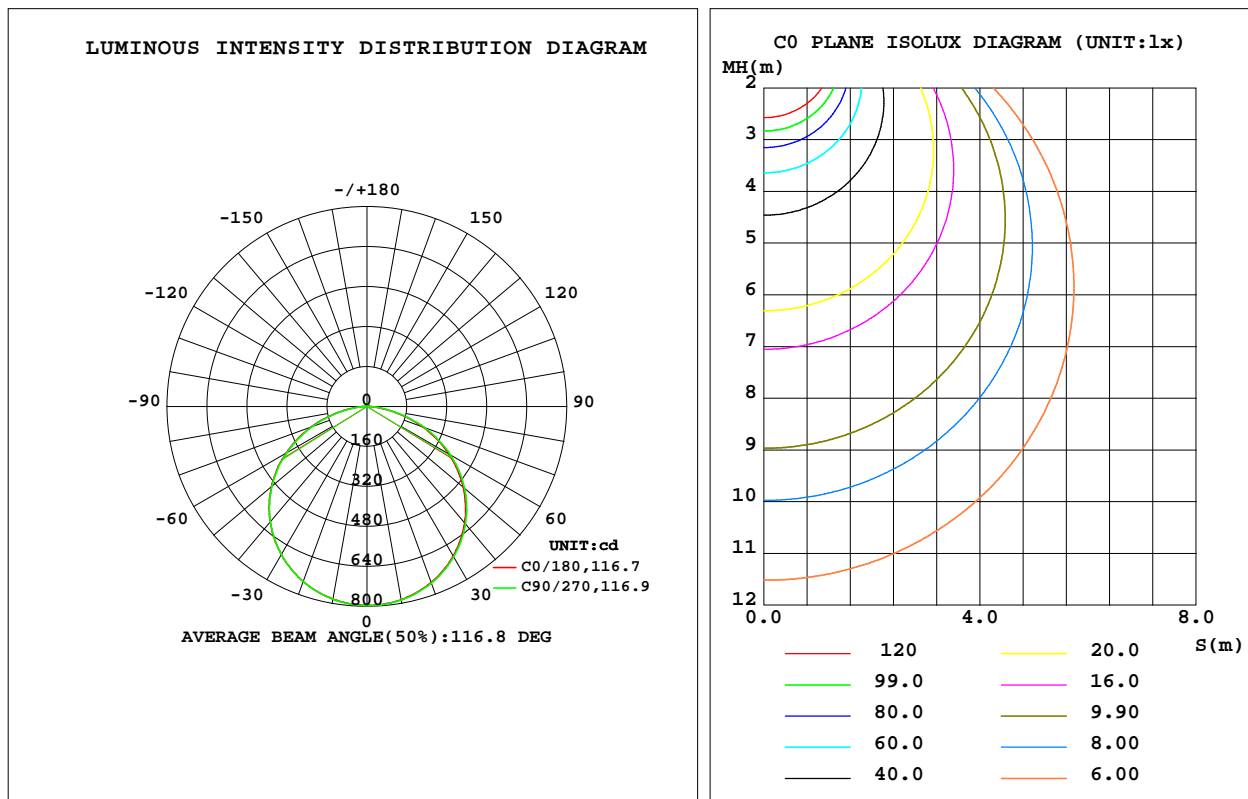


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:24.00V I:0.8220A P:19.70W PF:1.000 Freq:0Hz Lamp Flux:2418.82x1 lm		
NAME: D82402410NO	TYPE:	WEIGHT:
SPEC.:D82402410NO-HNWDA012WC0100	DIM.: 1000*10*1.6mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*10	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 122.78 lm/W			
MODEL	D2402410NO	I _{max} (cd)	798.0	S/MH(C0/180)	1.29
NOMINAL POWER(W)	20	LOR(%)	100.0	S/MH(C90/270)	1.28
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	2418.8	h UP,DN(C0-180)	0.9,49.7
NOMINAL FLUX(lm)	2418.82	CIE CLASS	DIRECT	h UP,DN(C180-360)	0.8,48.6
LAMPS INSIDE	1	h up(%)	1.7	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	24	h down(%)	98.3	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

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:

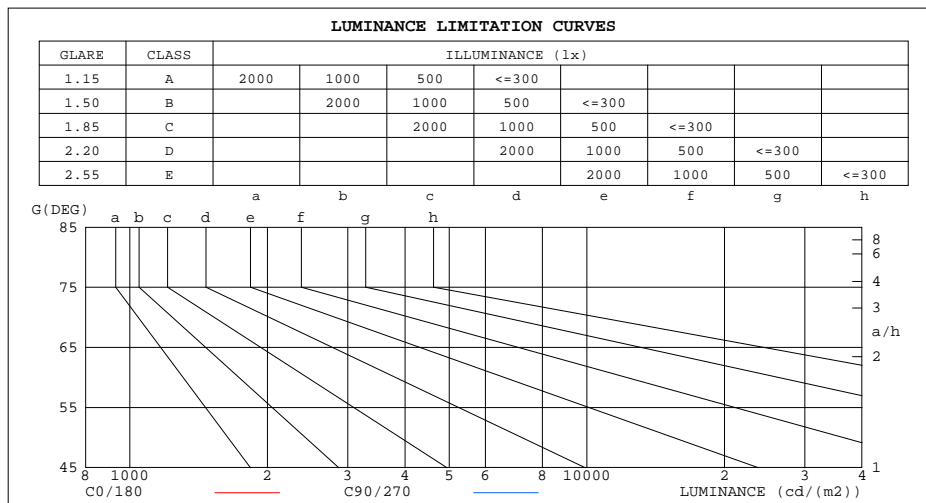
g	C0	C45	C90	C135	C180	C225	C270	C315	g	F zone	F total	%lum,lamp
10	785.1	787.9	786.6	787.0	782.7	782.5	783.3	784.9	0- 10	75.51	75.51	3.12,3.12
20	750.0	754.4	752.4	752.1	745.4	744.0	745.7	747.6	10- 20	217.4	292.9	12.1,12.1
30	690.8	696.6	694.5	693.6	685.1	682.4	684.8	686.5	20- 30	332.9	625.8	25.9,25.9
40	608.3	615.6	613.6	612.3	602.6	598.9	601.6	603.1	30- 40	407.3	1033	42.7,42.7
50	503.4	511.9	510.2	509.4	499.4	494.2	496.9	497.6	40- 50	430.0	1463	60.5,60.5
60	377.5	384.5	385.3	383.3	373.4	369.6	369.5	371.8	50- 60	395.3	1858	76.8,76.8
70	235.2	242.6	243.0	243.5	235.0	230.0	229.7	230.1	60- 70	304.4	2163	89.4,89.4
80	90.04	97.50	95.83	100.4	94.32	88.71	89.02	87.49	70- 80	172.0	2335	96.5,96.5
90	5.421	7.288	4.334	8.711	5.396	5.251	1.830	5.239	80- 90	43.92	2379	98.3,98.3
100	2.965	3.094	2.865	3.134	2.130	2.130	2.038	2.190	90-100	2.927	2382	98.5,98.5
110	4.756	4.563	4.134	4.601	4.383	4.012	4.253	3.931	100-110	3.597	2385	98.6,98.6
120	6.866	6.601	6.290	6.559	6.386	5.675	5.846	5.982	110-120	5.280	2391	98.8,98.8
130	8.692	8.211	7.853	8.078	8.152	7.263	7.081	7.405	120-130	6.348	2397	99.1,99.1
140	10.02	9.333	9.073	9.327	9.566	8.832	8.051	8.222	130-140	6.553	2403	99.4,99.4
150	10.89	9.960	9.918	10.58	10.45	10.34	9.048	8.682	140-150	5.973	2409	99.6,99.6
160	11.83	10.54	11.36	11.84	11.38	11.62	11.06	9.604	150-160	4.865	2414	99.8,99.8
170	12.32	12.09	13.08	12.94	11.50	12.72	12.88	11.91	160-170	3.330	2418	99.9,99.9
180	12.15	14.09	14.39	14.44	12.13	14.09	14.42	14.43	170-180	1.224	2419	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:0.8220A P:19.70W PF:1.000 Freq:0Hz Lamp Flux:2418.82x1 lm		
NAME: D82402410NO	TYPE:	WEIGHT:
SPEC.:D82402410NO-HNWDA012WC0100	DIM.: 1000*10*1.6mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*10	Shielding Angle:



LUMINANCE cd/(m2)		
G(180)	C0/180	C90/270
85	38082	42533
80	51851	55184
75	61871	64331
70	68778	71038
65	72860	74774
60	75510	77062
55	77243	78519
50	78323	79375
45	79023	79869

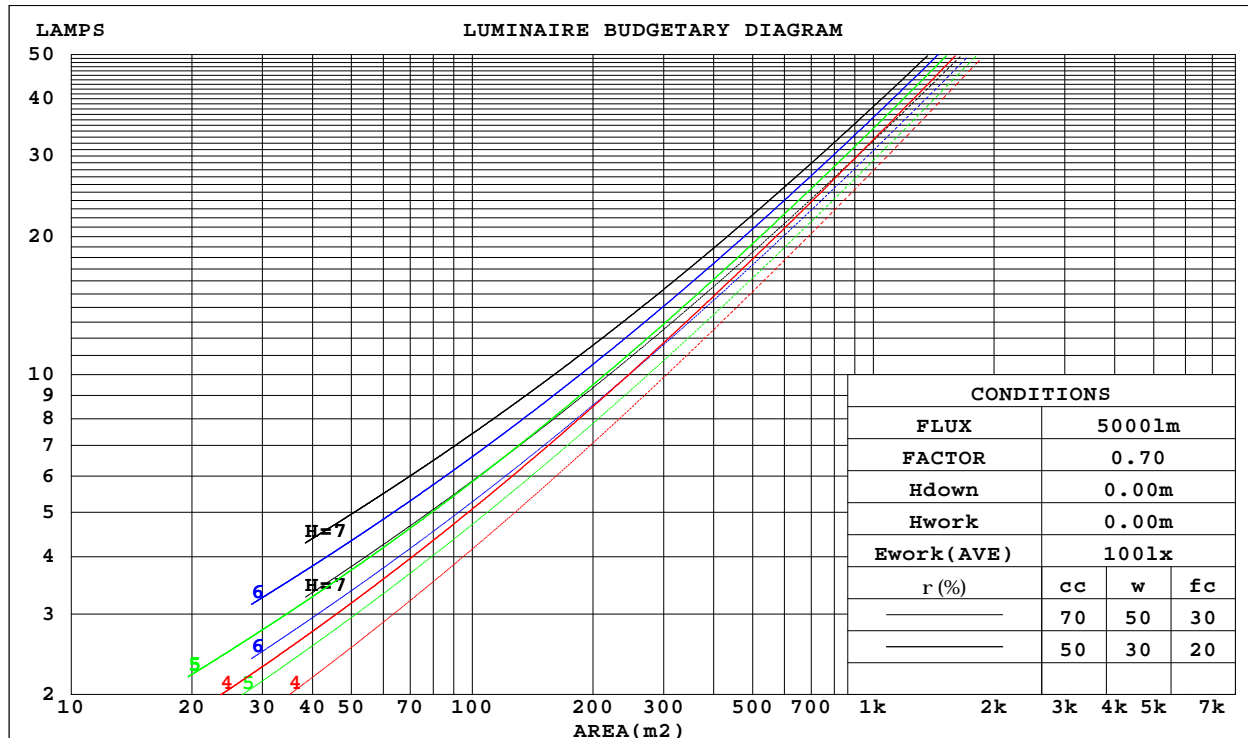
C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:JYH
 Test Date:2020-12-04

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:0.8220A P:19.70W PF:1.000 Freq:0Hz Lamp Flux:2418.82x1 lm		
NAME: D82402410NO	TYPE:	WEIGHT:
SPEC.:D82402410NO-HNWDA012WC0100	DIM.: 1000*10*1.6mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*10	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 Coefficients of Utilization(CU)															
0.0	1.19	1.19	1.19	1.16	1.16	1.16	1.10	1.10	1.10	1.05	1.05	1.05	1.01	1.01	1.01	.98
1.0	1.03	.99	.95	1.01	.97	.93	.96	.93	.90	.92	.90	.87	.88	.86	.84	.82
2.0	.90	.83	.77	.88	.81	.76	.84	.79	.74	.80	.76	.72	.77	.73	.70	.68
3.0	.79	.70	.64	.77	.69	.63	.74	.67	.62	.71	.65	.60	.68	.63	.59	.57
4.0	.70	.61	.54	.68	.60	.53	.65	.58	.52	.63	.57	.52	.60	.55	.51	.48
5.0	.62	.53	.46	.61	.52	.46	.58	.51	.45	.56	.50	.45	.54	.48	.44	.42
6.0	.56	.47	.40	.55	.46	.40	.53	.45	.39	.51	.44	.39	.49	.43	.38	.36
7.0	.50	.42	.35	.50	.41	.35	.48	.40	.35	.46	.39	.34	.45	.39	.34	.32
8.0	.46	.37	.31	.45	.37	.31	.44	.36	.31	.42	.36	.31	.41	.35	.30	.28
9.0	.42	.34	.28	.41	.34	.28	.40	.33	.28	.39	.32	.28	.38	.32	.27	.26
10.0	.39	.31	.26	.38	.31	.25	.37	.30	.25	.36	.30	.25	.35	.29	.25	.23



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:0.8220A P:19.70W PF:1.000 Freq:0Hz Lamp Flux:2418.82x1 lm		
NAME: D82402410NO	TYPE:	WEIGHT:
SPEC.:D82402410NO-HNWNDA012WC0100	DIM.: 1000*10*1.6mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*10	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	.312	.177	.056	.304	.174	.055	.290	.166	.053	.277	.160	.051	.265	.154	.050	
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	.246	.128	.038	.236	.125	.037	.226	.122	.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	.096	.028	.182	.093	.027	.176	.091	.027	
8.0	.187	.091	.026	.183	.090	.025	.177	.088	.025	.171	.087	.025	.165	.085	.025	
9.0	.175	.085	.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	.045	.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	.083	.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	.123	.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	.131	.073	.035	.113	.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:0.8220A P:19.70W PF:1.000 Freq:0Hz Lamp Flux:2418.82x1 lm											
NAME: D82402410NO					TYPE:			WEIGHT:			
SPEC.:D82402410NO-HNWDA012WC0100					DIM.: 1000*10*1.6mm			SERIAL No.:			
MFR.: COLORS					SUR.:1000*10			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	25.0	26.5	25.2	26.7	26.9	25.0	26.5	25.3	26.8	27.0	
	3H	26.5	27.9	26.8	28.1	28.4	26.6	28.0	26.9	28.3	28.5
	4H	27.1	28.4	27.4	28.7	29.0	27.2	28.5	27.5	28.8	29.1
	6H	27.4	28.7	27.8	29.0	29.3	27.6	28.8	27.9	29.1	29.5
	8H	27.5	28.7	27.9	29.0	29.4	27.7	28.9	28.1	29.2	29.5
	12H	27.6	28.7	27.9	29.0	29.4	27.7	28.9	28.1	29.2	29.6
4H	2H	25.6	26.9	25.9	27.2	27.5	25.6	27.0	26.0	27.3	27.6
	3H	27.3	28.5	27.7	28.8	29.1	27.4	28.6	27.8	28.9	29.2
	4H	28.0	29.1	28.4	29.4	29.8	28.1	29.2	28.5	29.5	29.9
	6H	28.5	29.4	28.9	29.8	30.2	28.6	29.6	29.0	29.9	30.3
	8H	28.6	29.5	29.1	29.9	30.3	28.8	29.7	29.2	30.1	30.5
	12H	28.7	29.5	29.1	29.9	30.4	28.9	29.7	29.3	30.1	30.5
8H	4H	28.3	29.1	28.7	29.5	30.0	28.4	29.2	28.8	29.6	30.1
	6H	28.9	29.6	29.4	30.1	30.5	29.0	29.7	29.5	30.2	30.6
	8H	29.1	29.7	29.6	30.2	30.7	29.2	29.9	29.7	30.3	30.8
	12H	29.2	29.8	29.7	30.3	30.8	29.4	29.9	29.9	30.4	30.9
12H	4H	28.3	29.1	28.7	29.5	29.9	28.4	29.2	28.8	29.6	30.0
	6H	28.9	29.6	29.4	30.0	30.5	29.1	29.7	29.5	30.2	30.6
	8H	29.2	29.7	29.7	30.2	30.7	29.3	29.9	29.8	30.4	30.9
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, 2419 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 3.1)

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:0.8220A P:19.70W PF:1.000 Freq:0Hz Lamp Flux:2418.82x1 lm		
NAME: D82402410NO	TYPE:	WEIGHT:
SPEC.:D82402410NO-HNWDA012WC0100	DIM.: 1000*10*1.6mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*10	Shielding Angle:

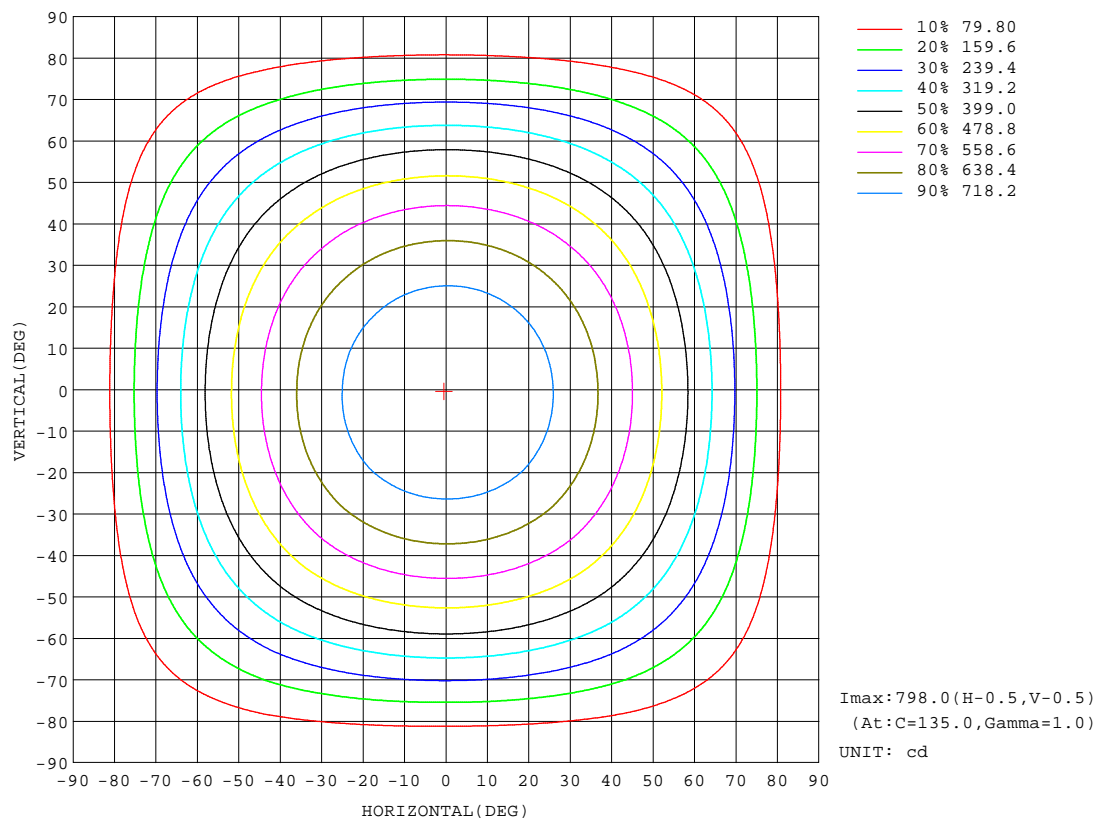
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	56	45	38	56	44	37	54	44	37	31
0.80	66	55	47	65	54	47	63	53	47	39
1.00	75	64	56	74	63	56	71	64	55	48
1.25	82	71	64	80	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	105	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:0.8220A P:19.70W PF:1.000 Freq:0Hz Lamp Flux:2418.82x1 lm		
NAME: D82402410NO	TYPE:	WEIGHT:
SPEC.:D82402410NO-HNWDA012WC0100	DIM.: 1000*10*1.6mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*10	Shielding Angle:



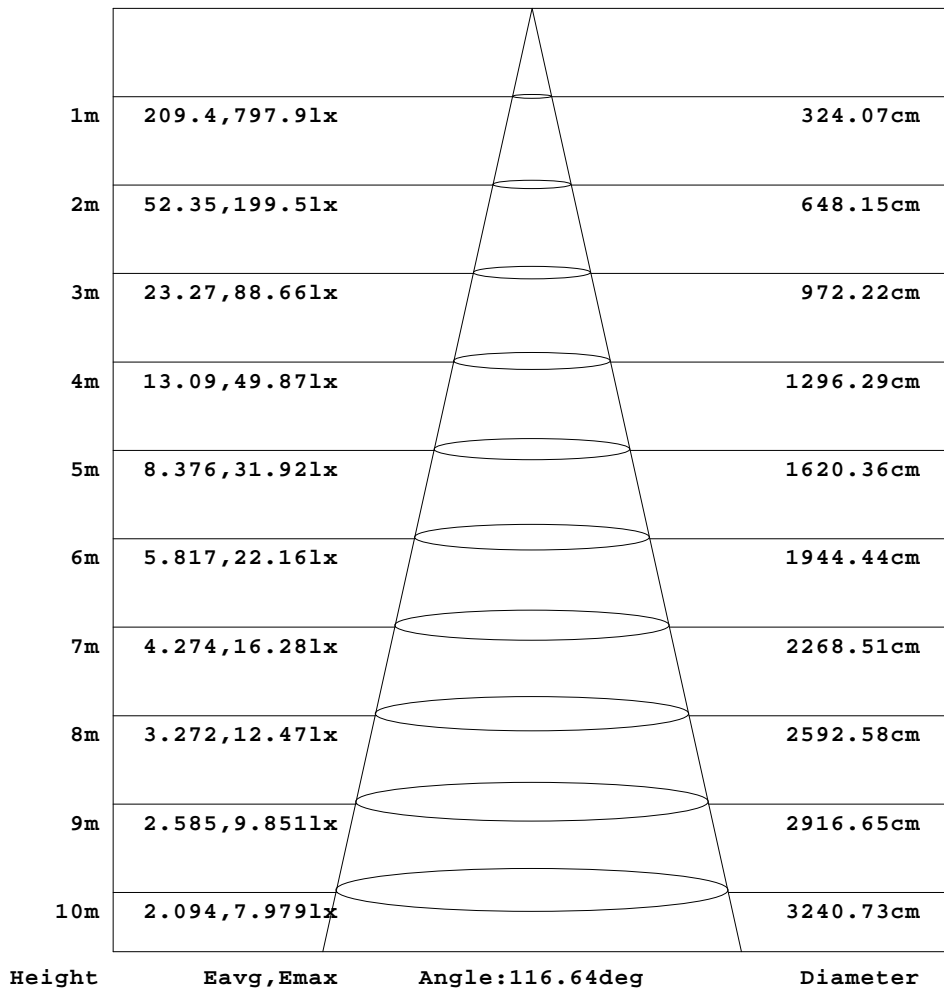
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2020-12-04

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:0.8220A P:19.70W PF:1.000 Freq:0Hz Lamp Flux:2418.82x1 lm		
NAME: D82402410NO	TYPE:	WEIGHT:
SPEC.:D82402410NO-HNWDA012WC0100	DIM.: 1000*10*1.6mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*10	Shielding Angle:

Flux out:1822 lm



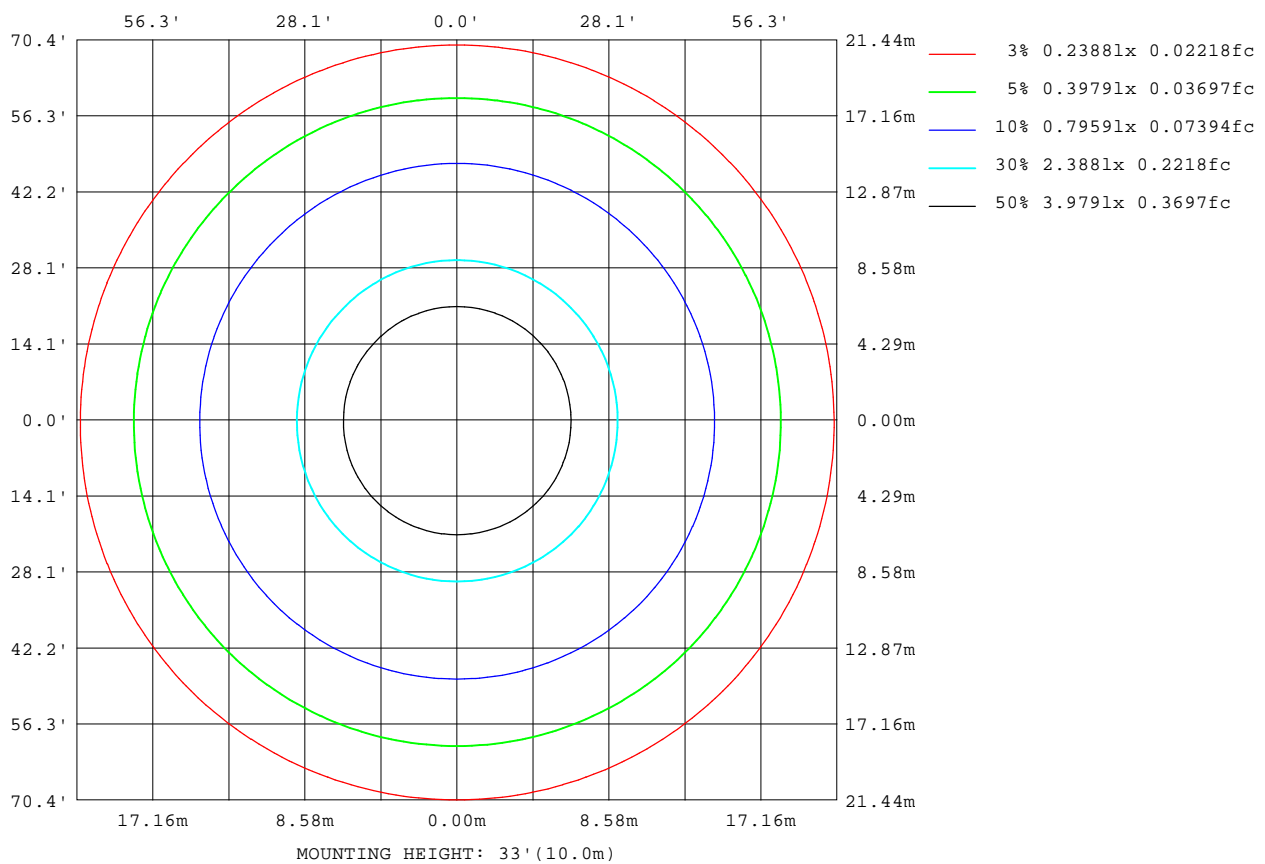
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

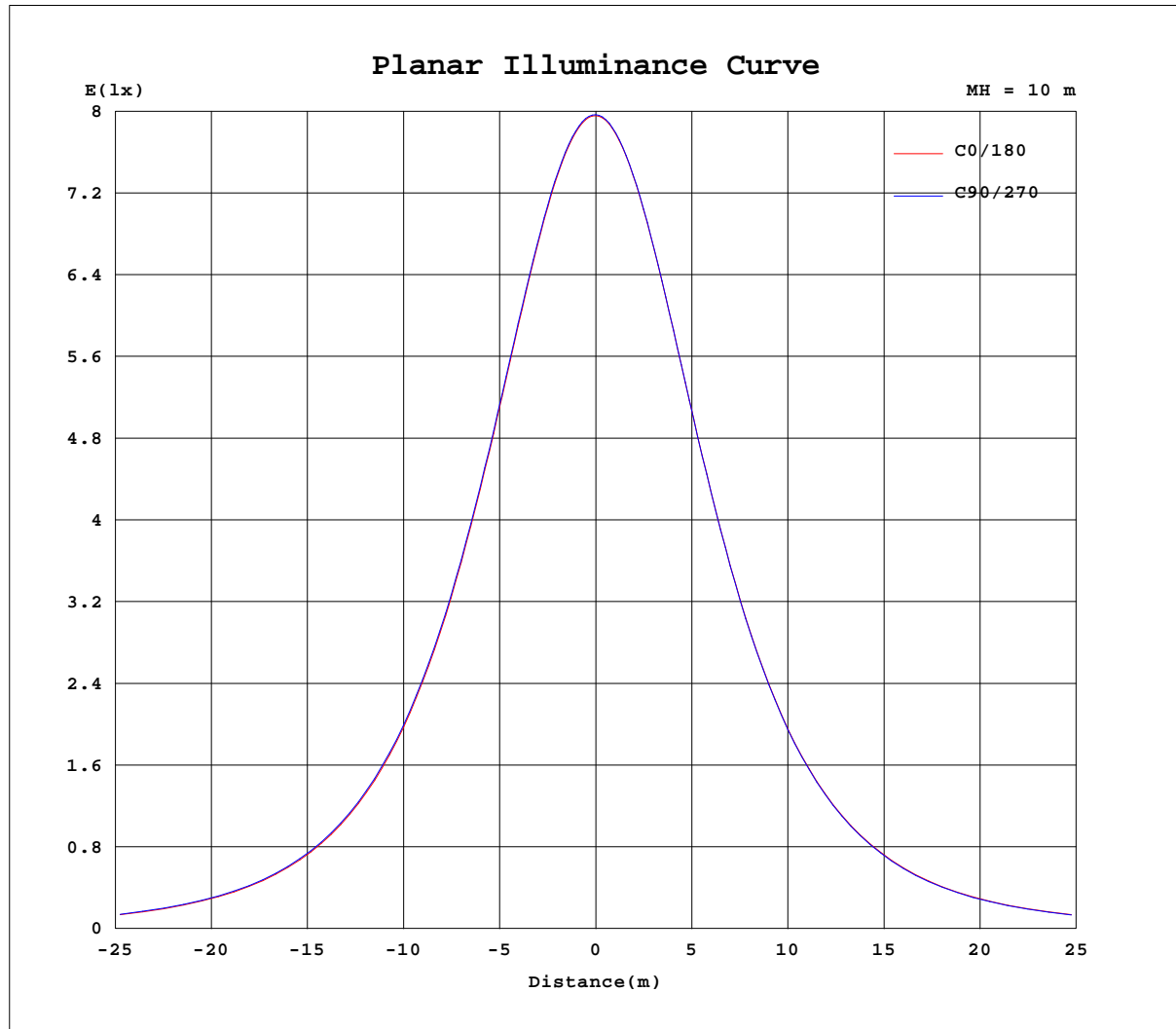
Test:U:24.00V I:0.8220A P:19.70W PF:1.000 Freq:0Hz Lamp Flux:2418.82x1 lm		
NAME: D82402410NO	TYPE:	WEIGHT:
SPEC.:D82402410NO-HNWDA012WC0100	DIM.: 1000*10*1.6mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*10	Shielding Angle:



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:0.8220A P:19.70W PF:1.000 Freq:0Hz Lamp Flux:2418.82x1 lm		
NAME: D82402410NO	TYPE:	WEIGHT:
SPEC.:D82402410NO-HNWDA012WC0100	DIM.: 1000*10*1.6mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*10	Shielding Angle:

Table--1

UNIT: cd

C(DEG) g (DEG)	0	45	90	135	180	225	270	315										
0	796	797	797	798	796	797	797	798										
5	794	796	795	795	792	793	793	794										
10	785	788	787	787	783	782	783	785										
15	770	774	772	772	767	766	767	769										
20	750	754	752	752	745	744	746	748										
25	723	729	727	726	718	716	718	720										
30	691	697	695	694	685	682	685	687										
35	653	659	657	656	647	643	646	648										
40	608	616	614	612	603	599	602	603										
45	559	567	565	564	553	549	552	553										
50	503	512	510	509	499	494	497	498										
55	443	452	450	450	440	434	437	437										
60	378	384	385	383	373	370	370	372										
65	308	315	316	315	306	301	301	303										
70	235	243	243	244	235	230	230	230										
75	160	169	167	171	163	157	157	156										
80	90.0	97.5	95.8	100	94.3	88.7	89.0	87.5										
85	33.2	38.9	37.1	41.7	36.7	33.3	33.5	32.2										
90	5.42	7.29	4.33	8.71	5.40	5.25	1.83	5.24										
95	2.75	3.02	2.97	3.22	1.55	1.77	1.09	1.74										
100	2.96	3.09	2.87	3.13	2.13	2.13	2.04	2.19										
105	3.71	3.66	3.20	3.73	3.27	3.12	3.28	3.16										
110	4.76	4.56	4.13	4.60	4.38	4.01	4.25	3.93										
115	5.84	5.63	5.26	5.63	5.39	4.86	5.12	5.02										
120	6.87	6.60	6.29	6.56	6.39	5.68	5.85	5.98										
125	7.83	7.48	7.11	7.37	7.31	6.49	6.49	6.79										
130	8.69	8.21	7.85	8.08	8.15	7.26	7.08	7.41										
135	9.45	8.84	8.49	8.71	8.90	8.06	7.61	7.91										
140	10.0	9.33	9.07	9.33	9.57	8.83	8.05	8.22										
145	10.5	9.69	9.52	9.93	10.1	9.62	8.44	8.46										
150	10.9	9.96	9.92	10.6	10.4	10.3	9.05	8.68										
155	11.4	10.2	10.5	11.2	10.9	11.0	9.97	9.00										
160	11.8	10.5	11.4	11.8	11.4	11.6	11.1	9.60										
165	12.3	11.1	12.3	12.4	11.7	12.1	12.0	10.6										
170	12.3	12.1	13.1	12.9	11.5	12.7	12.9	11.9										
175	11.9	13.2	13.8	13.7	11.2	13.4	13.7	13.2										
180	12.1	14.1	14.4	14.4	12.1	14.1	14.4	14.4										

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