015		
9.0	.109	.053	.015	.107	.052	.015	.103	.051	.014	.099	.050	.014	.096	.049	.014		
10.0	.105	.050	.014	.103	.050	.014	.100	.049	.014	.096	.048	.014	.093	.047	.013		

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						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.193	.193	.193	.165	.165	.165	.113	.113	.113	.065	.065	.065	.021	.021	.021	
1.0	.173	.160	.149	.148	.138	.128	.101	.095	.089	.058	.055	.052	.019	.018	.017	
2.0	.157	.135	.118	.134	.117	.102	.092	.081	.071	.053	.047	.042	.017	.015	.014	
3.0	.143	.116	.095	.123	.100	.082	.084	.070	.058	.049	.041	.034	.016	.013	.011	
4.0	.132	.101	.078	.113	.088	.068	.078	.061	.048	.045	.036	.028	.015	.012	.009	
5.0	.123	.090	.065	.105	.077	.057	.073	.054	.040	.042	.032	.024	.014	.010	.008	
6.0	.115	.080	.055	.099	.069	.048	.068	.049	.034	.040	.029	.020	.013	.009	.007	
7.0	.108	.072	.047	.093	.063	.041	.064	.044	.029	.037	.026	.017	.012	.008	.006	
8.0	.102	.066	.041	.088	.057	.036	.061	.040	.025	.035	.024	.015	.011	.008	.005	
9.0	.097	.061	.036	.084	.053	.031	.058	.037	.022	.034	.022	.013	.011	.007	.004	
10.0	.093	.056	.032	.080	.049	.028	.055	.034	.020	.032	.020	.012	.010	.007	.004	

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Vando
Test Date:2021-03-02

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 γ Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity:65.0%
Test Distance:7.000m [K=1.0000]
Remarks:

Uncorrected UGR Table

NAME: Halo-D12-3000k-RA90-48D					TYPE:					WEIGHT:				
DIM.:					SPEC.:					SERIAL No.:				
MFR.:					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				
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	5.1	6.0	5.4	6.1	6.3	3.8	4.6	4.0	4.8	5.0				
3H	5.0	5.7	5.2	5.9	6.1	3.6	4.4	3.9	4.6	4.8				
4H	4.9	5.6	5.2	5.8	6.1	3.5	4.3	3.8	4.5	4.7				
6H	4.8	5.5	5.1	5.7	6.0	3.5	4.1	3.8	4.4	4.6				
8H	4.8	5.4	5.1	5.7	5.9	3.4	4.1	3.7	4.3	4.6				
12H	4.7	5.3	5.0	5.6	5.9	3.4	4.0	3.7	4.3	4.5				
4H 2H	4.9	5.6	5.2	5.8	6.1	3.5	4.3	3.8	4.5	4.7				
3H	4.7	5.3	5.0	5.6	5.9	3.4	4.0	3.7	4.3	4.5				
4H	4.6	5.2	5.0	5.5	5.8	3.3	3.8	3.6	4.1	4.5				
6H	4.5	5.0	4.9	5.3	5.7	3.2	3.7	3.6	4.0	4.4				
8H	4.5	4.9	4.9	5.3	5.7	3.1	3.6	3.5	3.9	4.3				
12H	4.4	4.8	4.8	5.2	5.6	3.1	3.5	3.5	3.9	4.3				
8H 4H	4.5	4.9	4.9	5.3	5.7	3.1	3.6	3.5	3.9	4.3				
6H	4.4	4.7	4.8	5.1	5.6	3.0	3.4	3.4	3.8	4.2				
8H	4.3	4.6	4.7	5.1	5.5	3.0	3.3	3.4	3.7	4.2				
12H	4.2	4.5	4.7	5.0	5.4	2.9	3.2	3.4	3.6	4.1				
12H 4H	4.4	4.8	4.8	5.2	5.6	3.1	3.5	3.5	3.9	4.3				
6H	4.3	4.6	4.7	5.1	5.5	3.0	3.3	3.4	3.7	4.2				
8H	4.2	4.5	4.7	5.0	5.4	2.9	3.2	3.4	3.6	4.1				
Variations with the observer position at spacings:														
S = 1.0H	+ 3.9 / -15.3					+ 3.4 / -15.9								
1.5H	+ 6.3 / -12.0					+ 5.7 / -11.5								
2.0H	+ 6.9 / -12.8					+ 6.4 / -12.6								

CIE Pub.117 Corrected 802.0 lm Total Lamp Luminous Flux.(8log(F/F0) = -0.8)

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Vando
Test Date:2021-03-02

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity:65.0%
Test Distance:7.000m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

NAME: Halo-D12-3000k-RA90-48D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

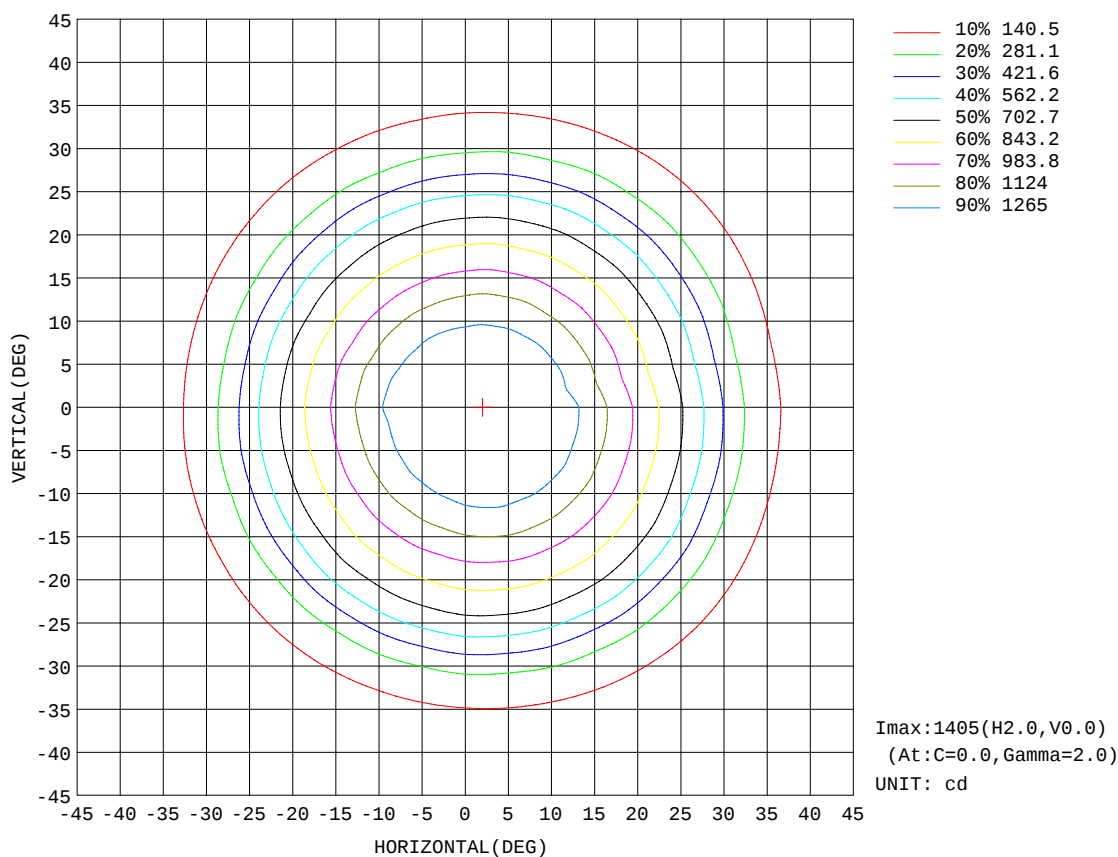
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	90	84	80	89	84	80	88	83	80	77
0.80	97	91	88	96	91	88	95	90	87	84
1.00	101	96	92	100	95	92	98	95	91	88
1.25	105	100	97	103	99	96	102	98	95	91
1.50	107	103	100	106	102	99	104	100	98	94
2.00	109	106	103	108	104	102	105	102	100	95
2.50	111	107	105	109	106	104	106	104	102	96
3.00	112	109	107	111	108	105	107	105	103	97
4.00	114	112	110	112	110	108	109	107	105	98
5.00	115	113	112	113	111	110	109	108	107	99
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: Vando
Test Date: 2021-03-02

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 γ Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity: 65.0%
Test Distance: 7.000m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

NAME: Ha1o-D12-3000k-RA90-48D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

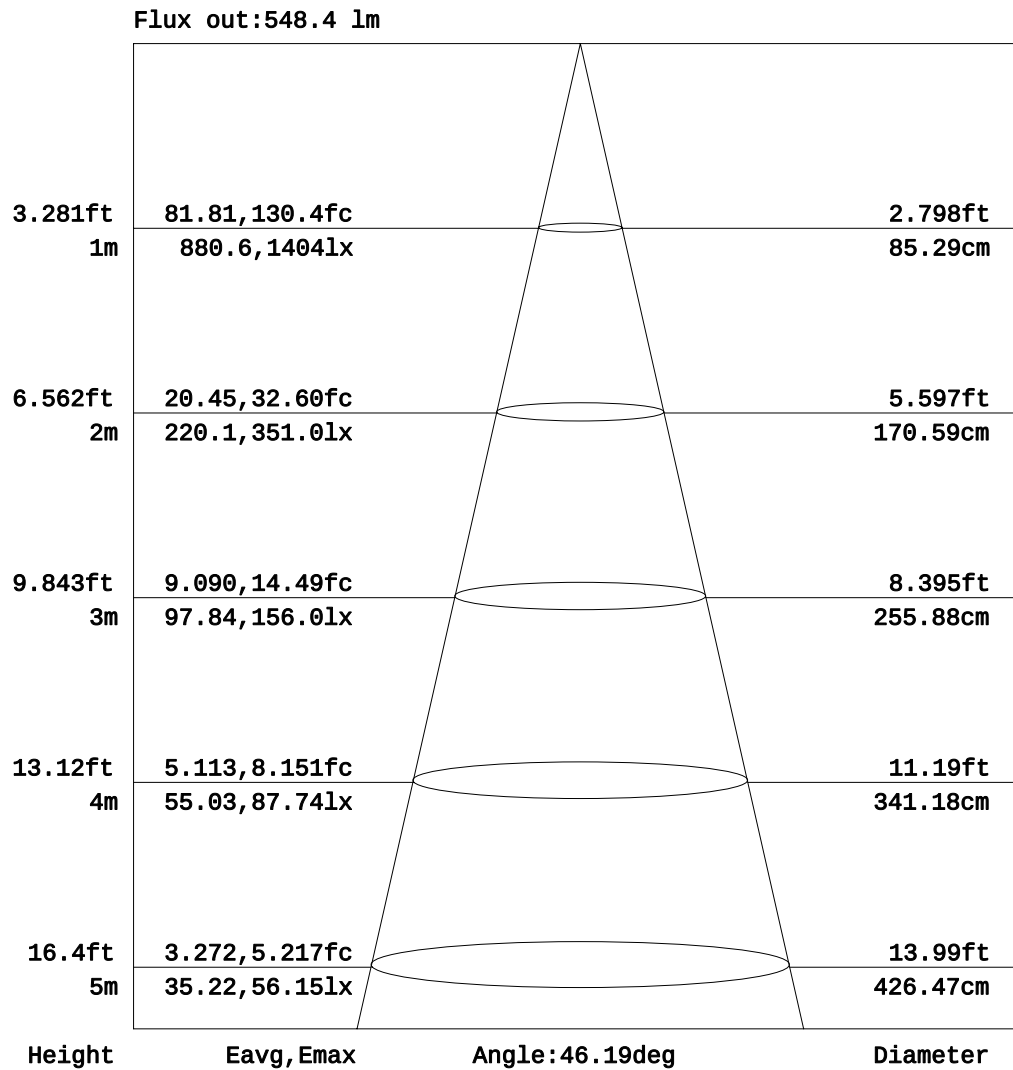


C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Vando
Test Date:2021-03-02

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity:65.0%
Test Distance:7.000m [K=1.0000]
Remarks:

AAI Figure

NAME: HaLo-D12-3000k-RA90-48D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:



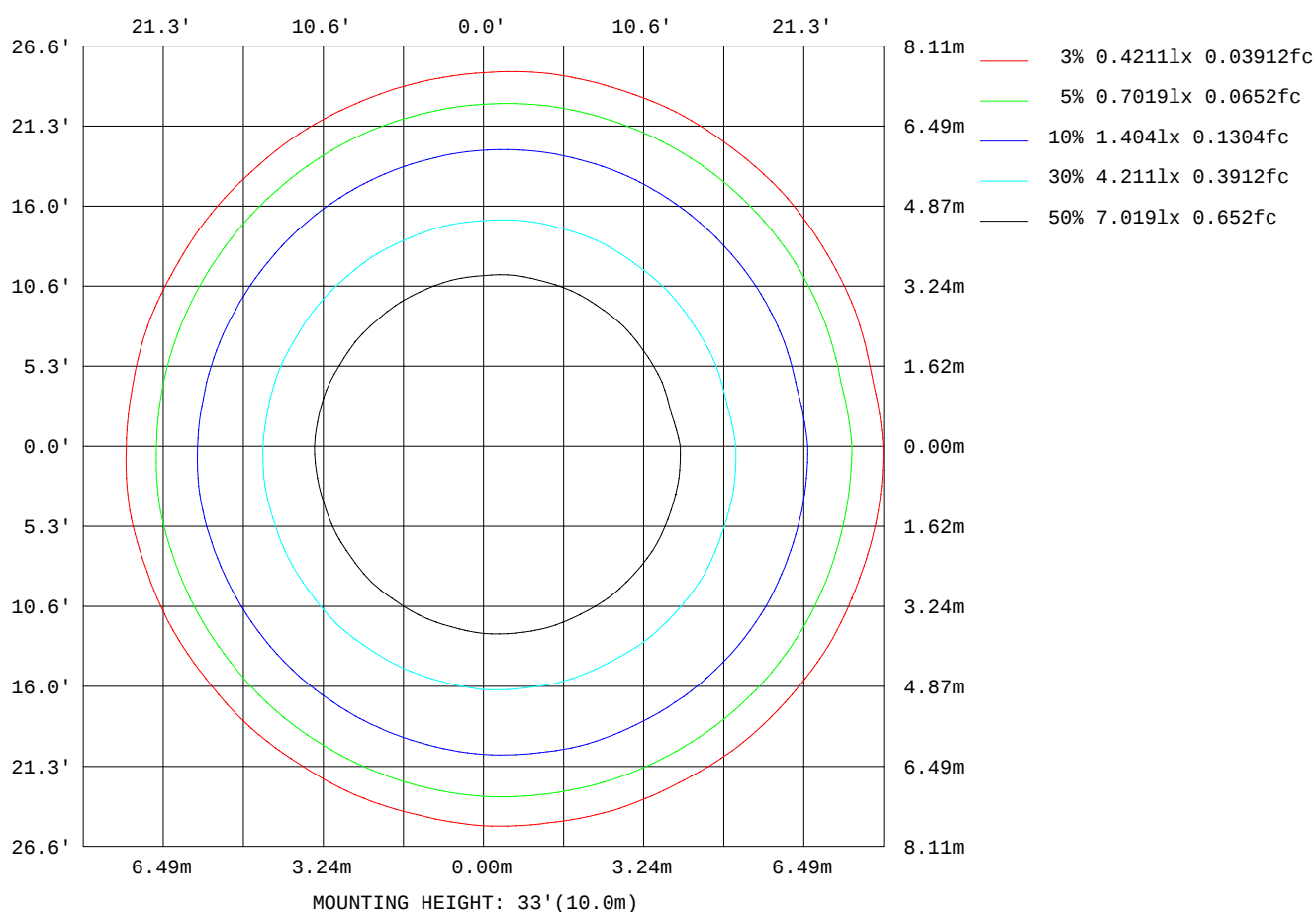
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Vando
Test Date: 2021-03-02

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity: 65.0%
Test Distance: 7.000m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

NAME: Ha1o-D12-3000k-RA90-48D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Vando
Test Date: 2021-03-02

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity: 65.0%
Test Distance: 7.000m [K=1.0000]
Remarks:

Average Luminance Table(CIBSE)

NAME: Halo-D12-3000k-RA90-48D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	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	801.979	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	C plane(deg)																		
deg	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
55	74	74	71	71	66	63	58	55	51	50	45	44	41	40	39	39	39	41	40
60	35	35	34	33	31	29	27	25	24	23	21	19	18	17	17	16	17	17	17
65	13	12	12	11	11	9	8	7	7	5	5	3	3	2	2	1	2	1	1
70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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

CIBSE Category	Gamma (deg)	Average Luminance		Patch Luminance	
		maximum calculated	specified maximum	maximum measured	specified maximum
Category 1	55 to 90	74	200	---	500
Category 2	65 to 90	13	200	---	500
Category 3	75 to 90	0	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:Vando
Test Date:2021-03-02

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity:65.0%
Test Distance:7.000m [K=1.0000]
Remarks:

Average Luminance Table(CIBSE)

NAME: Halo-D12-3000k-RA90-48D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	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	801.979	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	74	74	71	71	66	63	58	55	51	50	45	44	41	40	39	39	39	41	40
60	35	35	34	33	31	29	27	25	24	23	21	19	18	17	17	16	17	17	17
65	13	12	12	11	11	9	8	7	7	5	5	3	3	2	2	1	2	1	1
70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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	74	1000	1500	200	500
65 to 90	13	1000	1500	200	500

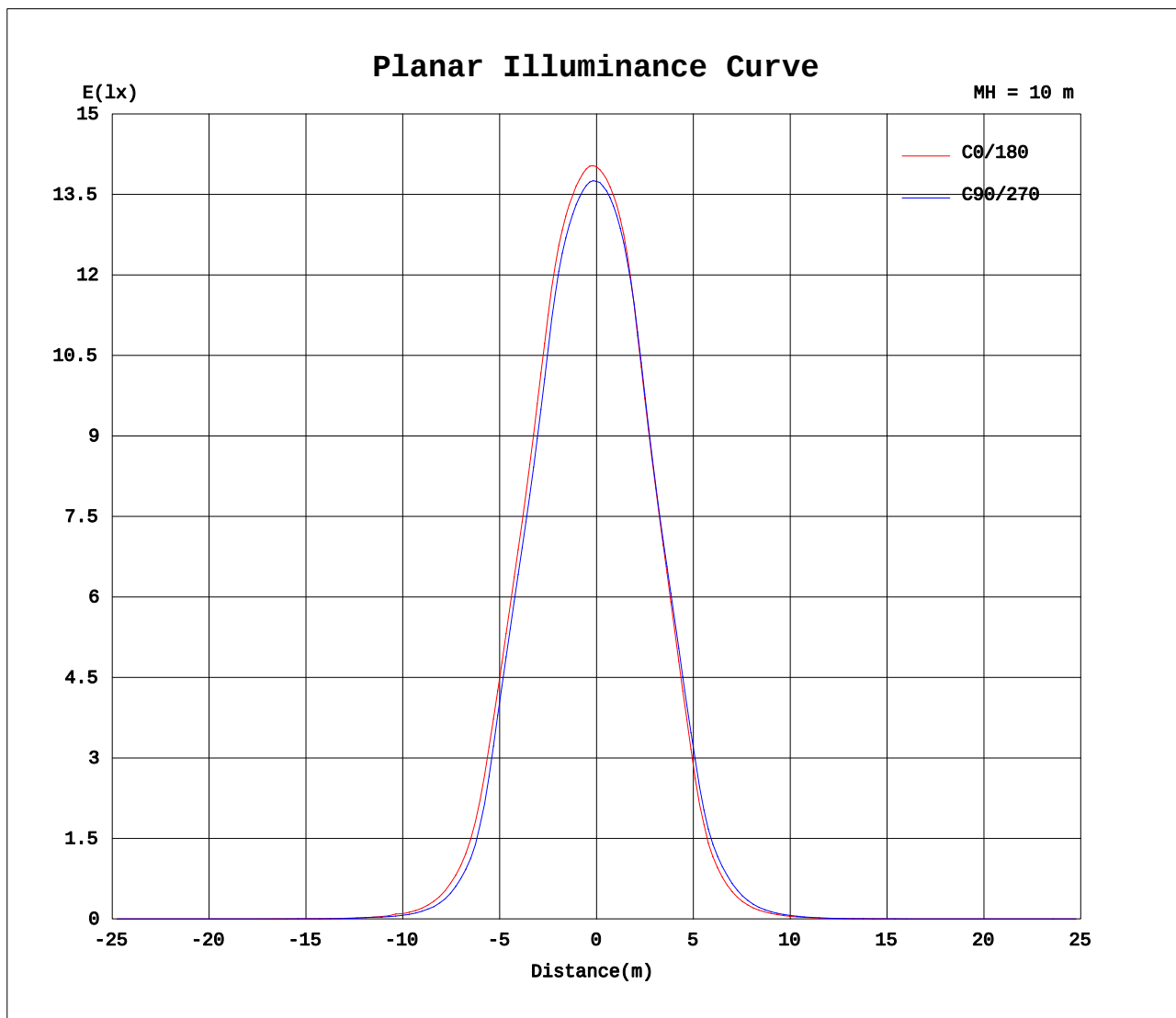
Table 3. Tabulation of average luminance(cd/sq.m.) and luminance limits

The luminaire satisfies the specified luminance criteria for
Negative Software with Type I & II Screen(Good to Moderate treatment).

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Vando
Test Date:2021-03-02

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity:65.0%
Test Distance:7.000m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Vando
Test Date: 2021-03-02

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity: 65.0%
Test Distance: 7.000m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: HaLo-D12-3000k-RA90-48D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

Table--1

UNIT: cd

C(°) γ (°)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
0	1402	1396	1392	1388	1385	1383	1381	1380	1375	1375	1374	1372	1372	1371	1371	1371	1371	1372	1402
5	1394	1390	1387	1385	1380	1378	1374	1371	1364	1361	1356	1354	1351	1349	1346	1343	1340	1339	1364
10	1344	1345	1343	1342	1336	1330	1323	1319	1308	1299	1287	1278	1266	1261	1250	1245	1236	1236	1251
15	1190	1196	1194	1201	1190	1184	1166	1157	1134	1117	1090	1078	1058	1049	1029	1023	1011	1008	1013
20	955	964	964	969	960	952	936	925	906	892	869	855	834	824	803	793	781	779	777
25	715	724	724	733	725	720	701	690	671	656	627	607	583	568	543	530	514	511	499
30	413	426	420	432	418	410	386	373	347	331	303	292	267	254	242	234	228	226	217
35	182	182	181	181	177	169	162	154	146	137	129	120	112	108	102	99.1	96.2	96.8	92.8
40	74.0	74.1	72.2	71.9	68.2	65.2	60.3	57.6	53.5	51.8	47.2	44.7	42.1	40.8	39.0	38.4	37.4	37.9	36.8
45	28.3	27.9	27.1	26.8	25.4	24.7	23.1	22.2	20.7	20.1	18.6	17.8	16.7	16.2	15.3	15.2	14.8	14.9	14.5
50	10.9	10.9	10.5	10.4	9.86	9.50	8.77	8.46	7.82	10.0	6.88	6.57	6.10	5.97	5.71	5.65	5.56	5.69	5.57
55	4.22	4.26	4.06	4.06	3.77	3.62	3.31	3.17	2.94	2.88	2.61	2.50	2.36	2.31	2.25	2.26	2.26	2.33	2.32
60	1.76	1.74	1.68	1.63	1.55	1.46	1.36	1.26	1.19	1.13	1.03	0.94	0.89	0.84	0.84	0.82	0.84	0.86	0.86
65	0.55	0.52	0.52	0.47	0.45	0.38	0.35	0.28	0.28	0.22	0.19	0.13	0.13	0.07	0.09	0.04	0.07	0.04	0.05
70	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
75	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
80	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
85	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
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	0.00	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	0.00	0.00	0.00	0.00	0.00
110	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
115	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
120	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
125	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	0.01	0.03
130	0.01	0.05	0.00	0.04	0.00	0.04	0.00	0.05	0.01	0.05	0.03	0.09	0.05	0.12	0.08	0.13	0.10	0.16	0.18
135	0.22	0.25	0.19	0.23	0.17	0.22	0.18	0.24	0.21	0.23	0.23	0.29	0.27	0.34	0.32	0.38	0.35	0.40	0.43
140	0.51	0.54	0.47	0.51	0.46	0.51	0.47	0.52	0.50	0.53	0.54	0.60	0.59	0.66	0.65	0.72	0.71	0.76	0.78
145	0.89	0.90	0.84	0.87	0.82	0.87	0.83	0.89	0.87	0.91	0.93	0.99	0.99	1.07	1.08	1.15	1.14	1.20	1.23
150	1.36	1.37	1.31	1.33	1.28	1.32	1.29	1.34	1.32	1.39	1.40	1.47	1.47	1.55	1.56	1.63	1.62	1.69	1.73
155	1.87	1.88	1.82	1.84	1.79	1.83	1.80	1.85	1.83	1.89	1.90	1.97	1.98	2.05	2.04	2.12	2.12	2.18	2.23
160	2.40	2.40	2.34	2.35	2.31	2.34	2.30	2.36	2.33	2.39	2.39	2.46	2.46	2.53	2.53	2.60	2.60	2.66	2.74
165	2.91	2.93	2.85	2.87	2.82	2.86	2.81	2.87	2.83	2.90	2.88	2.95	2.95	3.02	3.02	3.10	3.09	3.16	3.25
170	3.41	3.42	3.35	3.37	3.31	3.34	3.30	3.35	3.31	3.37	3.35	3.42	3.40	3.46	3.45	3.53	3.51	3.59	3.70
175	3.82	3.85	3.77	3.80	3.73	3.77	3.72	3.76	3.71	3.77	3.73	3.79	3.76	3.82	3.79	3.85	3.84	3.91	4.04
180	4.08	4.08	4.04	4.04	4.00	4.01	3.99	3.99	3.96	3.97	3.96	3.96	3.95	3.99	3.95	3.95	3.96	3.99	4.10

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Vando
Test Date: 2021-03-02

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity: 65.0%
Test Distance: 7.000m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: HaLo-D12-3000k-RA90-48D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

Table--2

UNIT: cd

C(°) γ (°)	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350		
0	1396	1392	1388	1385	1383	1381	1380	1375	1375	1374	1372	1372	1371	1371	1371	1371	1372		
5	1357	1351	1345	1343	1341	1342	1343	1341	1344	1346	1349	1353	1355	1356	1358	1360	1361		
10	1239	1236	1226	1226	1225	1232	1235	1239	1245	1258	1265	1276	1283	1295	1302	1310	1309		
15	1002	999	984	988	985	991	997	1009	1021	1042	1055	1077	1089	1111	1124	1140	1145		
20	767	764	752	755	754	763	769	782	791	810	820	841	855	877	889	908	912		
25	484	482	471	478	481	496	502	522	535	559	575	600	613	636	649	670	675		
30	213	211	208	210	216	223	232	243	258	279	287	311	324	347	360	377	379		
35	91.0	92.0	91.2	93.9	96.3	102	106	113	120	129	136	143	150	156	163	166	167		
40	36.3	36.7	36.4	37.7	38.5	40.9	42.5	45.6	48.6	52.7	55.2	59.5	61.8	65.9	67.2	69.3	68.1		
45	14.3	14.5	14.3	14.8	15.0	16.0	16.6	17.9	19.0	20.8	21.8	23.4	24.2	25.7	26.1	26.9	26.3		
50	5.52	5.54	5.43	5.52	5.55	5.78	5.99	6.38	6.71	7.40	7.70	8.48	8.85	9.58	9.84	10.2	10.1		
55	2.29	2.29	2.24	2.26	2.26	2.33	2.39	2.50	2.61	2.80	2.90	3.14	3.27	3.57	3.68	3.91	3.89		
60	0.87	0.84	0.85	0.84	0.88	0.90	0.96	1.00	1.08	1.13	1.20	1.26	1.35	1.44	1.52	1.59	1.62		
65	0.09	0.05	0.10	0.06	0.12	0.10	0.18	0.16	0.24	0.24	0.32	0.32	0.39	0.39	0.45	0.45	0.50		
70	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		
75	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		
80	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		
85	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		
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	0.00		
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		
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	0.00	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		
110	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		
115	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		
120	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		
125	0.00	0.03	0.00	0.04	0.00	0.03	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
130	0.14	0.19	0.15	0.19	0.14	0.17	0.12	0.15	0.10	0.13	0.07	0.11	0.05	0.08	0.03	0.07	0.01		
135	0.41	0.45	0.42	0.45	0.41	0.43	0.38	0.40	0.34	0.37	0.30	0.31	0.26	0.28	0.22	0.24	0.20		
140	0.76	0.81	0.78	0.82	0.77	0.80	0.74	0.76	0.69	0.70	0.62	0.63	0.57	0.58	0.51	0.53	0.48		
145	1.21	1.26	1.24	1.27	1.22	1.25	1.19	1.19	1.13	1.12	1.05	1.05	0.97	0.97	0.91	0.92	0.87		
150	1.70	1.75	1.73	1.76	1.71	1.74	1.68	1.68	1.60	1.60	1.52	1.51	1.44	1.44	1.37	1.37	1.32		
155	2.20	2.25	2.22	2.26	2.21	2.23	2.17	2.18	2.10	2.09	2.02	2.01	1.93	1.93	1.86	1.87	1.82		
160	2.70	2.75	2.71	2.75	2.70	2.71	2.65	2.66	2.59	2.58	2.49	2.49	2.41	2.41	2.34	2.35	2.30		
165	3.21	3.25	3.20	3.25	3.19	3.21	3.15	3.16	3.08	3.08	2.99	2.99	2.91	2.91	2.84	2.85	2.79		
170	3.65	3.69	3.64	3.68	3.62	3.66	3.59	3.60	3.53	3.54	3.45	3.46	3.38	3.40	3.33	3.35	3.29		
175	3.98	4.01	3.96	3.99	3.93	3.96	3.90	3.93	3.86	3.89	3.81	3.84	3.77	3.80	3.74	3.77	3.73		
180	4.07	4.07	4.04	4.04	4.01	4.01	4.00	3.98	3.97	3.97	3.97	3.97	3.95	3.95	3.95	3.96	3.98		

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Vando
Test Date:2021-03-02

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity:65.0%
Test Distance:7.000m [K=1.0000]
Remarks: