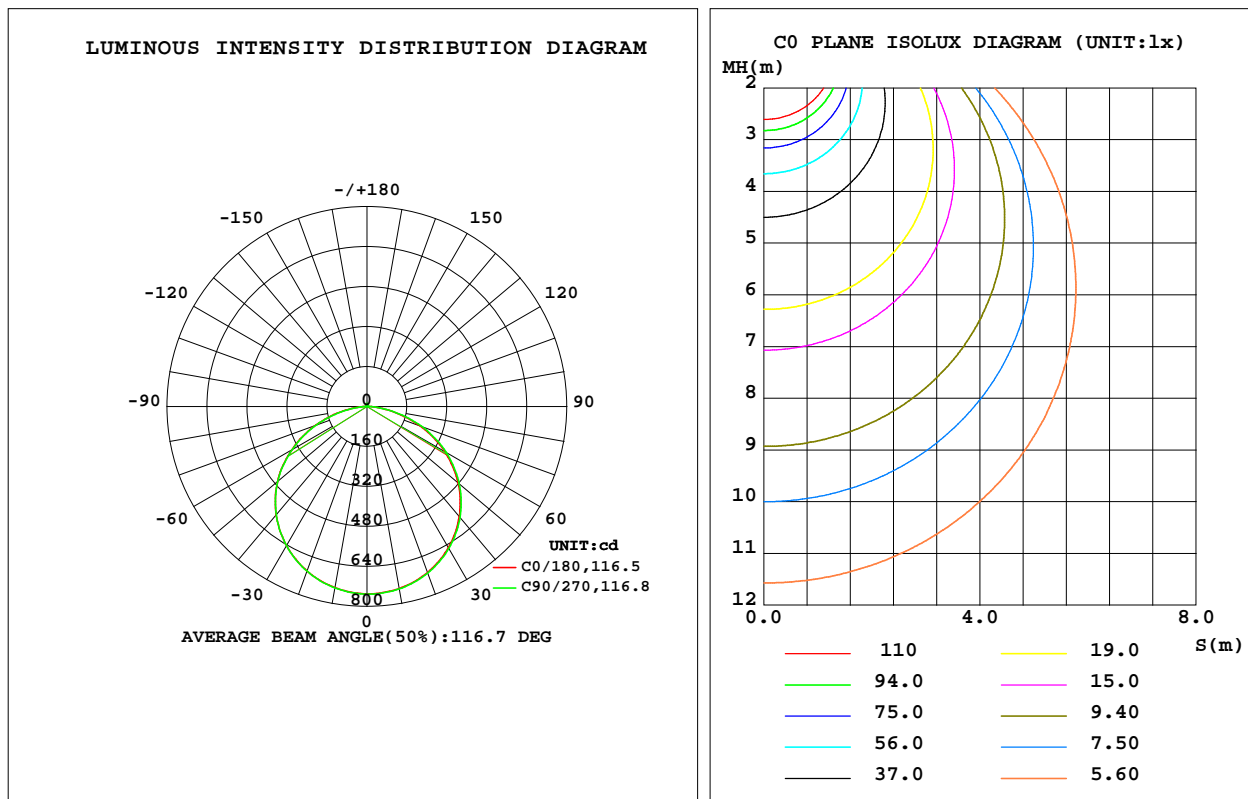


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:24.00V I:0.7740A P:18.50W PF:1.000 Freq:0Hz Lamp Flux:2276.8x1 lm		
NAME: D81922415NO	TYPE:	WEIGHT:
SPEC.:D81922415NO-HNWDA012WC0100	DIM.: 1000*15*1.5mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*15	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 123.07 lm/W			
MODEL	D81922415NO	I _{max} (cd)	751.8	S/MH(C0/180)	1.29
NOMINAL POWER(W)	18.9	LOR(%)	100.0	S/MH(C90/270)	1.28
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	2276.8	h UP,DN(C0-180)	0.9,50.0
NOMINAL FLUX(lm)	2276.8	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:

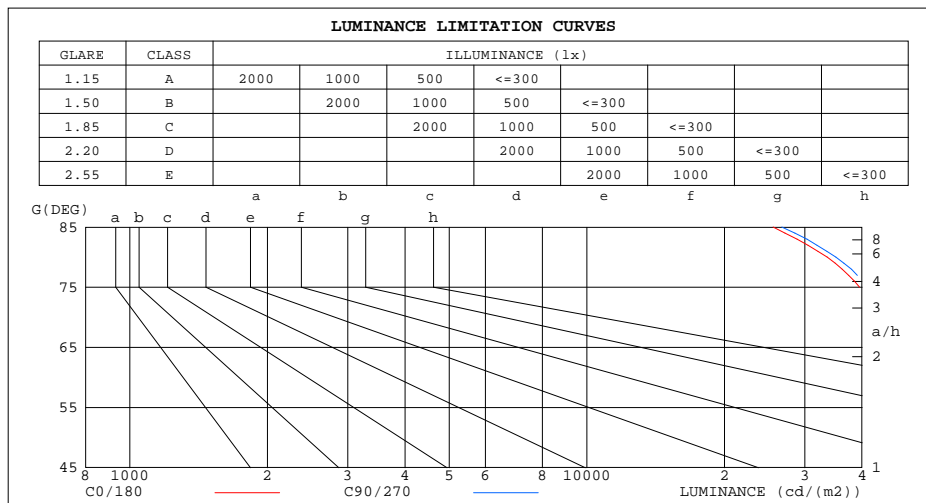
g	C0	C45	C90	C135	C180	C225	C270	C315	g	F zone	F total	%lum,lamp
10	739.9	742.3	741.6	741.5	736.2	736.4	737.3	739.1	0- 10	71.11	71.11	3.12,3.12
20	707.4	711.4	710.0	709.0	700.8	699.6	701.5	703.8	10- 20	204.8	275.9	12.1,12.1
30	652.2	657.5	655.8	654.0	643.7	641.4	644.1	646.5	20- 30	313.6	589.5	25.9,25.9
40	574.8	581.5	579.8	577.7	565.6	562.4	565.4	567.9	30- 40	383.6	973.1	42.7,42.7
50	476.3	484.1	482.5	480.5	467.5	463.1	466.3	467.7	40- 50	405.0	1378	60.5,60.5
60	358.2	364.0	365.4	361.8	348.6	345.9	346.2	349.5	50- 60	372.0	1750	76.9,76.9
70	224.1	230.6	231.7	230.1	218.2	214.3	214.1	215.9	60- 70	286.6	2037	89.5,89.5
80	87.44	93.68	91.39	94.82	86.20	81.49	81.48	81.18	70- 80	161.9	2199	96.6,96.6
90	5.473	5.992	4.190	7.497	4.566	3.709	1.865	3.345	80- 90	40.69	2239	98.4,98.4
100	2.805	2.901	2.665	2.914	2.142	2.025	1.902	2.101	90-100	2.573	2242	98.5,98.5
110	4.408	4.255	3.876	4.305	4.170	3.822	3.936	3.805	100-110	3.372	2245	98.6,98.6
120	6.404	6.199	5.951	6.112	6.061	5.420	5.474	5.729	110-120	4.971	2250	98.8,98.8
130	8.113	7.679	7.360	7.557	7.723	6.898	6.669	7.004	120-130	5.975	2256	99.1,99.1
140	9.418	8.739	8.475	8.711	9.033	8.366	7.615	7.748	130-140	6.163	2262	99.4,99.4
150	10.22	9.359	9.256	9.892	9.881	9.743	8.552	8.189	140-150	5.614	2268	99.6,99.6
160	11.14	9.900	10.61	11.08	10.72	10.96	10.41	9.120	150-160	4.574	2273	99.8,99.8
170	11.78	11.36	12.21	12.14	10.61	11.96	12.08	11.29	160-170	3.129	2276	99.9,99.9
180	11.40	13.24	13.45	13.55	11.36	13.25	13.47	13.56	170-180	1.149	2277	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:0.7740A P:18.50W PF:1.000 Freq:0Hz Lamp Flux:2276.8x1 lm		
NAME: D81922415NO	TYPE:	WEIGHT:
SPEC.:D81922415NO-HNWDA012WC0100	DIM.: 1000*15*1.5mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*15	Shielding Angle:



LUMINANCE cd/(m2)		
G(180)	C0/180	C90/270
85	25557	26715
80	33570	35087
75	39524	41382
70	43688	45169
65	46192	47371
60	47754	48719
55	48777	49557
50	49401	50038
45	49796	50317

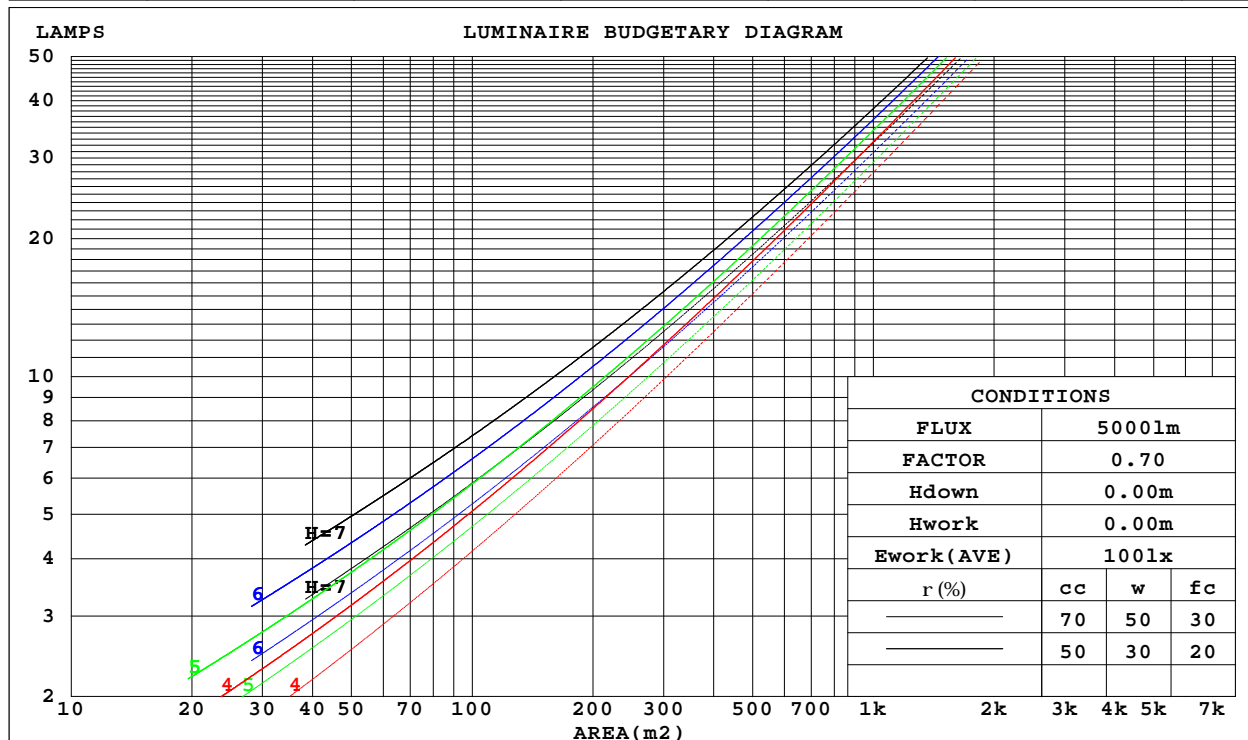
C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:JYH
 Test Date:2020-12-04

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:0.7740A P:18.50W PF:1.000 Freq:0Hz Lamp Flux:2276.8x1 lm		
NAME: D81922415NO	TYPE:	WEIGHT:
SPEC.:D81922415NO-HNWDA012WC0100	DIM.: 1000*15*1.5mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*15	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
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:0.7740A P:18.50W PF:1.000 Freq:0Hz Lamp Flux:2276.8x1 lm		
NAME: D81922415NO	TYPE:	WEIGHT:
SPEC.:D81922415NO-HNWNDA012WC0100	DIM.: 1000*15*1.5mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*15	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	.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	.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	.086	.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	.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	.131	.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:0.7740A P:18.50W PF:1.000 Freq:0Hz Lamp Flux:2276.8x1 lm											
NAME: D81922415NO						TYPE:		WEIGHT:			
SPEC.:D81922415NO-HNWDA012WC0100						DIM.: 1000*15*1.5mm		SERIAL No.:			
MFR.: COLORS						SUR.:1000*15		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	23.6	25.1	23.9	25.3	25.6	23.7	25.2	23.9	25.4	25.6	
	3H	25.1	26.5	25.5	26.8	27.1	25.2	26.6	25.6	26.9	27.2
	4H	25.7	27.0	26.1	27.3	27.6	25.9	27.2	26.2	27.5	27.8
	6H	26.1	27.4	26.5	27.7	28.0	26.3	27.5	26.6	27.8	28.1
	8H	26.2	27.4	26.6	27.7	28.1	26.4	27.6	26.7	27.9	28.2
	12H	26.2	27.4	26.6	27.7	28.1	26.4	27.6	26.8	27.9	28.2
4H	2H	24.2	25.6	24.6	25.8	26.1	24.3	25.6	24.6	25.9	26.2
	3H	26.0	27.1	26.3	27.4	27.8	26.0	27.2	26.4	27.5	27.9
	4H	26.7	27.7	27.1	28.1	28.4	26.8	27.8	27.2	28.2	28.6
	6H	27.2	28.1	27.6	28.5	28.9	27.3	28.2	27.7	28.6	29.0
	8H	27.3	28.2	27.7	28.6	29.0	27.5	28.3	27.9	28.7	29.1
	12H	27.4	28.2	27.8	28.6	29.0	27.5	28.3	28.0	28.8	29.2
8H	4H	26.9	27.8	27.4	28.2	28.6	27.0	27.9	27.5	28.3	28.7
	6H	27.6	28.3	28.0	28.7	29.2	27.7	28.4	28.2	28.9	29.3
	8H	27.8	28.4	28.3	28.9	29.4	27.9	28.6	28.4	29.0	29.5
	12H	27.9	28.5	28.4	29.0	29.5	28.1	28.6	28.6	29.1	29.6
12H	4H	26.9	27.7	27.4	28.2	28.6	27.0	27.8	27.5	28.3	28.7
	6H	27.6	28.3	28.1	28.7	29.2	27.7	28.4	28.2	28.8	29.3
	8H	27.9	28.4	28.4	28.9	29.4	28.0	28.6	28.5	29.0	29.5
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, 2277 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 2.9)

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:0.7740A P:18.50W PF:1.000 Freq:0Hz Lamp Flux:2276.8x1 lm		
NAME: D81922415NO	TYPE:	WEIGHT:
SPEC.:D81922415NO-HNWDA012WC0100	DIM.: 1000*15*1.5mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*15	Shielding Angle:

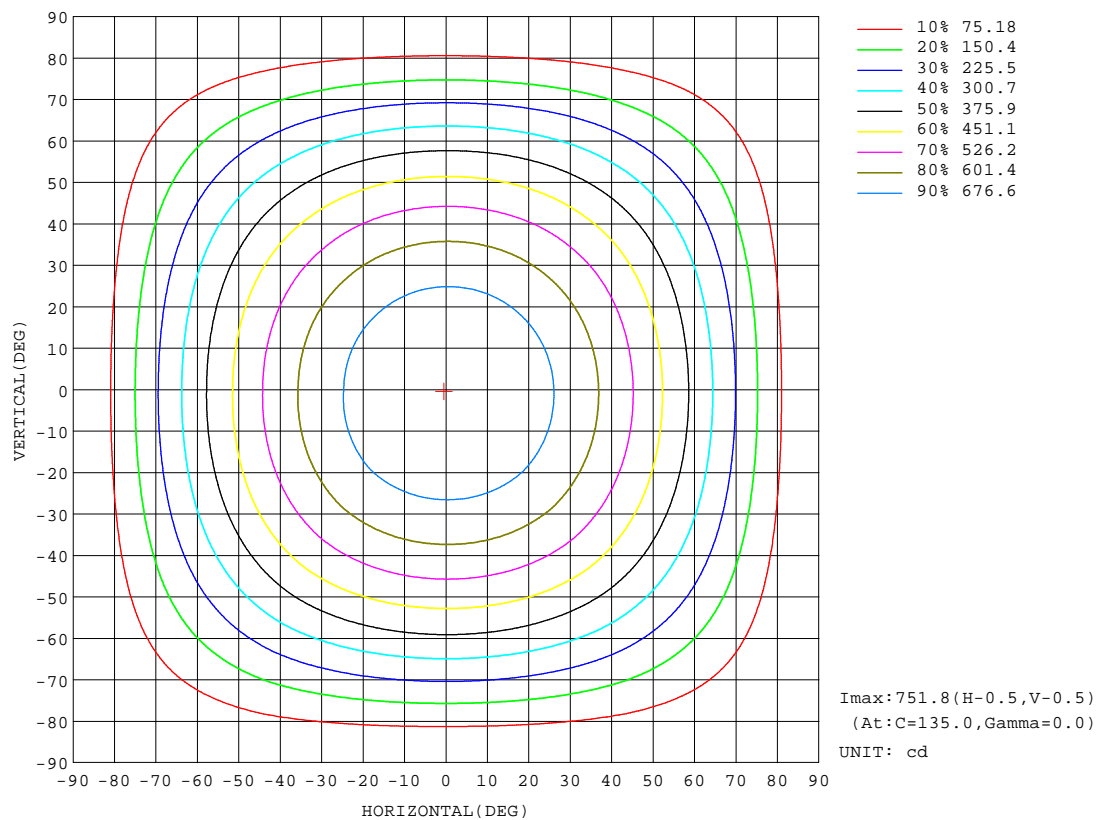
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	56	45	38	56	44	37	54	44	37	31
0.80	66	55	47	65	54	47	63	53	47	39
1.00	75	64	56	74	63	56	71	64	55	48
1.25	82	71	64	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	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:0.7740A P:18.50W PF:1.000 Freq:0Hz Lamp Flux:2276.8x1 lm		
NAME: D81922415NO	TYPE:	WEIGHT:
SPEC.:D81922415NO-HNWDA012WC0100	DIM.: 1000*15*1.5mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*15	Shielding Angle:



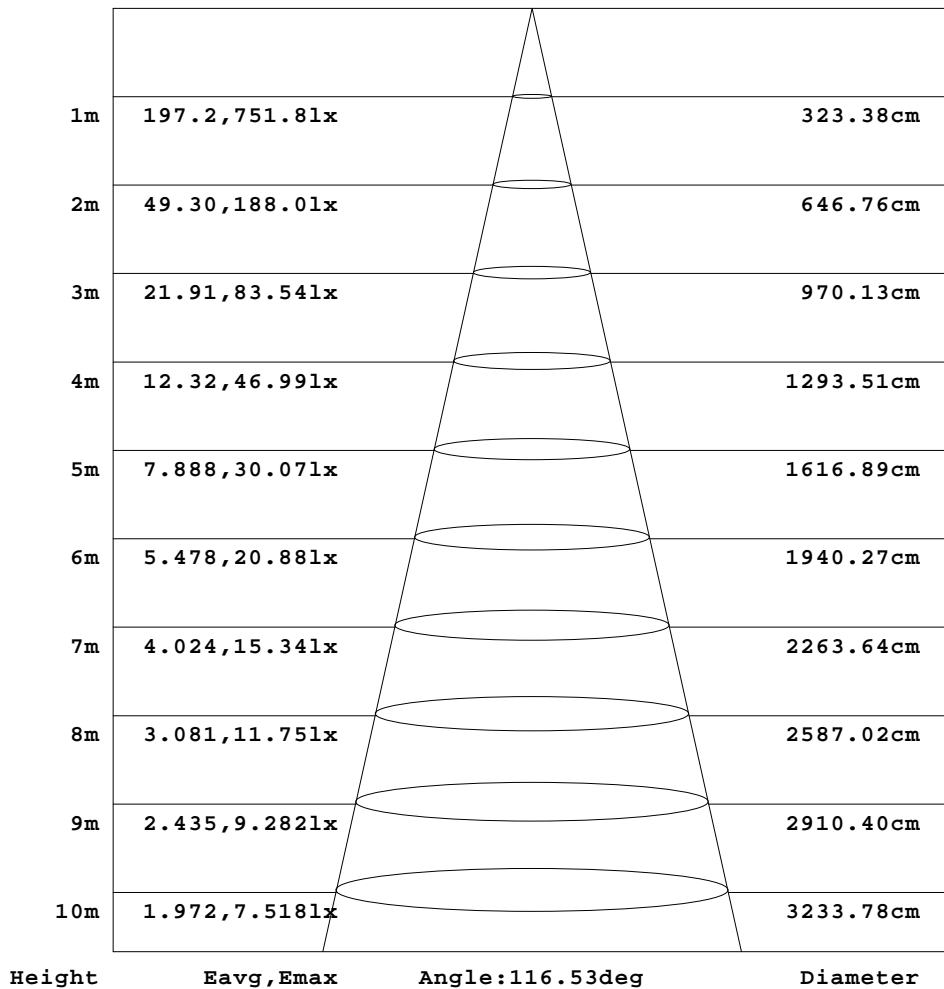
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JYH
Test Date:2020-12-04

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:0.7740A P:18.50W PF:1.000 Freq:0Hz Lamp Flux:2276.8x1 lm		
NAME: D81922415NO	TYPE:	WEIGHT:
SPEC.:D81922415NO-HNWDA012WC0100	DIM.: 1000*15*1.5mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*15	Shielding Angle:

Flux out:1716 lm



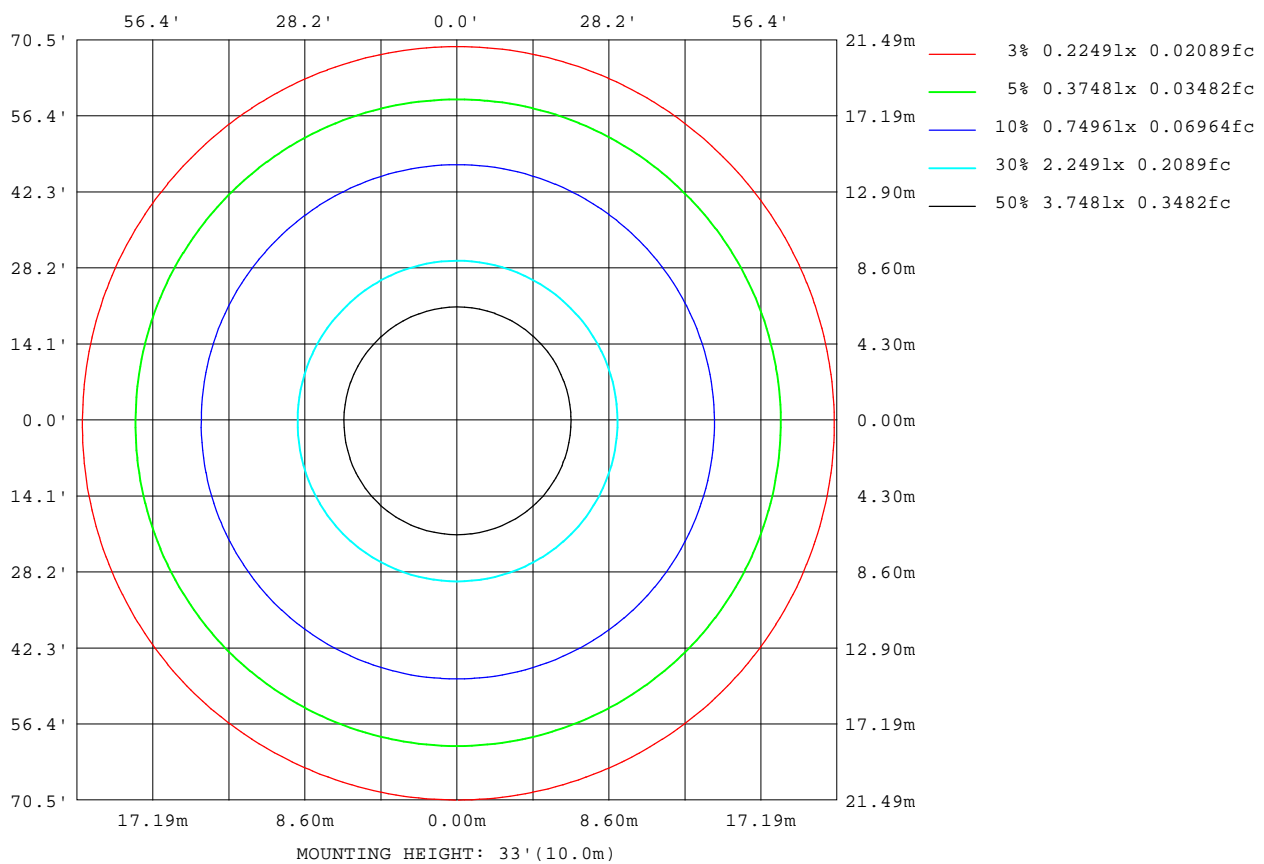
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

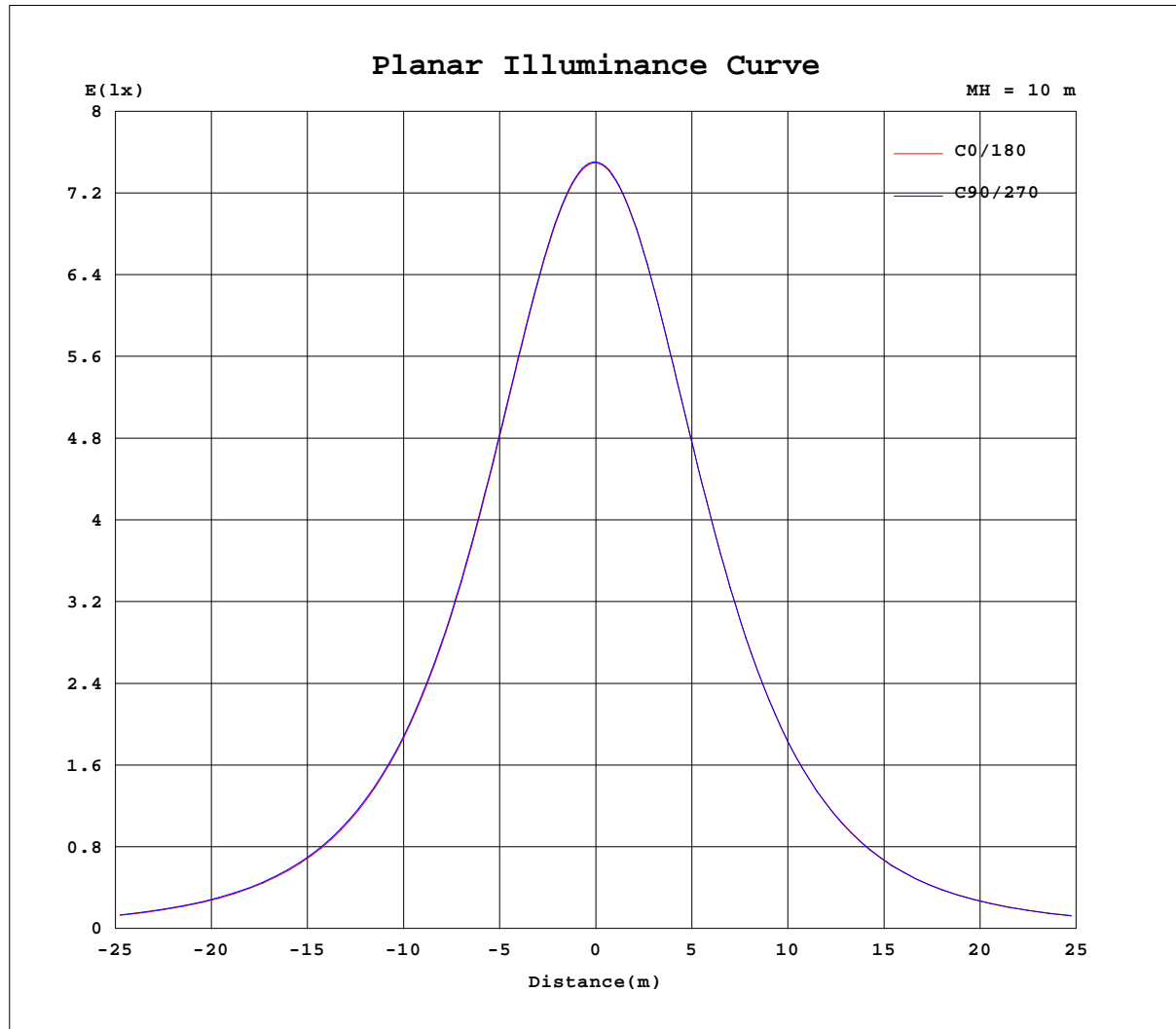
Test:U:24.00V I:0.7740A P:18.50W PF:1.000 Freq:0Hz Lamp Flux:2276.8x1 lm		
NAME: D81922415NO	TYPE:	WEIGHT:
SPEC.:D81922415NO-HNWNDA012WC0100	DIM.: 1000*15*1.5mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*15	Shielding Angle:



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:0.7740A P:18.50W PF:1.000 Freq:0Hz Lamp Flux:2276.8x1 lm		
NAME: D81922415NO	TYPE:	WEIGHT:
SPEC.:D81922415NO-HNWDA012WC0100	DIM.: 1000*15*1.5mm	SERIAL No.:
MFR.: COLORS	SUR.:1000*15	Shielding Angle:

Table--1

UNIT: cd

C(DEG) g (DEG)	0	45	90	135	180	225	270	315										
0	750	751	751	752	750	751	751	752										
5	748	749	749	749	746	746	747	748										
10	740	742	742	742	736	736	737	739										
15	727	730	729	728	721	721	722	724										
20	707	711	710	709	701	700	701	704										
25	682	687	686	684	675	673	675	678										
30	652	657	656	654	644	641	644	647										
35	616	622	620	618	607	604	607	610										
40	575	582	580	578	566	562	565	568										
45	528	535	534	531	519	515	518	520										
50	476	484	482	481	468	463	466	468										
55	420	428	426	425	411	407	409	411										
60	358	364	365	362	349	346	346	350										
65	293	299	300	298	285	282	282	284										
70	224	231	232	230	218	214	214	216										
75	153	161	161	161	151	145	146	146										
80	87.4	93.7	91.4	94.8	86.2	81.5	81.5	81.2										
85	33.4	36.9	34.9	38.8	33.0	29.5	29.0	29.0										
90	5.47	5.99	4.19	7.50	4.57	3.71	1.87	3.35										
95	2.44	2.84	2.79	2.95	1.28	1.44	1.03	1.38										
100	2.80	2.90	2.67	2.91	2.14	2.02	1.90	2.10										
105	3.49	3.41	2.97	3.46	3.13	2.97	3.03	2.83										
110	4.41	4.26	3.88	4.30	4.17	3.82	3.94	3.81										
115	5.43	5.27	4.97	5.25	5.13	4.64	4.77	4.80										
120	6.40	6.20	5.95	6.11	6.06	5.42	5.47	5.73										
125	7.32	7.00	6.70	6.88	6.94	6.13	6.11	6.42										
130	8.11	7.68	7.36	7.56	7.72	6.90	6.67	7.00										
135	8.83	8.28	7.95	8.16	8.43	7.63	7.18	7.45										
140	9.42	8.74	8.47	8.71	9.03	8.37	7.62	7.75										
145	9.86	9.09	8.88	9.29	9.53	9.06	7.99	7.98										
150	10.2	9.36	9.26	9.89	9.88	9.74	8.55	8.19										
155	10.7	9.59	9.80	10.5	10.3	10.4	9.41	8.49										
160	11.1	9.90	10.6	11.1	10.7	11.0	10.4	9.12										
165	11.6	10.4	11.5	11.6	11.0	11.4	11.3	10.1										
170	11.8	11.4	12.2	12.1	10.6	12.0	12.1	11.3										
175	11.3	12.3	12.9	12.8	10.4	12.6	12.8	12.5										
180	11.4	13.2	13.5	13.6	11.4	13.3	13.5	13.6										

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: