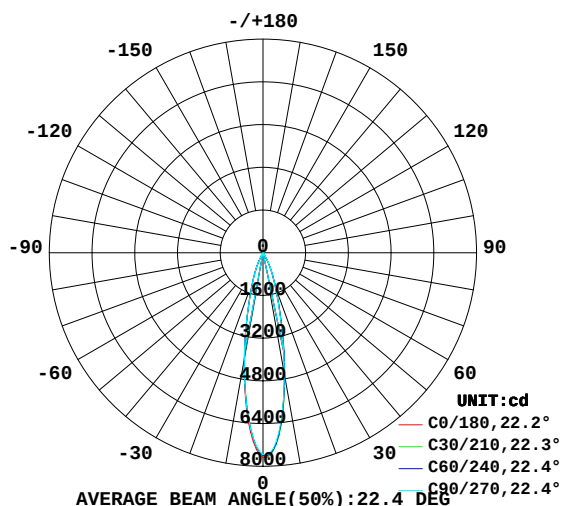


LUMINAIRE PHOTOMETRIC TEST REPORT

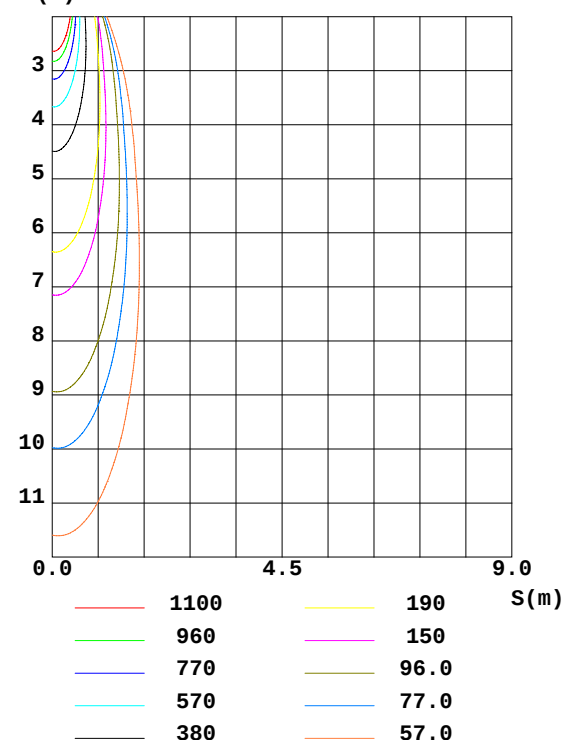
NAME: CL-Halo-D18 3000k-RA90-20D	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 81.61 lm/W			
MODEL		Imax(cd)	7673	S/MH(C0/180)	0.40
NOMINAL POWER(W)	18	LOR(%)	100.0	S/MH(C90/270)	0.40
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	1527.7	η UP, DN(C0-180)	0.2, 53.5
NOMINAL FLUX(lm)	1527.7	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.2, 46.1
LAMPS INSIDE	1	η up(%)	0.4	CIBSE SHR NOM	0.00
TEST VOLTAGE(V)	24	η down(%)	99.6	CIBSE SHR MAX	1.00

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:0
Test Date:2022-04-21

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity:65.0%
Test Distance:7.100m [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	4607	4691	4621	4370	4065	3984	4039	4157	0- 10	548.7	548.7	35.9, 35.9
20	1339	1387	1345	1233	1123	1083	1091	1149	10- 20	660.8	1209	79.2, 79.2
30	173.6	249.3	247.2	186.1	114.9	95.05	89.13	97.66	20- 30	273.5	1483	97.1, 97.1
40	17.29	19.00	18.78	16.55	14.49	13.29	13.11	13.91	30- 40	29.63	1513	99, 99
50	4.501	4.945	4.935	4.355	3.774	3.431	3.402	3.631	40- 50	6.630	1519	99.4, 99.4
60	1.059	1.168	1.154	1.038	0.8334	0.7359	0.7515	0.8184	50- 60	1.976	1521	99.6, 99.6
70	0	0	0	0	0	0	0	0	60- 70	0.2929	1521	99.6, 99.6
80	0	0	0	0	0	0	0	0	70- 80	0	1521	99.6, 99.6
90	0	0	0	0	0	0	0	0	80- 90	0	1521	99.6, 99.6
100	0	0	0	0	0	0	0	0	90-100	0	1521	99.6, 99.6
110	0	0	0	0	0	0	0	0	100-110	0	1521	99.6, 99.6
120	0	0	0	0	0	0	0	0	110-120	0	1521	99.6, 99.6
130	0	0	0	0	0.0618	0.0614	0.0328	0.0355	120-130	0.0023	1521	99.6, 99.6
140	0.4990	0.4742	0.4919	0.5190	0.7425	0.7884	0.7492	0.6868	130-140	0.1757	1522	99.6, 99.6
150	2.564	2.477	2.504	2.617	2.911	3.000	2.933	2.750	140-150	0.9138	1523	99.7, 99.7
160	6.400	6.253	6.275	6.389	6.602	6.603	6.505	6.324	150-160	2.037	1525	99.8, 99.8
170	9.191	9.004	8.968	8.957	9.190	9.018	8.923	8.849	160-170	2.198	1527	99.9, 99.9
180	9.957	9.750	9.660	9.594	9.981	9.754	9.641	9.589	170-180	0.8890	1528	100, 100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

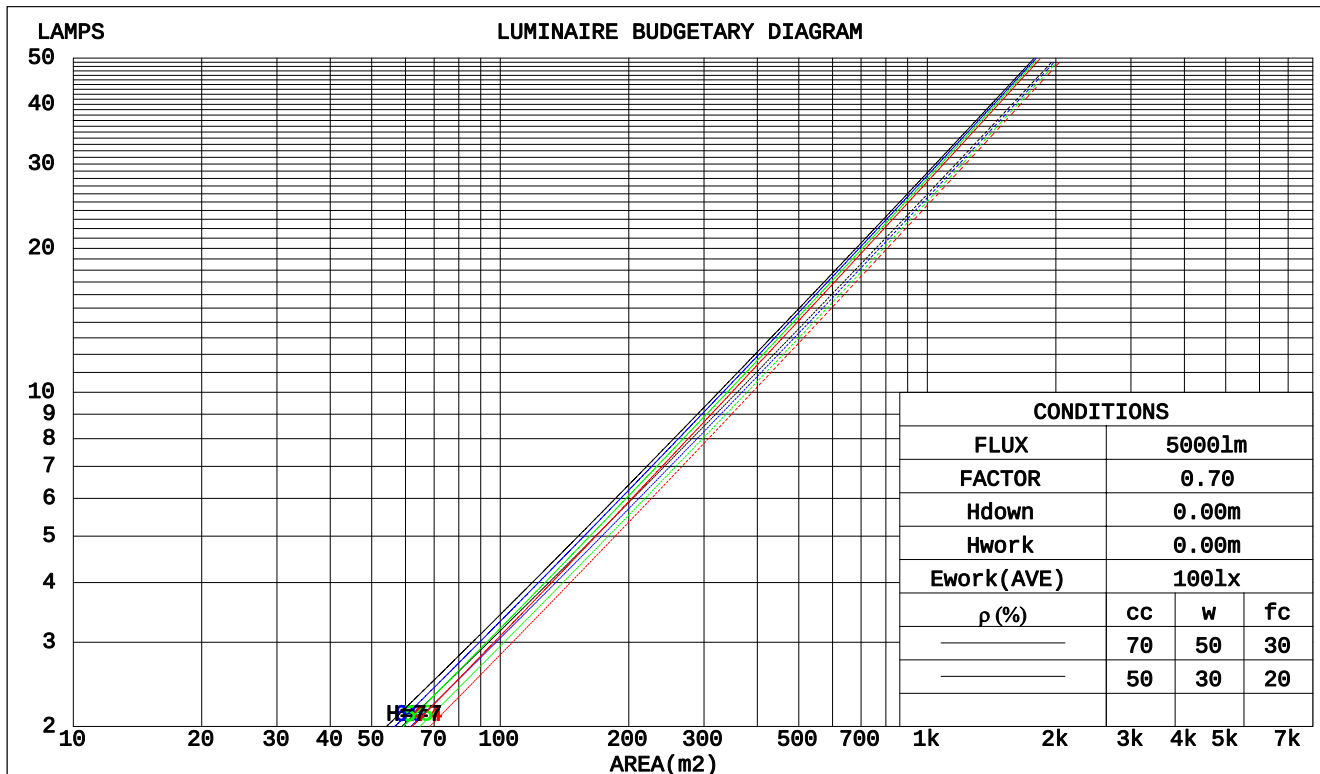
C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:0
Test Date:2022-04-21

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity:65.0%
Test Distance:7.100m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

NAME: Halo-D18-3000K-RA90-18W-20D.	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: 0	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	1.13	1.11	1.09	1.11	1.09	1.08	1.07	1.05	1.04	1.03	1.02	1.01	.00	.99	.98	.96
2.0	1.08	1.05	1.02	1.06	1.03	1.01	1.03	1.01	.99	.00	.98	.97	.97	.96	.95	.93
3.0	1.03	.00	.97	1.02	.99	.96	.99	.97	.95	.97	.95	.93	.95	.93	.92	.90
4.0	.99	.95	.92	.98	.95	.92	.96	.93	.91	.94	.92	.90	.93	.90	.89	.88
5.0	.96	.92	.89	.95	.91	.88	.93	.90	.88	.92	.89	.87	.90	.88	.86	.85
6.0	.92	.88	.85	.92	.88	.85	.90	.87	.85	.89	.86	.84	.88	.85	.83	.82
7.0	.90	.85	.83	.89	.85	.82	.88	.84	.82	.87	.84	.82	.86	.83	.81	.80
8.0	.87	.83	.80	.86	.82	.80	.85	.82	.79	.84	.81	.79	.84	.81	.79	.78
9.0	.84	.80	.78	.84	.80	.77	.83	.80	.77	.82	.79	.77	.82	.79	.77	.76
10.0	.82	.78	.75	.82	.78	.75	.81	.78	.75	.80	.77	.75	.80	.77	.75	.74



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: 0
Test Date: 2022-04-21

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity: 65.0%
Test Distance: 7.100m [K=1.0000]
Remarks:

WEC AND CCEC

NAME: Halo-D18-3000K-RA90-18W-20D.	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: 0	SUR.:	PROTECTION ANGLE:

ρcc	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						Wall Exitance Coefficients(WEC)										
0.0																	
1.0	.135	.077	.024	.128	.073	.023	.116	.066	.021	.104	.060	.019	.094	.054	.017		
2.0	.125	.069	.021	.120	.066	.020	.109	.061	.019	.100	.056	.017	.091	.051	.016		
3.0	.116	.062	.019	.112	.060	.018	.103	.056	.017	.095	.052	.016	.088	.049	.015		
4.0	.109	.057	.017	.105	.055	.016	.098	.052	.016	.091	.049	.015	.085	.046	.014		
5.0	.103	.052	.015	.100	.051	.015	.093	.049	.014	.087	.046	.014	.082	.044	.013		
6.0	.097	.049	.014	.095	.048	.014	.089	.046	.013	.084	.044	.013	.079	.042	.012		
7.0	.093	.046	.013	.090	.045	.013	.085	.043	.012	.081	.041	.012	.077	.040	.012		
8.0	.088	.043	.012	.086	.042	.012	.082	.041	.012	.078	.040	.011	.074	.038	.011		
9.0	.084	.041	.011	.082	.040	.011	.079	.039	.011	.075	.038	.011	.072	.037	.011		
10.0	.081	.039	.011	.079	.038	.011	.076	.037	.010	.073	.036	.010	.070	.035	.010		

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	.194	.194	.194	.165	.165	.165	.113	.113	.113	.065	.065	.065	.021	.021	.021	
1.0	.171	.161	.151	.147	.138	.130	.100	.095	.090	.058	.055	.052	.018	.018	.017	
2.0	.153	.136	.121	.131	.117	.105	.090	.081	.073	.052	.047	.043	.017	.015	.014	
3.0	.138	.116	.099	.118	.100	.086	.081	.070	.060	.047	.041	.036	.015	.013	.012	
4.0	.126	.101	.082	.108	.087	.072	.074	.061	.050	.043	.036	.030	.014	.012	.010	
5.0	.115	.089	.069	.099	.077	.060	.068	.054	.043	.039	.031	.025	.013	.010	.008	
6.0	.106	.079	.059	.091	.068	.051	.063	.048	.036	.036	.028	.022	.012	.009	.007	
7.0	.098	.071	.051	.085	.061	.044	.059	.043	.031	.034	.025	.019	.011	.008	.006	
8.0	.092	.064	.044	.079	.055	.039	.055	.039	.027	.032	.023	.016	.010	.008	.005	
9.0	.086	.058	.039	.074	.050	.034	.052	.035	.024	.030	.021	.014	.010	.007	.005	
10.0	.081	.053	.035	.070	.046	.030	.049	.033	.021	.028	.019	.013	.009	.006	.004	

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:0
Test Date:2022-04-21

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity:65.0%
Test Distance:7.100m [K=1.0000]
Remarks:

Uncorrected UGR Table

NAME: Halo-D18-3000K-RA90-18W-20D.						TYPE:					WEIGHT:				
DIM.:						SPEC.:					SERIAL No.:				
MFR.: 0						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						-6.1	-5.5	-5.9	-5.4	-5.2	-4.5	-3.9	-4.3	-3.8	-3.6
3H						-6.3	-5.7	-6.0	-5.5	-5.3	-4.7	-4.1	-4.5	-3.9	-3.7
4H						-6.4	-5.8	-6.1	-5.6	-5.4	-4.8	-4.2	-4.5	-4.0	-3.8
6H						-6.5	-5.9	-6.2	-5.7	-5.4	-4.9	-4.3	-4.6	-4.1	-3.8
8H						-6.5	-6.0	-6.2	-5.7	-5.5	-4.9	-4.4	-4.6	-4.1	-3.9
12H						-6.5	-6.0	-6.2	-5.8	-5.5	-4.9	-4.5	-4.6	-4.2	-3.9
4H 2H						-6.3	-5.8	-6.1	-5.6	-5.4	-4.8	-4.2	-4.5	-4.0	-3.8
3H						-6.5	-6.0	-6.2	-5.8	-5.5	-4.9	-4.4	-4.6	-4.2	-3.9
4H						-6.6	-6.2	-6.3	-5.9	-5.6	-5.0	-4.6	-4.7	-4.3	-4.0
6H						-6.7	-6.3	-6.4	-6.0	-5.6	-5.1	-4.7	-4.8	-4.4	-4.1
8H						-6.8	-6.4	-6.4	-6.0	-5.7	-5.2	-4.8	-4.8	-4.5	-4.1
12H						-6.8	-6.5	-6.4	-6.1	-5.7	-5.2	-4.9	-4.8	-4.5	-4.1
8H 4H						-6.8	-6.4	-6.4	-6.0	-5.7	-5.2	-4.8	-4.8	-4.5	-4.1
6H						-6.9	-6.6	-6.5	-6.2	-5.8	-5.3	-5.0	-4.9	-4.6	-4.2
8H						-7.0	-6.7	-6.5	-6.3	-5.8	-5.4	-5.1	-4.9	-4.7	-4.2
12H						-7.0	-6.8	-6.6	-6.3	-5.9	-5.4	-5.2	-5.0	-4.7	-4.3
12H 4H						-6.8	-6.5	-6.4	-6.1	-5.7	-5.2	-4.9	-4.8	-4.5	-4.1
6H						-7.0	-6.7	-6.5	-6.3	-5.8	-5.4	-5.1	-4.9	-4.7	-4.2
8H						-7.0	-6.8	-6.6	-6.3	-5.9	-5.4	-5.2	-5.0	-4.7	-4.3
Variations with the observer position at spacings:															
S = 1.0H						+ 2.7 / - 8.7					+ 3.1 / - 8.8				
1.5H						+ 4.3 / - 5.7					+ 4.8 / - 5.9				
2.0H						+ 5.1 / - 9.3					+ 5.3 / - 8.7				

CIE Pub.117 Corrected 1528 lm Total Lamp Luminous Flux.(8log(F/F0) = 1.5)

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:0
Test Date:2022-04-21

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity:65.0%
Test Distance:7.100m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

NAME: Halo-D18-3000K-RA90-18W-20D.	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: 0	SUR.:	PROTECTION ANGLE:

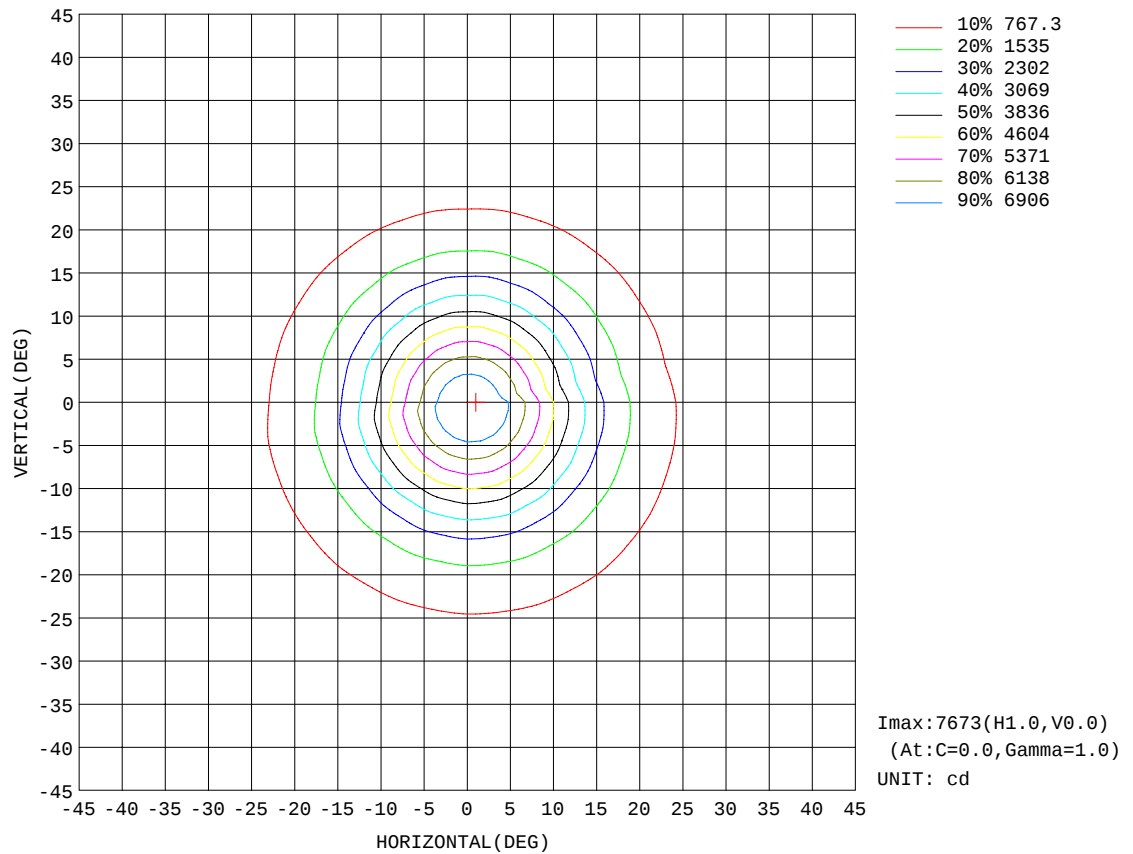
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	91	85	82	90	85	82	90	85	82	78
0.80	98	93	89	97	92	89	96	92	89	86
1.00	102	97	93	101	96	93	99	96	93	89
1.25	105	101	97	104	100	97	102	99	96	92
1.50	108	103	100	106	103	100	104	101	99	95
2.00	110	106	103	108	105	102	106	103	101	96
2.50	111	108	105	110	107	104	107	104	102	96
3.00	113	109	107	111	108	106	107	105	104	97
4.00	114	112	110	112	110	109	109	107	106	99
5.00	116	114	112	113	112	110	109	108	107	100
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: 0
Test Date: 2022-04-21

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 γ Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity: 65.0%
Test Distance: 7.100m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

NAME: HaIo-D18-3000K-RA90-18W-20D.	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: 0	SUR.:	PROTECTION ANGLE:

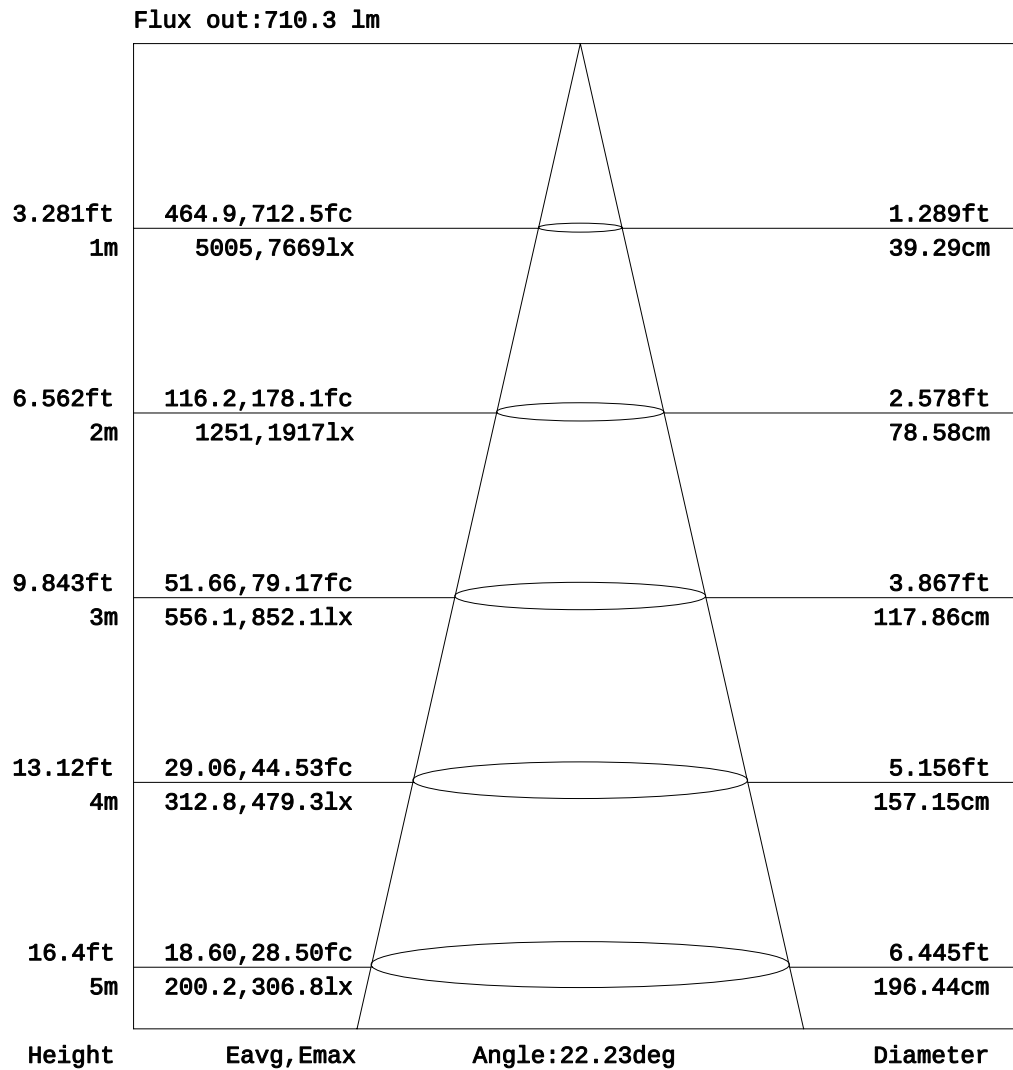


C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: 0
Test Date: 2022-04-21

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity: 65.0%
Test Distance: 7.100m [K=1.0000]
Remarks:

AAI Figure

NAME: HaIo-D18-3000K-RA90-18W-20D.	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: 0	SUR.:	PROTECTION ANGLE:



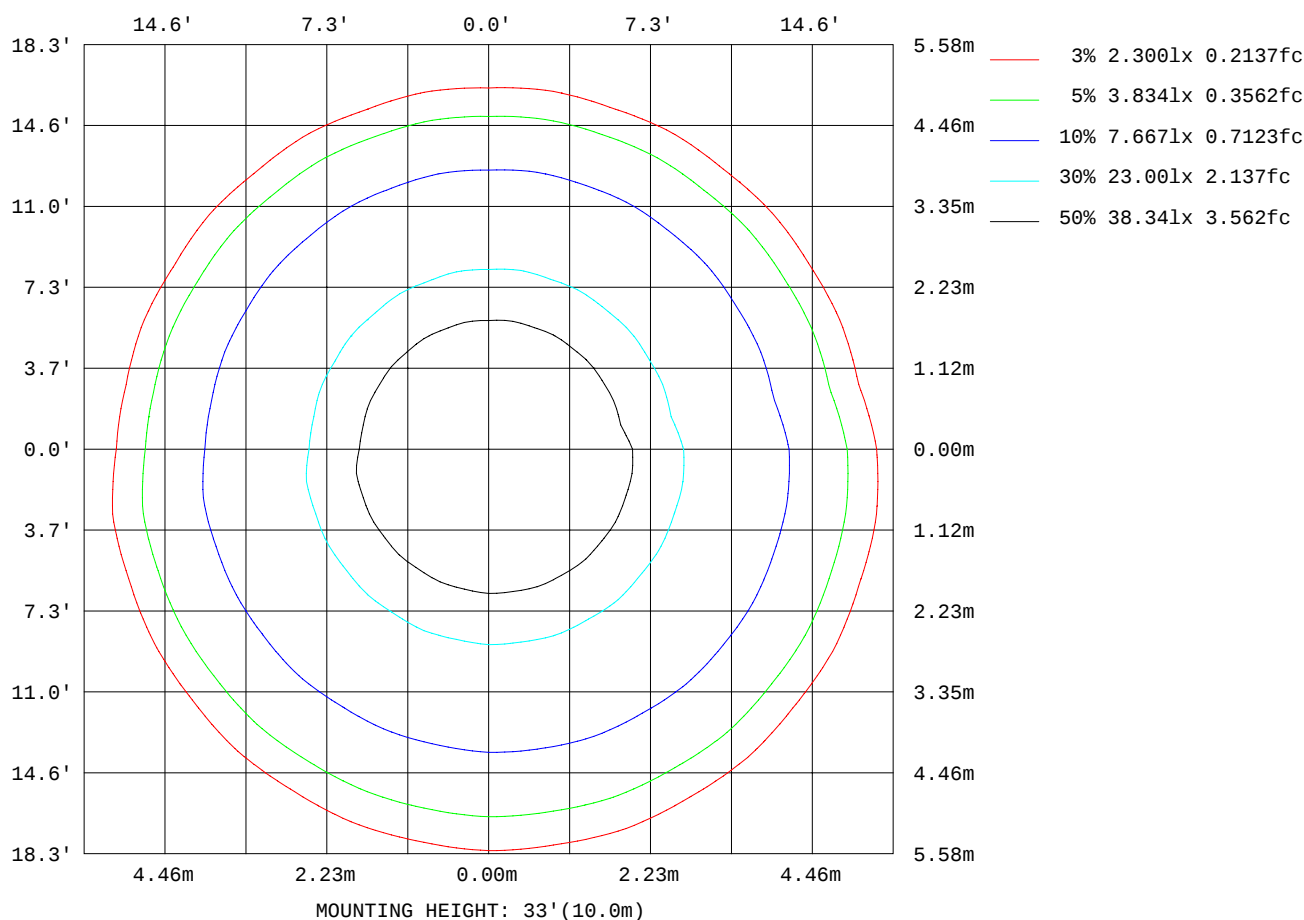
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:0
Test Date:2022-04-21

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity:65.0%
Test Distance:7.100m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

NAME: Ha1o-D18-3000K-RA90-18W-20D.	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: 0	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: 0
Test Date: 2022-04-21

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity: 65.0%
Test Distance: 7.100m [K=1.0000]
Remarks:

Average Luminance Table(CIBSE)

NAME: Halo-D18-3000K-RA90-18W-20D.	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: 0	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	1527.7	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	41	42	43	43	44	45	45	46	45	44	42	41	40	40	38	37	36	35	33
60	21	21	23	23	23	23	25	25	24	23	23	22	22	21	21	19	19	18	17
65	7	6	8	7	8	7	9	8	9	8	8	7	8	6	7	6	6	5	3
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	46	200	---	500
Category 2	65 to 90	9	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:0
Test Date:2022-04-21

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity:65.0%
Test Distance:7.100m [K=1.0000]
Remarks:

Average Luminance Table(CIBSE)

NAME: Halo-D18-3000K-RA90-18W-20D.	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: 0	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	1527.7	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	41	42	43	43	44	45	45	46	45	44	42	41	40	40	38	37	36	35	33
60	21	21	23	23	23	23	25	25	24	23	23	22	22	21	21	19	19	18	17
65	7	6	8	7	8	7	9	8	9	8	8	7	8	6	7	6	6	5	3
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	46	1000	1500	200	500
65 to 90	9	1000	1500	200	500

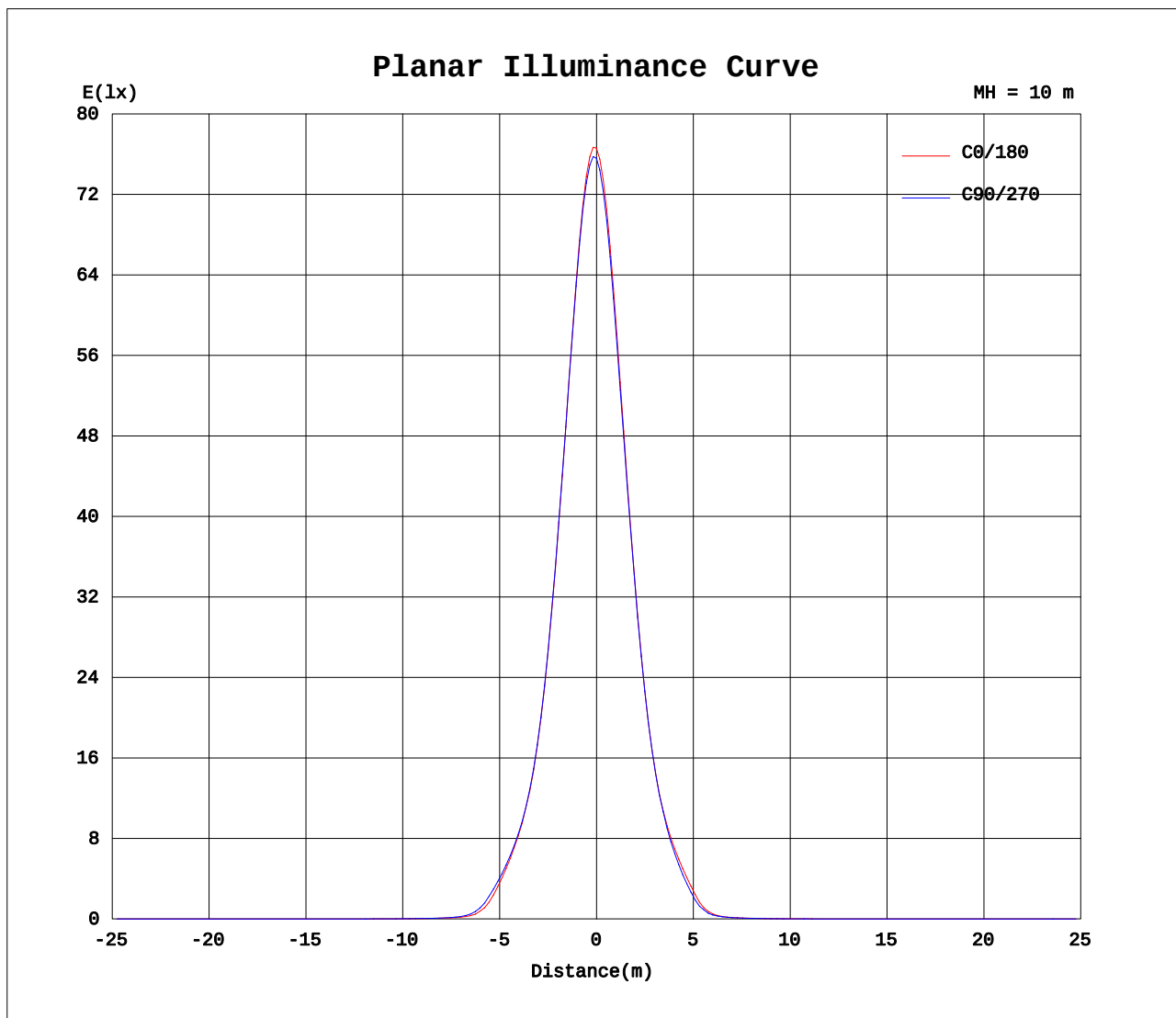
Table 3. Tabulation of average luminance(cd/sq.m.) and luminance limits

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:0
Test Date:2022-04-21

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_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: 0
Test Date: 2022-04-21

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity: 65.0%
Test Distance: 7.100m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: Halo-D18-3000K-RA90-18W-20D.	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: 0	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	7661	7638	7628	7609	7603	7587	7584	7572	7573	7561	7562	7556	7558	7556	7558	7558	7561	7564	7661
5	6822	6862	6845	6879	6853	6872	6828	6835	6783	6778	6713	6702	6632	6619	6553	6547	6488	6493	6338
10	4607	4671	4651	4704	4669	4713	4669	4691	4623	4621	4532	4521	4424	4416	4323	4316	4244	4260	4065
15	2566	2624	2602	2650	2623	2667	2620	2640	2580	2581	2505	2503	2418	2411	2339	2342	2282	2299	2168
20	1339	1358	1369	1386	1376	1397	1373	1382	1365	1345	1315	1295	1267	1249	1216	1205	1184	1186	1123
25	675	705	713	733	735	751	738	743	726	722	700	690	670	667	642	632	614	610	553
30	174	195	207	228	236	262	252	268	251	247	233	223	206	195	177	166	151	145	115
35	35.3	37.7	39.2	42.0	43.4	46.0	46.8	48.3	46.9	46.3	43.4	41.7	38.5	37.0	35.0	33.6	32.1	31.3	28.4
40	17.3	17.8	18.1	18.6	18.8	19.2	19.2	19.4	19.0	18.8	18.1	17.8	17.2	16.8	16.3	16.0	15.4	15.2	14.5
45	8.92	9.23	9.39	9.66	9.73	9.98	10.00	10.1	9.89	9.77	9.42	9.25	8.95	8.77	8.46	8.26	7.97	7.82	7.44
50	4.50	4.69	4.73	4.87	4.87	5.02	5.03	5.14	5.00	4.94	4.71	4.65	4.49	4.44	4.27	4.16	3.99	3.93	3.77
55	2.33	2.39	2.44	2.48	2.51	2.56	2.60	2.64	2.59	2.52	2.42	2.38	2.32	2.27	2.20	2.11	2.04	1.98	1.89
60	1.06	1.07	1.13	1.13	1.16	1.17	1.23	1.23	1.22	1.15	1.15	1.10	1.09	1.04	1.04	0.97	0.94	0.88	0.83
65	0.28	0.27	0.32	0.30	0.34	0.32	0.37	0.34	0.38	0.34	0.36	0.31	0.33	0.27	0.29	0.24	0.25	0.20	0.13
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	0.00	0.00
130	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	0.06
135	0.10	0.14	0.08	0.13	0.08	0.12	0.07	0.11	0.07	0.11	0.07	0.12	0.08	0.14	0.10	0.15	0.12	0.17	0.28
140	0.50	0.52	0.48	0.51	0.46	0.49	0.45	0.50	0.46	0.49	0.47	0.51	0.48	0.53	0.51	0.56	0.54	0.60	0.74
145	1.26	1.27	1.22	1.23	1.21	1.23	1.20	1.22	1.21	1.24	1.22	1.27	1.26	1.31	1.30	1.35	1.35	1.40	1.57
150	2.56	2.54	2.51	2.50	2.48	2.48	2.48	2.48	2.49	2.50	2.53	2.55	2.57	2.60	2.63	2.66	2.70	2.73	2.91
155	4.39	4.34	4.32	4.28	4.28	4.26	4.26	4.26	4.29	4.30	4.33	4.34	4.39	4.41	4.46	4.48	4.54	4.54	4.71
160	6.40	6.36	6.33	6.28	6.26	6.24	6.24	6.24	6.26	6.28	6.31	6.31	6.35	6.37	6.41	6.43	6.48	6.49	6.60
165	8.11	8.10	8.03	8.01	7.96	7.94	7.92	7.93	7.91	7.93	7.93	7.96	7.96	7.99	8.01	8.05	8.07	8.10	8.20
170	9.19	9.19	9.10	9.09	9.00	9.01	8.94	8.97	8.92	8.97	8.93	8.96	8.93	8.97	8.94	9.01	8.98	9.09	9.19
175	9.70	9.72	9.62	9.61	9.51	9.51	9.43	9.48	9.41	9.46	9.40	9.43	9.38	9.42	9.36	9.42	9.42	9.53	9.71
180	9.96	9.96	9.86	9.84	9.75	9.75	9.70	9.70	9.66	9.66	9.64	9.64	9.60	9.60	9.58	9.60	9.64	9.72	9.98

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: 0
Test Date: 2022-04-21

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity: 65.0%
Test Distance: 7.100m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: Halo-D18-3000K-RA90-18W-20D.	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.: 0	SUR.:	PROTECTION ANGLE:

Table--2

UNIT: cd

C(°)	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350		
γ (°)	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	7638	7628	7609	7603	7587	7584	7572	7573	7561	7562	7556	7558	7556	7558	7558	7561	7564		
5	6268	6271	6214	6235	6203	6237	6214	6255	6239	6292	6287	6346	6343	6406	6407	6466	6468		
10	3997	4017	3965	4000	3969	4024	4002	4058	4039	4095	4073	4137	4125	4189	4183	4245	4228		
15	2121	2143	2107	2140	2110	2153	2137	2183	2170	2218	2195	2244	2229	2282	2270	2322	2306		
20	1098	1102	1084	1091	1076	1090	1079	1099	1091	1116	1112	1136	1135	1163	1163	1195	1197		
25	527	519	496	495	478	483	469	479	472	485	483	501	502	528	537	567	577		
30	115	104	97.3	97.2	92.9	93.6	90.8	91.6	89.1	90.4	89.5	93.4	94.0	101	115	115	133		
35	27.3	27.0	26.3	26.4	25.9	26.1	25.8	26.0	25.7	26.0	25.8	26.3	26.5	27.3	27.6	28.7	29.4		
40	14.0	13.8	13.4	13.4	13.2	13.3	13.2	13.3	13.1	13.3	13.2	13.6	13.7	14.1	14.3	14.8	15.1		
45	7.19	7.07	6.87	6.82	6.71	6.79	6.75	6.79	6.70	6.74	6.73	6.89	7.01	7.22	7.33	7.54	7.71		
50	3.64	3.59	3.47	3.45	3.41	3.46	3.45	3.46	3.40	3.41	3.43	3.52	3.58	3.68	3.74	3.85	3.91		
55	1.86	1.81	1.76	1.72	1.72	1.73	1.76	1.74	1.72	1.71	1.74	1.77	1.83	1.88	1.94	1.95	2.00		
60	0.84	0.78	0.78	0.72	0.75	0.72	0.77	0.73	0.75	0.72	0.76	0.76	0.82	0.81	0.86	0.84	0.89		
65	0.15	0.10	0.12	0.07	0.10	0.07	0.11	0.08	0.12	0.08	0.14	0.11	0.16	0.14	0.18	0.14	0.19		
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	0.00	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		
130	0.02	0.07	0.03	0.08	0.04	0.08	0.04	0.09	0.03	0.07	0.03	0.06	0.01	0.06	0.00	0.04	0.00		
135	0.25	0.31	0.27	0.33	0.28	0.33	0.29	0.33	0.27	0.31	0.25	0.29	0.23	0.26	0.22	0.25	0.19		
140	0.72	0.78	0.76	0.80	0.77	0.81	0.77	0.80	0.75	0.77	0.72	0.73	0.68	0.70	0.64	0.66	0.61		
145	1.57	1.62	1.62	1.65	1.64	1.65	1.64	1.63	1.59	1.59	1.54	1.53	1.48	1.47	1.42	1.41	1.38		
150	2.94	2.96	2.98	3.00	3.00	2.99	2.98	2.96	2.93	2.89	2.86	2.82	2.77	2.73	2.70	2.67	2.64		
155	4.72	4.74	4.77	4.77	4.77	4.76	4.75	4.71	4.69	4.63	4.61	4.55	4.51	4.45	4.43	4.38	4.37		
160	6.59	6.61	6.60	6.61	6.59	6.59	6.56	6.54	6.51	6.46	6.42	6.37	6.35	6.30	6.27	6.25	6.22		
165	8.13	8.14	8.10	8.12	8.09	8.09	8.04	8.05	8.01	7.99	7.94	7.93	7.88	7.88	7.84	7.83	7.81		
170	9.10	9.10	9.01	9.05	8.98	9.02	8.96	8.99	8.92	8.93	8.86	8.89	8.84	8.86	8.82	8.86	8.82		
175	9.63	9.60	9.48	9.51	9.44	9.48	9.41	9.44	9.37	9.40	9.33	9.37	9.31	9.35	9.31	9.39	9.38		
180	9.93	9.91	9.80	9.80	9.71	9.72	9.67	9.67	9.64	9.65	9.61	9.62	9.59	9.59	9.59	9.64	9.72		

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: 0
Test Date: 2022-04-21

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.262
Humidity: 65.0%
Test Distance: 7.100m [K=1.0000]
Remarks: