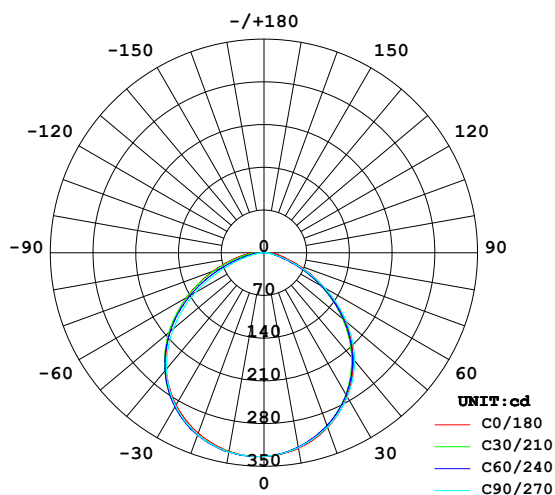


LUMINAIRE PHOTOMETRIC TEST REPORT

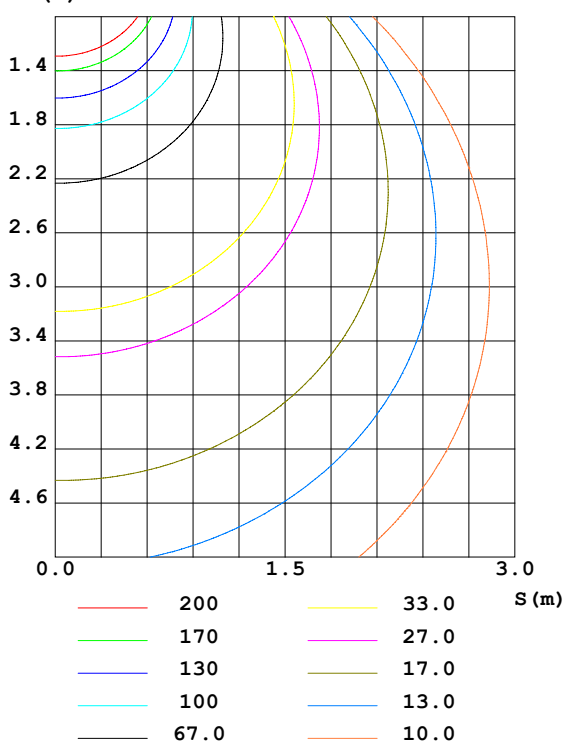
NAME: X-Glo-UL-60	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 98.14 lm/W			
MODEL	5050	I _{max} (cd)	334.3	S/MH (C0/180)	1.28
NOMINAL POWER (W)	9	LOR (%)	88.3	S/MH (C90/270)	1.28
RATED VOLTAGE (V)	36	TOTAL FLUX (lm)	883.24	η UP, DN (C0-180)	0.0, 45.5
NOMINAL FLUX (lm)	1000	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 42.8
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	36	η down (%)	88.3	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 28.5DEG
Operators:
Test Date:

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V1.0.257
Humidity: 56%
Test Distance: 6.810m [K=0.8223]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	$\%lum, lamp$
5	333.5	334.1	333.9	332.6	331.3	330.1	330.5	331.8	0- 5	7.960	7.960	0.90,0.80
10	330.2	331.6	331.7	328.7	325.5	323.2	324.4	326.9	5- 10	23.60	31.56	3.57,3.16
15	323.8	326.5	325.9	322.0	316.6	313.4	314.9	319.4	10- 15	38.43	70.00	7.92,7
20	314.6	317.9	317.6	312.3	304.8	301.1	304.0	308.6	15- 20	51.94	121.9	13.8,12.2
25	302.7	306.4	305.3	299.3	290.0	286.0	289.7	295.6	20- 25	63.65	185.6	21,18.6
30	287.7	291.8	290.2	283.3	272.2	268.1	273.1	279.8	25- 30	73.09	258.7	29.3,25.9
35	270.1	274.0	270.9	264.1	251.1	247.5	253.2	261.4	30- 35	79.86	338.5	38.3,33.9
40	249.7	253.4	248.5	241.5	227.7	224.0	231.0	240.5	35- 40	83.58	422.1	47.8,42.2
45	226.4	229.2	222.4	215.4	201.5	197.6	205.1	216.6	40- 45	83.99	506.1	57.3,50.6
50	200.8	203.1	193.9	185.9	173.4	168.5	176.8	190.8	45- 50	80.99	587.1	66.5,58.7
55	173.7	173.8	162.4	154.6	144.0	138.4	146.0	162.4	50- 55	74.67	661.8	74.9,66.2
60	145.6	143.4	129.1	122.2	114.5	107.4	114.5	133.6	55- 60	65.42	727.2	82.3,72.7
65	117.4	112.1	94.43	90.84	85.90	77.54	83.19	105.0	60- 65	53.89	781.1	88.4,78.1
70	89.88	81.69	61.76	61.29	60.37	50.86	53.74	78.50	65- 70	41.13	822.2	93.1,82.2
75	64.81	54.05	35.54	37.78	40.61	29.00	30.84	56.73	70- 75	28.55	850.7	96.3,85.1
80	44.13	33.49	14.95	22.01	26.46	16.27	13.75	40.15	75- 80	18.06	868.8	98.4,86.9
85	29.07	19.21	2.819	13.07	16.35	11.45	3.365	26.22	80- 85	10.94	879.7	99.6,88
90	19.56	0	0	0	10.79	0	0	0	85- 90	3.502	883.2	100,88.3
95									90- 95			
100									95-100			
105									100-105			
110									105-110			
115									110-115			
120									115-120			
125									120-125			
130									125-130			
135									130-135			
140									135-140			
145									140-145			
150									145-150			
155									150-155			
160									155-160			
165									160-165			
170									165-170			
175									170-175			
180									175-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

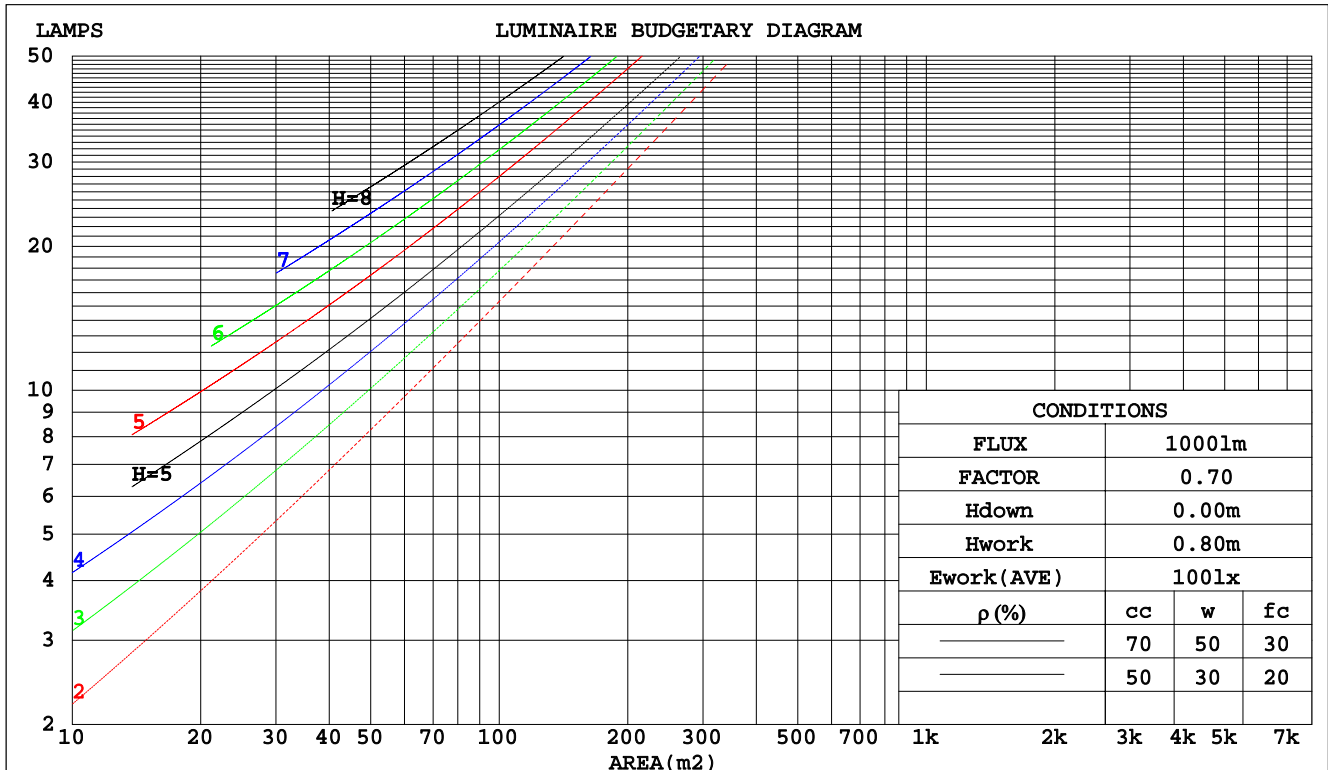
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:28.5DEG
Operators:
Test Date:

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V1.0.257
Humidity:56%
Test Distance:6.810m [K=0.8223]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

NAME: HALO-UL-60	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Coefficients of Utilization(CU)									
0.0	1.05	1.05	1.05	1.03	1.03	1.03	.98	.98	.98	.94	.94	.94	.90	.90	.90	.88
1.0	.92	.89	.86	.90	.87	.84	.87	.84	.82	.83	.81	.79	.80	.78	.77	.75
2.0	.81	.75	.70	.79	.74	.70	.76	.72	.68	.73	.70	.66	.71	.68	.65	.63
3.0	.72	.65	.59	.70	.64	.58	.68	.62	.57	.65	.60	.56	.63	.59	.56	.54
4.0	.64	.56	.50	.62	.55	.50	.60	.54	.49	.58	.53	.49	.56	.52	.48	.46
5.0	.57	.49	.43	.56	.49	.43	.54	.48	.43	.52	.47	.42	.51	.46	.42	.40
6.0	.51	.44	.38	.51	.43	.38	.49	.42	.38	.47	.42	.37	.46	.41	.37	.35
7.0	.47	.39	.34	.46	.39	.34	.45	.38	.33	.43	.37	.33	.42	.37	.33	.31
8.0	.43	.35	.30	.42	.35	.30	.41	.34	.30	.40	.34	.30	.39	.33	.29	.28
9.0	.39	.32	.27	.39	.32	.27	.38	.31	.27	.37	.31	.27	.36	.30	.27	.25
10.0	.36	.29	.25	.36	.29	.25	.35	.29	.24	.34	.28	.24	.33	.28	.24	.23



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 28.5DEG
Operators:
Test Date:

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V1.0.257
Humidity: 56%
Test Distance: 6.810m [K=0.8223]
Remarks:

WEC AND CCEC

NAME: HALO-UL-60	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

pcc	80%	70%	50%	30%	10%	0
pw	50% 30% 10%	50% 30% 10%	50% 30% 10%	50% 30% 10%	50% 30% 10%	0
pfc	20%	20%	20%	20%	20%	0
RCR	RCR:Room Cavity Ratio Wall Exitance Coefficients(WEC)					
0.0						
1.0	.259 .147 .047	.253 .144 .046	.241 .139 .044	.231 .133 .043	.221 .128 .041	
2.0	.246 .135 .041	.240 .132 .041	.230 .128 .040	.221 .124 .039	.212 .120 .038	
3.0	.229 .122 .037	.224 .120 .036	.215 .117 .035	.207 .113 .035	.199 .110 .034	
4.0	.213 .111 .032	.208 .109 .032	.200 .106 .032	.193 .104 .031	.186 .101 .031	
5.0	.198 .101 .029	.194 .099 .029	.187 .097 .029	.180 .095 .028	.174 .093 .028	
6.0	.184 .092 .026	.181 .091 .026	.174 .089 .026	.168 .087 .026	.163 .086 .025	
7.0	.172 .085 .024	.169 .084 .024	.163 .082 .024	.158 .081 .024	.153 .079 .023	
8.0	.161 .079 .022	.158 .078 .022	.153 .076 .022	.148 .075 .022	.144 .074 .022	
9.0	.151 .073 .020	.149 .072 .020	.144 .071 .020	.140 .070 .020	.136 .069 .020	
10.0	.142 .068 .019	.140 .068 .019	.136 .067 .019	.132 .066 .019	.128 .065 .019	

pcc	80%	70%	50%	30%	10%	0
pw	50% 30% 10%	50% 30% 10%	50% 30% 10%	50% 30% 10%	50% 30% 10%	0
pfc	20%	20%	20%	20%	20%	0
RCR	RCR:Room Cavity Ratio Ceiling Cavity Exitance Coefficients(CCEC)					
0.0	.168 .168 .168	.144 .144 .144	.098 .098 .098	.056 .056 .056	.018 .018 .018	
1.0	.158 .138 .120	.135 .118 .103	.093 .082 .071	.053 .047 .041	.017 .015 .013	
2.0	.151 .117 .088	.129 .100 .076	.088 .069 .053	.051 .040 .031	.016 .013 .010	
3.0	.143 .101 .067	.123 .087 .058	.084 .060 .041	.049 .035 .024	.016 .011 .008	
4.0	.137 .089 .053	.117 .077 .046	.081 .054 .032	.047 .031 .019	.015 .010 .006	
5.0	.130 .080 .043	.112 .069 .037	.077 .048 .026	.045 .028 .016	.014 .009 .005	
6.0	.124 .072 .035	.107 .063 .031	.074 .044 .022	.043 .026 .013	.014 .008 .004	
7.0	.118 .066 .030	.102 .057 .026	.070 .040 .018	.041 .024 .011	.013 .008 .004	
8.0	.113 .061 .026	.097 .053 .022	.067 .037 .016	.039 .022 .009	.013 .007 .003	
9.0	.107 .057 .023	.092 .049 .020	.064 .035 .014	.037 .020 .008	.012 .007 .003	
10.0	.102 .053 .020	.088 .046 .018	.061 .032 .012	.036 .019 .007	.012 .006 .002	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 28.5DEG
Operators:
Test Date:

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V1.0.257
Humidity: 56%
Test Distance: 6.810m [K=0.8223]
Remarks:

Uncorrected UGR Table

NAME: HALO-UL-60						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	16.4	17.9	16.7	18.1	18.3	16.0	17.5	16.3	17.7	17.9					
3H	17.9	19.2	18.2	19.5	19.7	17.0	18.4	17.3	18.6	18.8					
4H	18.5	19.8	18.8	20.0	20.3	17.3	18.6	17.6	18.8	19.1					
6H	19.0	20.2	19.3	20.5	20.7	17.4	18.6	17.7	18.9	19.1					
8H	19.2	20.4	19.5	20.7	20.9	17.4	18.5	17.7	18.8	19.1					
12H	19.4	20.6	19.8	20.9	21.2	17.3	18.5	17.7	18.8	19.1					
4H 2H	16.9	18.2	17.2	18.5	18.7	16.6	17.9	16.9	18.2	18.4					
3H	18.6	19.7	18.9	20.0	20.3	17.8	18.9	18.2	19.2	19.5					
4H	19.3	20.3	19.7	20.7	21.0	18.2	19.2	18.6	19.5	19.9					
6H	20.0	20.9	20.4	21.2	21.6	18.4	19.3	18.8	19.6	20.0					
8H	20.3	21.1	20.7	21.5	21.9	18.4	19.3	18.8	19.6	20.0					
12H	20.6	21.4	21.0	21.8	22.2	18.4	19.2	18.8	19.6	20.0					
8H 4H	19.5	20.3	19.9	20.7	21.1	18.5	19.3	18.9	19.7	20.1					
6H	20.3	21.0	20.7	21.4	21.8	18.8	19.5	19.2	19.9	20.3					
8H	20.7	21.3	21.2	21.8	22.2	18.9	19.5	19.3	19.9	20.4					
12H	21.2	21.7	21.7	22.2	22.7	18.9	19.5	19.4	19.9	20.4					
12H 4H	19.5	20.2	19.9	20.6	21.0	18.5	19.3	18.9	19.7	20.1					
6H	20.3	21.0	20.8	21.4	21.8	18.9	19.5	19.4	19.9	20.4					
8H	20.8	21.3	21.3	21.8	22.3	19.0	19.6	19.5	20.0	20.5					
Variations with the observer position at spacings:															
S = 1.0H	+ 0.2 / - 0.2					+ 0.2 / - 0.3									
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.4									
2.0H	+ 0.2 / - 0.3					+ 0.3 / - 0.5									

CIE Pub.117 Corrected 1000 lm Total Lamp Luminous Flux.(8log(F/F0) = 0.0)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:28.5DEG
Operators:
Test Date:

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V1.0.257
Humidity:56%
Test Distance:6.810m [K=0.8223]
Remarks:

UTILIZATION FACTORS TABLE

NAME: HALO-UL-60	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

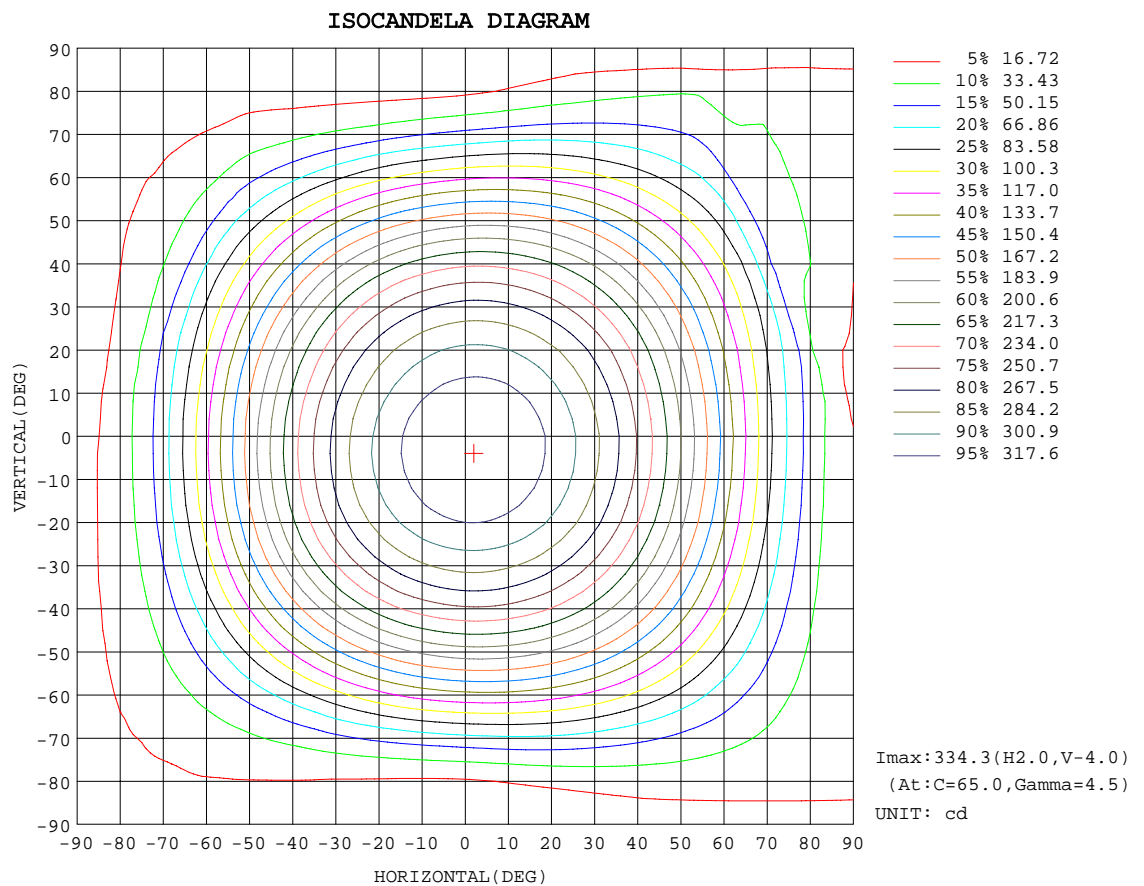
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	52	42	36	52	42	36	51	42	36	30
0.80	61	51	45	60	51	45	59	50	45	39
1.00	69	59	53	68	59	53	66	60	52	46
1.25	75	66	60	74	65	60	71	64	59	53
1.50	79	71	65	78	70	65	75	69	64	57
2.00	85	78	73	84	77	72	81	75	71	64
2.50	88	82	77	87	81	76	83	78	74	67
3.00	91	85	81	89	84	80	86	82	78	71
4.00	95	90	86	92	88	85	89	85	82	75
5.00	97	92	89	94	91	88	90	88	85	77
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004					Suspended			SHRNOM = 1.25		

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 28.5DEG
Operators:
Test Date:

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V1.0.257
Humidity: 56%
Test Distance: 6.810m [K=0.8223]
Remarks:

ISOCANDELA DIAGRAM

NAME: HALO-UL-60	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:



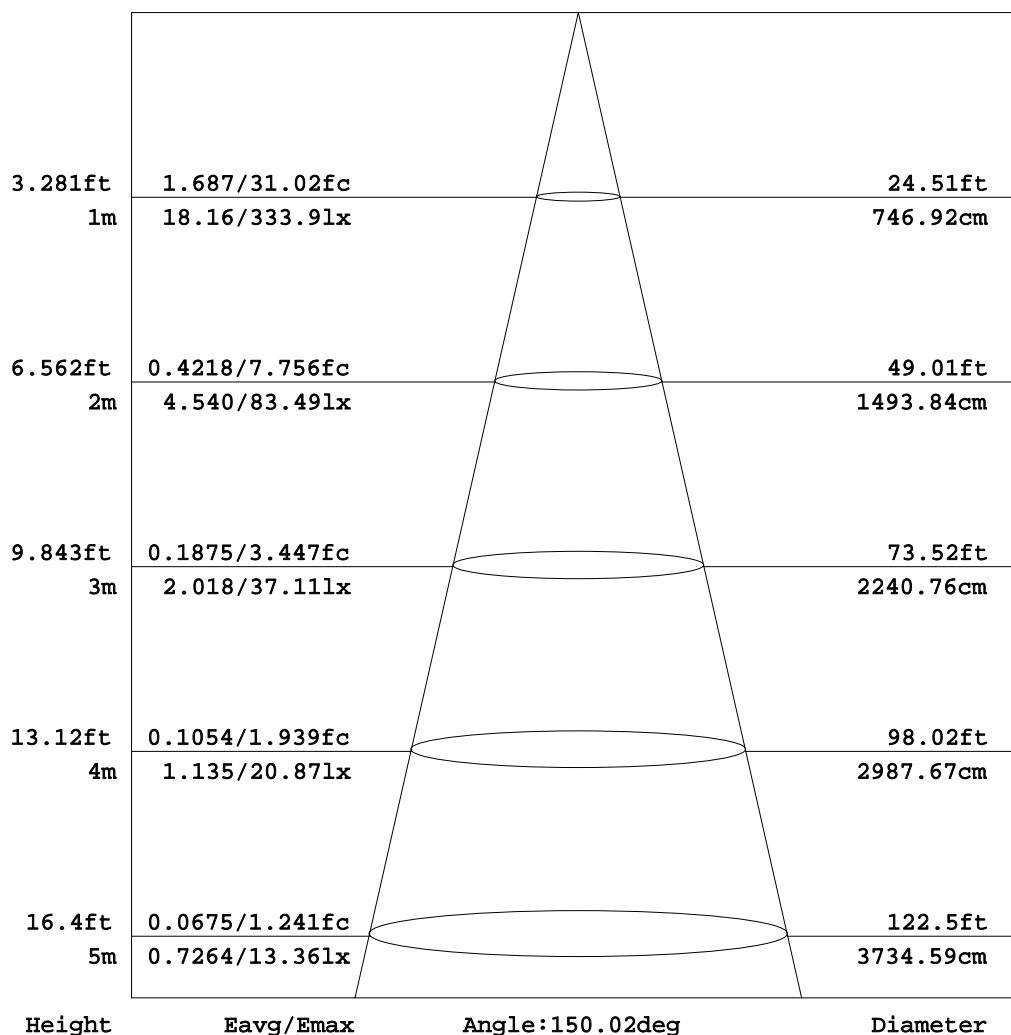
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 28.5DEG
Operators:
Test Date:

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V1.0.257
Humidity: 56%
Test Distance: 6.810m [K=0.8223]
Remarks:

AAI Figure

NAME: HALO-UL-60	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

Flux out:853.0 lm



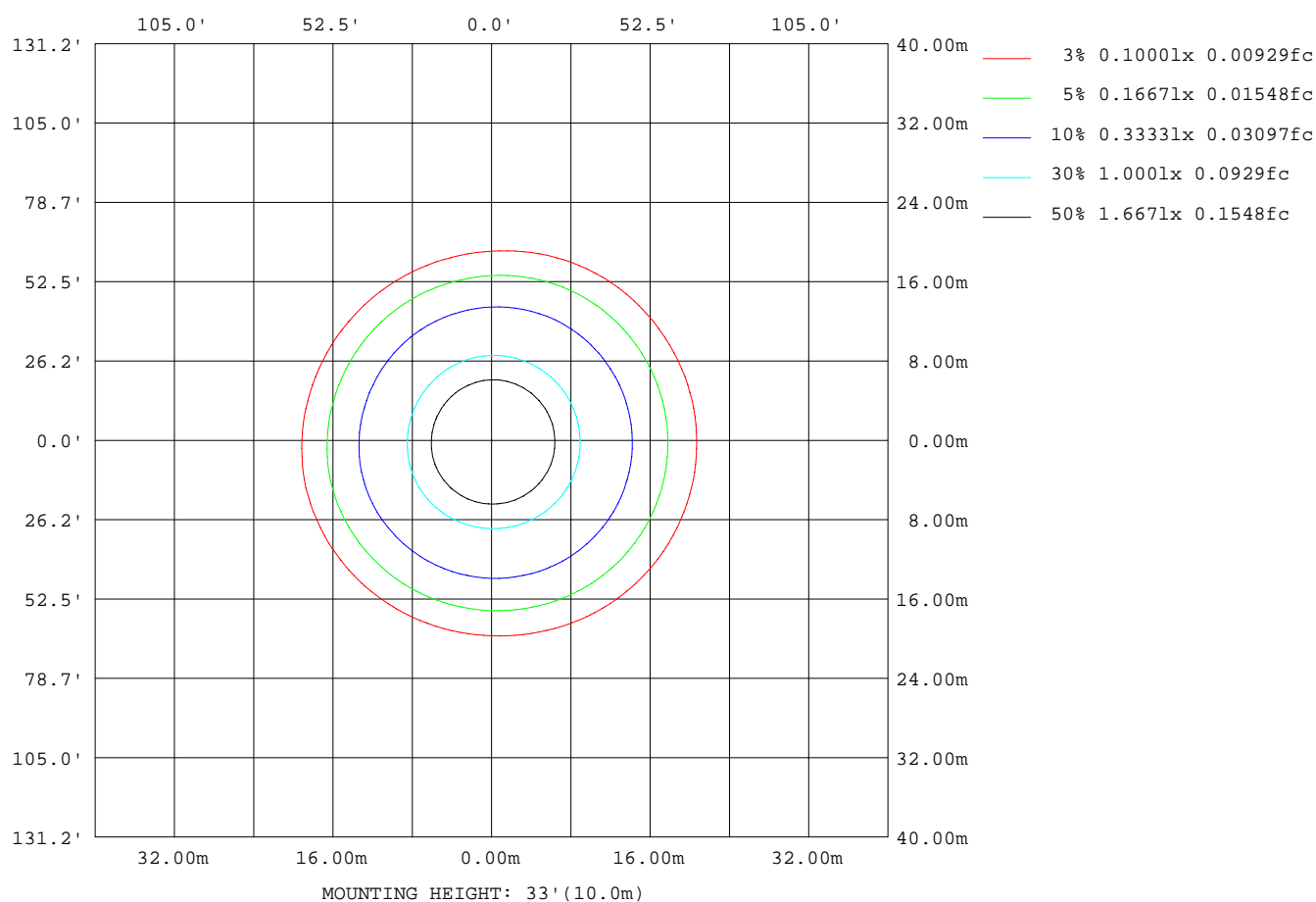
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:28.5DEG
Operators:
Test Date:

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V1.0.257
Humidity:56%
Test Distance:6.810m [K=0.8223]
Remarks:

ISOLUX DIAGRAM

NAME: HALO-UL-60	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 28.5DEG
Operators:
Test Date:

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V1.0.257
Humidity: 56%
Test Distance: 6.810m [K=0.8223]
Remarks:

Average Luminance Table (CIBSE)

NAME: HALO-UL-60	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	1000	lm
Multiplying factor	K	1	
Luminous area in horizontal plane used in calculations	A	0.12	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	2524	2536	2546	2548	2536	2512	2481	2439	2397	2359	2328	2303	2279	2254	2232	2211	2186	2140	2093
60	2427	2434	2442	2432	2405	2366	2316	2257	2200	2151	2117	2091	2069	2049	2029	2010	1988	1954	1909
65	2314	2323	2308	2281	2239	2178	2099	2008	1924	1862	1826	1809	1797	1789	1790	1780	1766	1741	1694
70	2190	2181	2158	2112	2038	1934	1827	1712	1595	1505	1467	1469	1480	1479	1504	1519	1518	1514	1471
75	2087	2071	2027	1946	1820	1673	1547	1395	1255	1144	1109	1113	1158	1192	1247	1295	1324	1321	1308
80	2118	2074	1994	1853	1694	1519	1316	1089	878	717	714	814	922	1023	1106	1191	1249	1272	1270
85	2780	2633	2476	2253	1994	1662	1185	697	407	270	329	533	880	1204	1307	1519	1588	1720	1563

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	2780	200	---	500
Category 2	65 to 90	2780	200	---	500
Category 3	75 to 90	2780	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: 5.0DEG
Test Speed: HIGH
Temperature:28.5DEG
Operators:
Test Date:

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V1.0.257
Humidity:56%
Test Distance:6.810m [K=0.8223]
Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V1.0.257
Humidity:56%
Test Distance:6.810m [K=0.8223]
Remarks:

```

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V1.0.257
Humidity:56%
Test Distance:6.810m [K=0.8223]
Remarks:

```

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V1.0.257
Humidity:56%
Test Distance:6.810m [K=0.8223]
Remarks:

```

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V1.0.257
Humidity:56%
Test Distance:6.810m [K=0.8223]
Remarks:

```