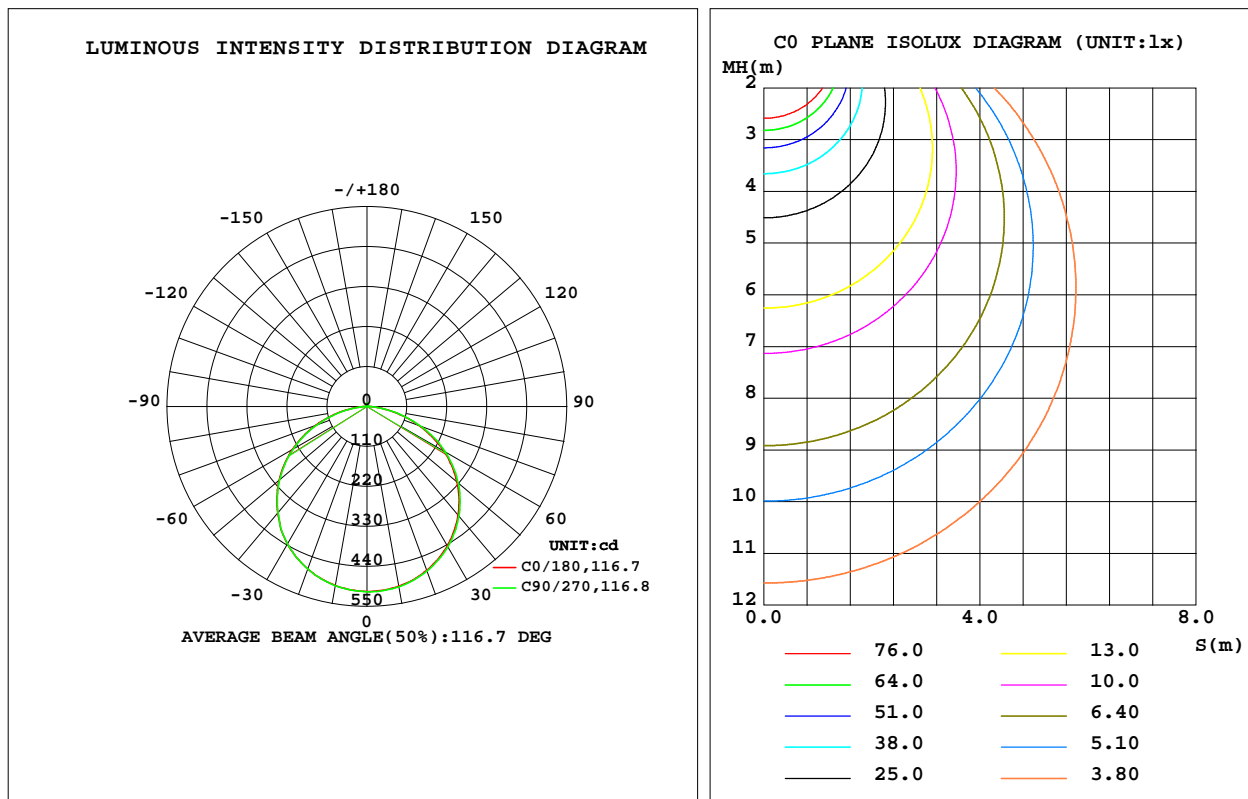


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:24.00V I:0.5204A P:12.49W PF:1.000 Freq:0Hz Lamp Flux:1543.9x1 lm		
NAME: D81602408NO	TYPE:	WEIGHT:
SPEC.:D81602408NO-HNWDA012WC0100	DIM.: 1000*8*1.6mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*8	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 123.62 lm/W			
MODEL	D81602408NO	I _{max} (cd)	510.3	S/MH(C0/180)	1.29
NOMINAL POWER(W)	13	LOR(%)	100.0	S/MH(C90/270)	1.28
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	1543.9	h UP,DN(C0-180)	0.9,50.0
NOMINAL FLUX(lm)	1543.9	CIE CLASS	DIRECT	h UP,DN(C180-360)	0.8,48.4
LAMPS INSIDE	1	h up(%)	1.6	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	24	h down(%)	98.4	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2020-12-04

g Range: 0 - 180DEG
Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.950m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

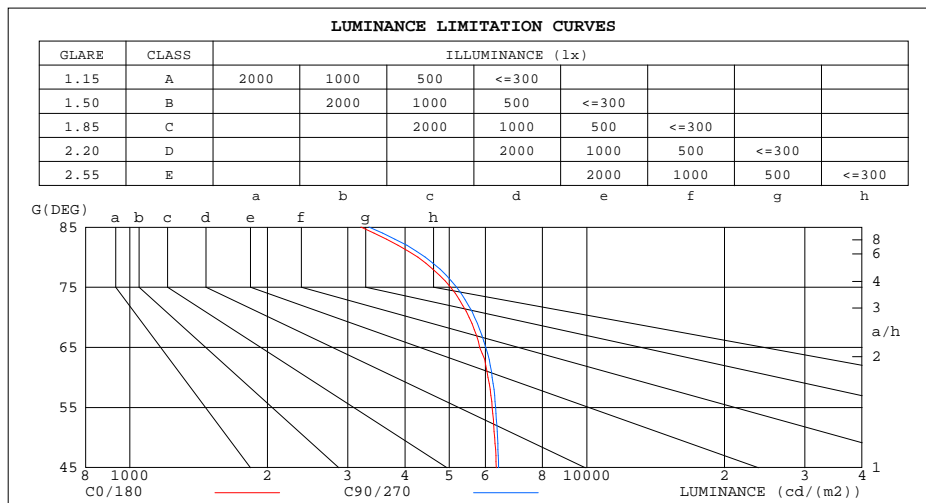
g	C0	C45	C90	C135	C180	C225	C270	C315	g	F zone	F total	%lum,lamp
10	502.1	504.1	504.1	503.5	500.1	500.1	500.5	501.6	0- 10	48.28	48.28	3.13,3.13
20	480.1	483.1	481.9	481.4	475.9	474.9	476.0	477.5	10- 20	139.0	187.3	12.1,12.1
30	442.5	446.8	445.5	444.2	437.3	435.4	437.0	438.5	20- 30	212.9	400.2	25.9,25.9
40	390.0	392.9	393.6	390.0	382.0	381.6	381.0	384.9	30- 40	260.3	660.5	42.8,42.8
50	323.2	327.2	327.8	324.5	315.9	314.3	314.0	317.0	40- 50	274.1	934.6	60.5,60.5
60	243.2	248.0	248.4	245.8	237.2	235.0	234.4	236.5	50- 60	252.1	1187	76.9,76.9
70	151.3	157.6	155.5	156.4	148.7	144.5	144.8	144.8	60- 70	194.3	1381	89.5,89.5
80	59.29	64.44	61.59	64.59	59.02	55.45	55.00	54.35	70- 80	109.7	1491	96.6,96.6
90	3.525	4.767	2.692	4.908	2.947	2.778	0.9943	2.527	80- 90	27.63	1518	98.4,98.4
100	1.830	1.957	1.777	1.939	1.370	1.347	1.317	1.359	90-100	1.802	1520	98.5,98.5
110	2.976	2.879	2.591	2.921	2.836	2.597	2.748	2.517	100-110	2.275	1523	98.6,98.6
120	4.333	4.183	3.987	4.189	4.112	3.627	3.761	3.842	110-120	3.359	1526	98.8,98.8
130	5.482	5.204	4.988	5.166	5.244	4.649	4.516	4.702	120-130	4.046	1530	99.1,99.1
140	6.318	5.912	5.778	5.966	6.139	5.637	5.125	5.230	130-140	4.174	1534	99.4,99.4
150	6.905	6.339	6.377	6.747	6.713	6.592	5.740	5.464	140-150	3.801	1538	99.6,99.6
160	7.467	6.727	7.254	7.568	7.328	7.419	7.029	6.058	150-160	3.096	1541	99.8,99.8
170	7.836	7.729	8.329	8.270	7.374	8.128	8.236	7.545	160-170	2.123	1543	99.9,99.9
180	7.788	9.071	9.184	9.204	7.748	9.064	9.204	9.244	170-180	0.7817	1544	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:JYH
 Test Date:2020-12-04

g Range: 0 - 180DEG
 g Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
 Humidity:65.0%
 Test Distance:10.950m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:24.00V I:0.5204A P:12.49W PF:1.000 Freq:0Hz Lamp Flux:1543.9x1 lm		
NAME: D81602408NO	TYPE:	WEIGHT:
SPEC.:D81602408NO-HNWDA012WC0100	DIM.: 1000*8*1.6mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*8	Shielding Angle:



LUMINANCE cd/(m2)		
G(180)	C0/180	C90/270
85	3204	3337
80	4268	4434
75	5036	5192
70	5530	5682
65	5832	6011
60	6081	6210
55	6210	6317
50	6286	6374
45	6340	6411

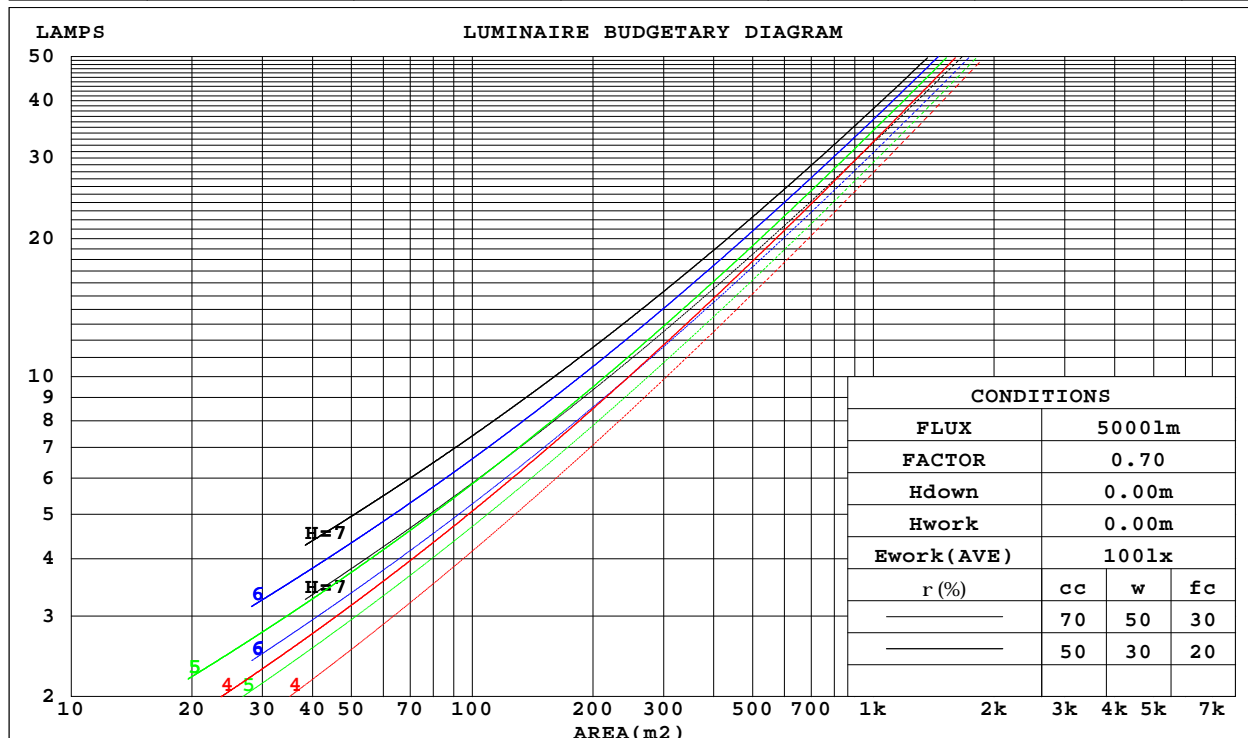
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2020-12-04

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.950m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:24.00V I:0.5204A P:12.49W PF:1.000 Freq:0Hz Lamp Flux:1543.9x1 lm		
NAME: D81602408NO	TYPE:	WEIGHT:
SPEC.:D81602408NO-HNWDA012WC0100	DIM.: 1000*8*1.6mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*8	Shielding Angle:

r _{cc}	80%			70%			50%			30%			10%			0
r _w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
r _{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio															



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2020-12-04

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.950m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:24.00V I:0.5204A P:12.49W PF:1.000 Freq:0Hz Lamp Flux:1543.9x1 lm		
NAME: D81602408NO	TYPE:	WEIGHT:
SPEC.:D81602408NO-HNWNDA012WC0100	DIM.: 1000*8*1.6mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*8	Shielding Angle:

rcc	80%			70%			50%			30%			10%			0
rw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
rfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio Wall Exitance Coefficients(WEC)															
0.0																
1.0	.311	.177	.056	.304	.173	.055	.290	.166	.053	.277	.160	.051	.265	.153	.049	
2.0	.294	.161	.049	.287	.158	.049	.274	.153	.047	.263	.147	.046	.252	.143	.045	
3.0	.272	.145	.043	.266	.142	.043	.255	.138	.042	.244	.134	.041	.235	.130	.040	
4.0	.251	.130	.038	.245	.128	.038	.235	.125	.037	.226	.121	.037	.218	.118	.036	
5.0	.232	.118	.034	.227	.117	.034	.218	.114	.033	.210	.111	.033	.202	.108	.032	
6.0	.215	.108	.031	.211	.106	.031	.203	.104	.030	.195	.101	.030	.188	.099	.029	
7.0	.200	.099	.028	.196	.098	.028	.189	.095	.028	.182	.093	.027	.176	.091	.027	
8.0	.186	.091	.026	.183	.090	.025	.177	.088	.025	.171	.086	.025	.165	.085	.025	
9.0	.175	.084	.024	.172	.084	.023	.166	.082	.023	.160	.080	.023	.155	.079	.023	
10.0	.164	.079	.022	.161	.078	.022	.156	.077	.022	.151	.075	.021	.147	.074	.021	

rcc	80%			70%			50%			30%			10%			0
rw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
rfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio Ceiling Cavity Exitance Coefficients(CCEC)															
0.0	.203	.203	.203	.174	.174	.174	.118	.118	.118	.068	.068	.068	.022	.022	.022	
1.0	.193	.169	.147	.165	.145	.126	.113	.100	.087	.065	.058	.051	.021	.019	.016	
2.0	.185	.145	.111	.159	.125	.096	.109	.086	.067	.063	.050	.039	.020	.016	.013	
3.0	.178	.127	.087	.152	.110	.075	.105	.076	.053	.060	.044	.031	.019	.014	.010	
4.0	.170	.114	.071	.146	.098	.062	.100	.069	.043	.058	.040	.026	.019	.013	.008	
5.0	.163	.104	.060	.140	.090	.052	.096	.063	.037	.056	.037	.022	.018	.012	.007	
6.0	.156	.095	.052	.134	.082	.045	.092	.058	.032	.054	.034	.019	.017	.011	.006	
7.0	.149	.088	.046	.128	.077	.040	.088	.054	.028	.051	.032	.017	.017	.010	.006	
8.0	.142	.083	.042	.122	.072	.036	.085	.050	.026	.049	.030	.015	.016	.010	.005	
9.0	.136	.078	.038	.117	.067	.033	.081	.047	.024	.047	.028	.014	.015	.009	.005	
10.0	.130	.073	.035	.112	.064	.031	.078	.045	.022	.046	.027	.013	.015	.009	.004	

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2020-12-04

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.950m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:24.00V I:0.5204A P:12.49W PF:1.000 Freq:0Hz Lamp Flux:1543.9x1 lm											
NAME: D81602408NO					TYPE:			WEIGHT:			
SPEC.:D81602408NO-HNWDA012WC0100					DIM.: 1000*8*1.6mm			SERIAL No.:			
MFR.: COLORS					SUR.:1000*8			Shielding 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	17.8	19.3	18.1	19.5	19.8	17.9	19.4	18.1	19.6	19.8	
	3H	19.3	20.7	19.6	21.0	21.3	19.4	20.8	19.7	21.1	21.4
	4H	19.9	21.2	20.2	21.5	21.8	20.0	21.4	20.4	21.6	21.9
	6H	20.3	21.5	20.7	21.8	22.2	20.4	21.7	20.8	22.0	22.3
	8H	20.4	21.6	20.8	21.9	22.2	20.5	21.7	20.9	22.0	22.4
	12H	20.4	21.6	20.8	21.9	22.3	20.6	21.7	21.0	22.1	22.4
4H	2H	18.4	19.8	18.8	20.0	20.3	18.5	19.8	18.8	20.1	20.4
	3H	20.1	21.3	20.5	21.6	22.0	20.2	21.4	20.6	21.7	22.1
	4H	20.9	21.9	21.3	22.3	22.6	21.0	22.0	21.4	22.4	22.7
	6H	21.4	22.3	21.8	22.7	23.1	21.5	22.4	21.9	22.8	23.2
	8H	21.5	22.4	21.9	22.8	23.2	21.6	22.5	22.1	22.9	23.3
	12H	21.6	22.4	22.0	22.8	23.2	21.7	22.5	22.2	22.9	23.4
8H	4H	21.1	22.0	21.6	22.4	22.8	21.2	22.1	21.7	22.5	22.9
	6H	21.8	22.5	22.2	22.9	23.4	21.9	22.6	22.3	23.0	23.5
	8H	22.0	22.6	22.5	23.1	23.6	22.1	22.7	22.6	23.2	23.7
	12H	22.1	22.7	22.6	23.2	23.7	22.3	22.8	22.8	23.3	23.8
12H	4H	21.1	21.9	21.6	22.4	22.8	21.2	22.0	21.7	22.4	22.9
	6H	21.8	22.5	22.3	22.9	23.4	21.9	22.6	22.4	23.0	23.5
	8H	22.1	22.6	22.6	23.1	23.6	22.2	22.7	22.7	23.2	23.7
Variations with the observer position at spacings:											
S = 1.0H	+ 0.1 / - 0.2				+ 0.1 / - 0.2						
1.5H	+ 0.2 / - 0.3				+ 0.2 / - 0.3						
2.0H	+ 0.2 / - 0.3				+ 0.2 / - 0.3						

CIE Pub.117, 1544 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 1.5)

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2020-12-04

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.950m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:24.00V I:0.5204A P:12.49W PF:1.000 Freq:0Hz Lamp Flux:1543.9x1 lm		
NAME: D81602408NO	TYPE:	WEIGHT:
SPEC.:D81602408NO-HNWDA012WC0100	DIM.: 1000*8*1.6mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*8	Shielding Angle:

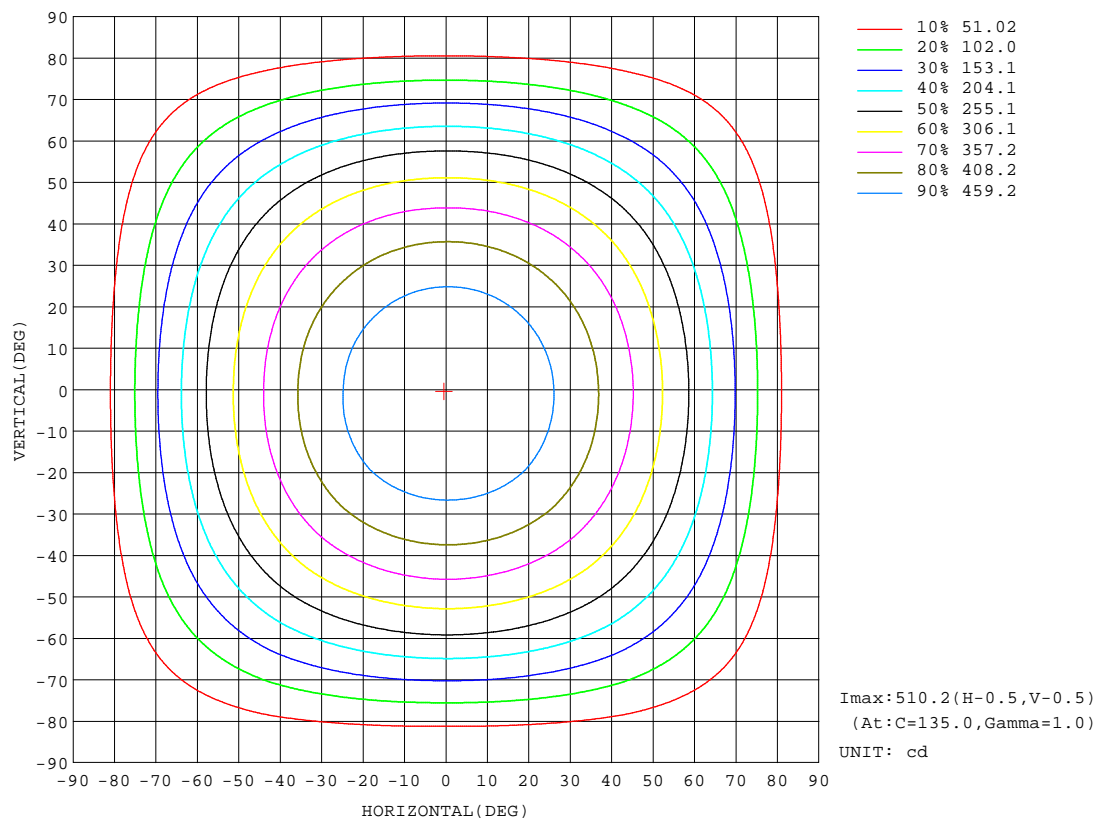
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	56	45	38	56	44	38	54	44	37	31
0.80	66	55	47	65	54	47	63	53	47	39
1.00	75	64	56	74	63	56	71	64	55	48
1.25	82	71	64	81	71	64	78	69	63	55
1.50	87	77	70	85	76	69	82	74	68	60
2.00	94	85	79	92	84	78	88	82	76	68
2.50	98	90	84	96	89	83	92	86	81	72
3.00	102	95	89	99	93	88	95	90	85	76
4.00	106	100	95	103	98	94	99	94	91	81
5.00	108	103	99	106	101	97	101	97	94	84
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2020-12-04

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.950m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:24.00V I:0.5204A P:12.49W PF:1.000 Freq:0Hz Lamp Flux:1543.9x1 lm		
NAME: D81602408NO	TYPE:	WEIGHT:
SPEC.:D81602408NO-HNWDA012WC0100	DIM.: 1000*8*1.6mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*8	Shielding Angle:



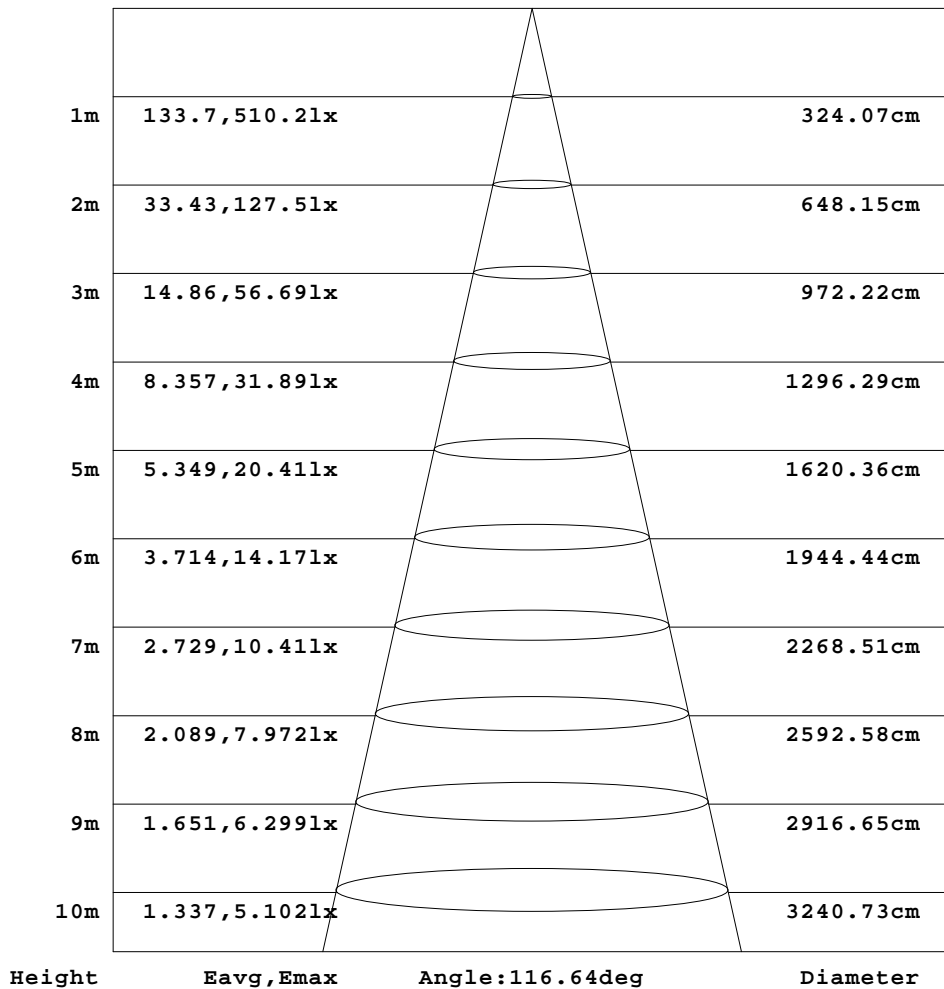
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2020-12-04

Range: 0 - 180DEG
Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.950m [K=1.0000]
Remarks:

AAI Figure

Test:U:24.00V I:0.5204A P:12.49W PF:1.000 Freq:0Hz Lamp Flux:1543.9x1 lm		
NAME: D81602408NO	TYPE:	WEIGHT:
SPEC.:D81602408NO-HNWDA012WC0100	DIM.: 1000*8*1.6mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*8	Shielding Angle:

Flux out:1164 lm



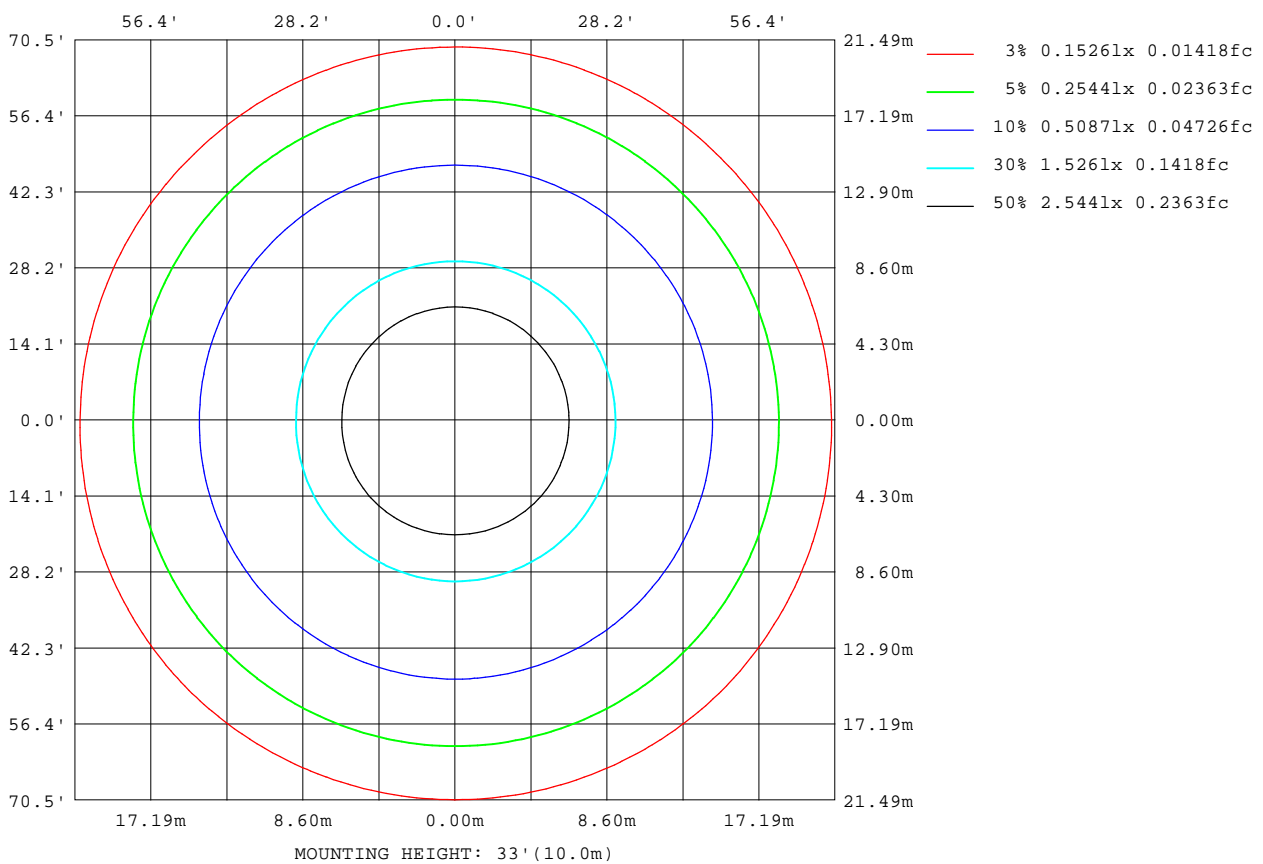
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2020-12-04

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.950m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

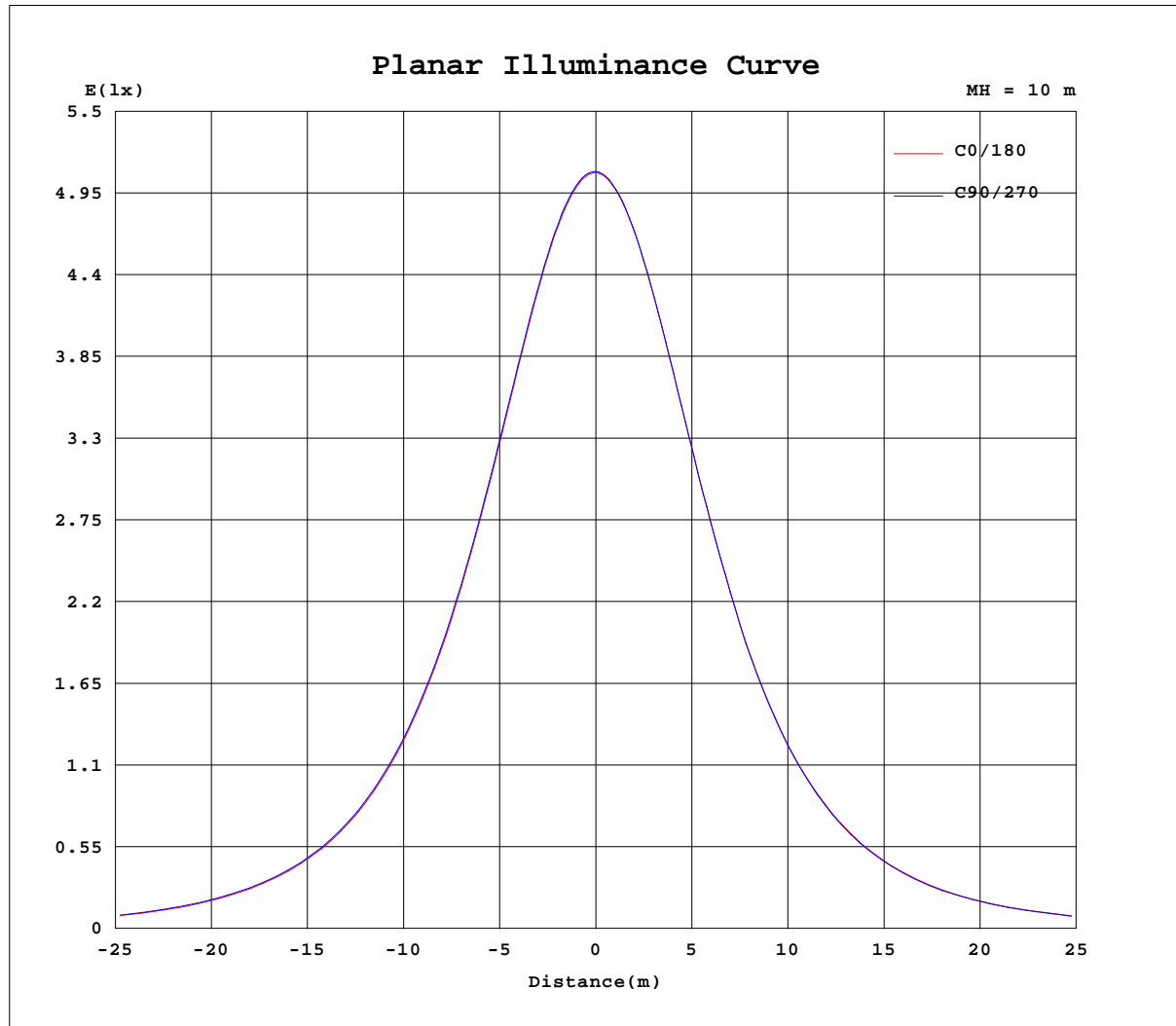
Test:U:24.00V I:0.5204A P:12.49W PF:1.000 Freq:0Hz Lamp Flux:1543.9x1 lm		
NAME: D81602408NO	TYPE:	WEIGHT:
SPEC.:D81602408NO-HNWDA012WC0100	DIM.: 1000*8*1.6mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*8	Shielding Angle:



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: JYH
 Test Date: 2020-12-04

g Range: 0 - 180DEG
 g Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.362
 Humidity: 65.0%
 Test Distance: 10.950m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: JYH
Test Date: 2020-12-04

Range: 0 - 180DEG
Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity: 65.0%
Test Distance: 10.950m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:24.00V I:0.5204A P:12.49W PF:1.000 Freq:0Hz Lamp Flux:1543.9x1 lm		
NAME: D81602408NO	TYPE:	WEIGHT:
SPEC.:D81602408NO-HNWDA012WC0100	DIM.: 1000*8*1.6mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*8	Shielding Angle:

Table--1

UNIT: cd

C(DEG) g (DEG)	0	45	90	135	180	225	270	315										
0	509	510	510	510	509	510	510	510										
5	507	509	508	509	506	507	507	508										
10	502	504	504	503	500	500	500	502										
15	493	496	495	494	490	489	490	492										
20	480	483	482	481	476	475	476	478										
25	463	467	465	465	458	457	458	460										
30	443	447	445	444	437	435	437	438										
35	418	423	421	420	413	410	412	414										
40	390	393	394	390	382	382	381	385										
45	359	362	363	359	350	350	349	353										
50	323	327	328	324	316	314	314	317										
55	285	289	290	287	278	276	276	278										
60	243	248	248	246	237	235	234	237										
65	197	204	203	202	194	190	190	191										
70	151	158	155	156	149	145	145	145										
75	104	110	107	110	103	98.8	98.7	98.4										
80	59.3	64.4	61.6	64.6	59.0	55.5	55.0	54.3										
85	22.3	25.7	23.3	26.5	22.4	20.3	19.8	19.0										
90	3.53	4.77	2.69	4.91	2.95	2.78	0.99	2.53										
95	1.76	1.99	1.86	2.00	1.01	1.08	0.71	1.19										
100	1.83	1.96	1.78	1.94	1.37	1.35	1.32	1.36										
105	2.33	2.31	1.98	2.35	2.10	1.97	2.11	1.98										
110	2.98	2.88	2.59	2.92	2.84	2.60	2.75	2.52										
115	3.67	3.56	3.30	3.58	3.47	3.13	3.29	3.18										
120	4.33	4.18	3.99	4.19	4.11	3.63	3.76	3.84										
125	4.94	4.73	4.51	4.70	4.70	4.12	4.15	4.35										
130	5.48	5.20	4.99	5.17	5.24	4.65	4.52	4.70										
135	5.96	5.60	5.42	5.59	5.72	5.13	4.84	5.00										
140	6.32	5.91	5.78	5.97	6.14	5.64	5.12	5.23										
145	6.60	6.15	6.08	6.35	6.49	6.12	5.36	5.34										
150	6.90	6.34	6.38	6.75	6.71	6.59	5.74	5.46										
155	7.16	6.51	6.70	7.17	7.03	7.02	6.33	5.65										
160	7.47	6.73	7.25	7.57	7.33	7.42	7.03	6.06										
165	7.80	7.10	7.85	7.90	7.55	7.77	7.64	6.70										
170	7.84	7.73	8.33	8.27	7.37	8.13	8.24	7.54										
175	7.54	8.40	8.82	8.73	7.23	8.53	8.78	8.41										
180	7.79	9.07	9.18	9.20	7.75	9.06	9.20	9.24										

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2020-12-04

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.362
Humidity:65.0%
Test Distance:10.950m [K=1.0000]
Remarks: