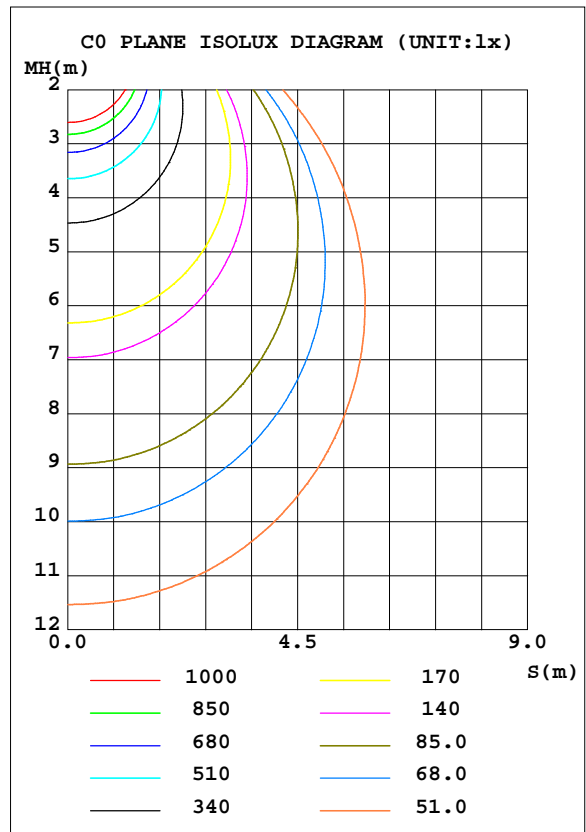
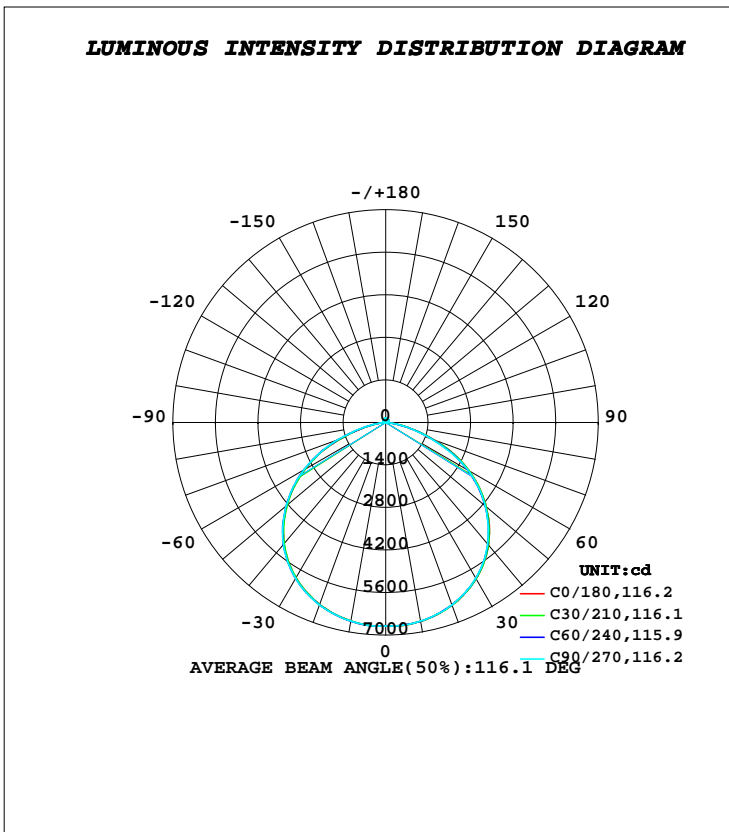


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:220.60V I:0.6230A P:134.60W PF:0.9780 Freq:50.00Hz Lamp Flux:19978.2x1 lm		
NAME: LN-UFO150-U-N-QW-B-U-C-CB40	TYPE:LED	
MFR.:		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 148.43 lm/W			
MODEL		I _{max} (cd)	6711	S/MH(C0/180)	1.32
NOMINAL POWER(W)	150	LOR(%)	100.0	S/MH(C90/270)	1.31
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	19978	η UP, DN(C0-180)	1.4, 48.6
NOMINAL FLUX(lm)	19978.2	CIE CLASS	DIRECT	η UP, DN(C180-360)	1.4, 48.6
LAMPS INSIDE	1	η up(%)	2.8	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	221.7	η down(%)	97.2	CIBSE SHR MAX	1.50



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2019-05-27

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

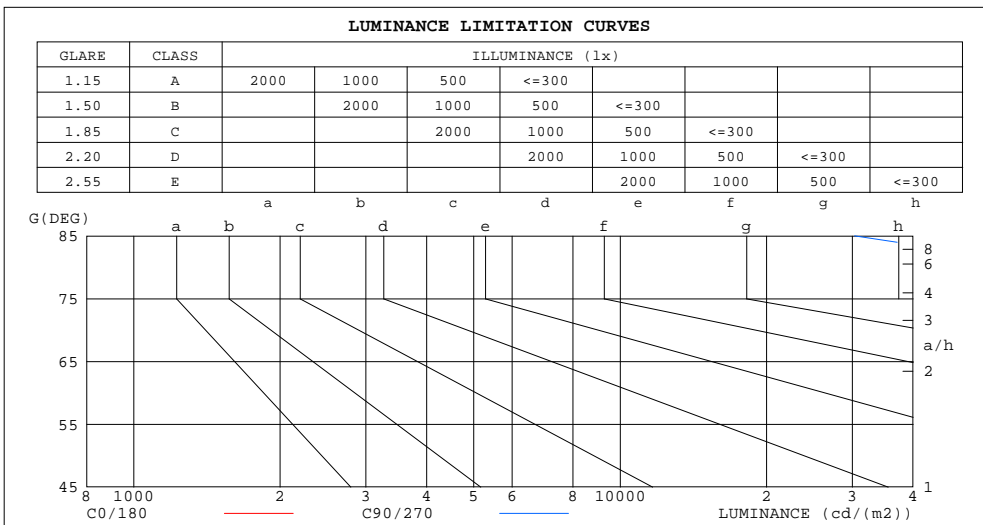
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	6645	6644	6637	6640	6634	6636	6638	6647	0- 10	637.4	637.4	3.19,3.19
20	6397	6394	6386	6378	6373	6379	6388	6400	10- 20	1847	2484	12.4,12.4
30	5943	5936	5928	5912	5905	5915	5927	5942	20- 30	2851	5335	26.7,26.7
40	5264	5244	5222	5211	5215	5224	5239	5261	30- 40	3510	8845	44.3,44.3
50	4316	4297	4283	4264	4263	4254	4274	4316	40- 50	3689	12534	62.7,62.7
60	3151	3128	3114	3075	3063	3066	3091	3133	50- 60	3322	15856	79.4,79.4
70	1705	1659	1619	1578	1570	1622	1684	1691	60- 70	2373	18229	91.2,91.2
80	436.2	424.7	409.5	373.5	360.0	382.0	409.1	436.3	70- 80	1032	19261	96.4,96.4
90	40.45	40.73	40.47	40.48	49.98	49.82	49.63	50.13	80- 90	154.1	19415	97.2,97.2
100	52.96	53.32	53.75	54.11	60.92	60.67	60.46	60.14	90-100	55.24	19471	97.5,97.5
110	69.31	69.69	70.20	70.63	75.74	75.25	74.85	74.64	100-110	68.32	19539	97.8,97.8
120	84.73	85.11	85.62	86.13	90.93	90.49	90.05	89.87	110-120	79.68	19619	98.2,98.2
130	98.95	99.35	99.87	100.4	103.9	103.2	102.8	102.6	120-130	84.90	19704	98.6,98.6
140	112.5	113.2	113.9	114.2	115.3	114.4	113.9	113.8	130-140	83.25	19787	99,99
150	125.3	126.1	126.9	127.1	126.8	126.0	125.4	125.2	140-150	75.21	19862	99.4,99.4
160	138.1	138.9	139.5	139.6	138.4	137.9	137.1	137.0	150-160	61.01	19923	99.7,99.7
170	149.7	150.5	150.8	150.8	149.2	148.7	148.5	148.3	160-170	40.67	19964	99.9,99.9
180	152.8	153.3	153.6	153.3	153.6	153.4	153.2	153.3	170-180	14.48	19978	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2019-05-27

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:220.60V I:0.6230A P:134.60W PF:0.9780 Freq:50.00Hz Lamp Flux:19978.2x1 lm		
NAME: LN-UFO150-U-N-QW-B-U-C-CB40	TYPE:LED	
MFR.:		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	38891	30314
80	84736	78355
75	130330	123375
70	168201	157319
65	199219	187673
60	212615	206964
55	221600	216509
50	226491	221418
45	230288	224330

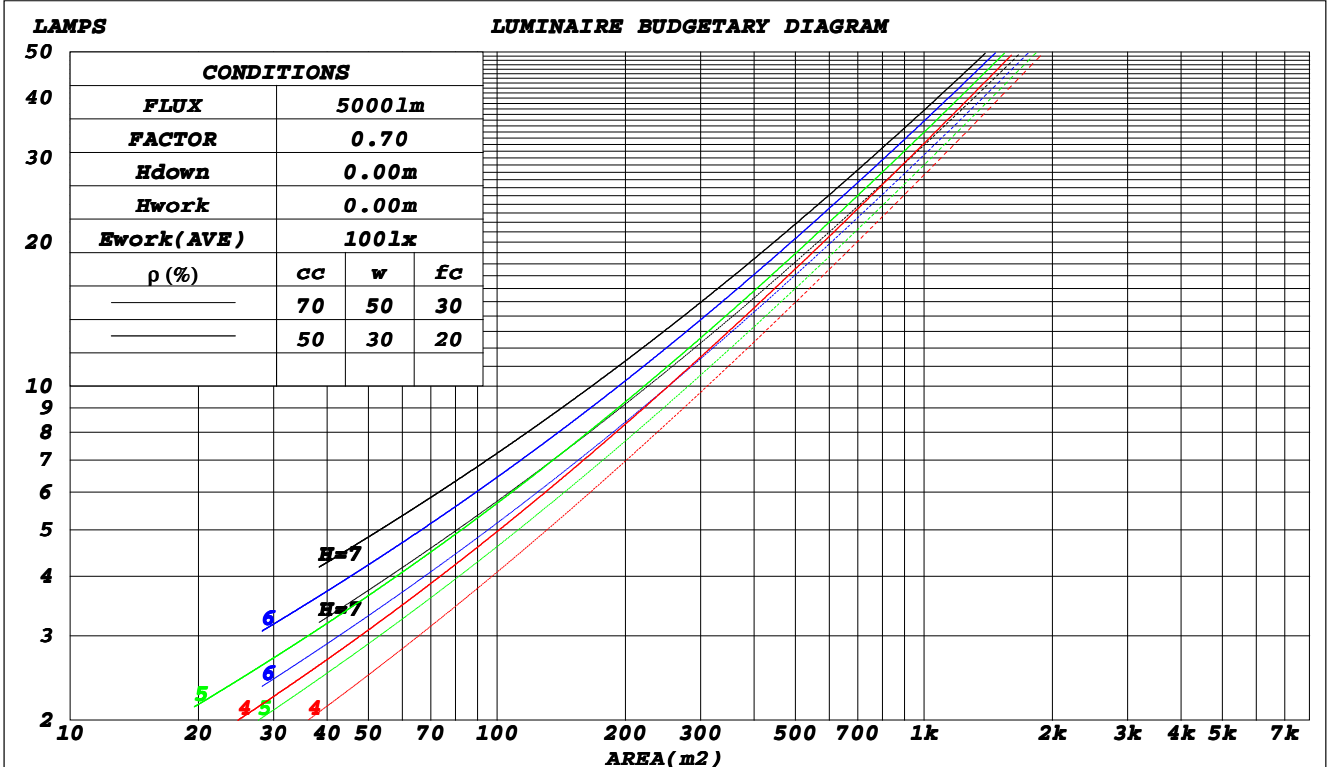
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2019-05-27

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.60V I:0.6230A P:134.60W PF:0.9780 Freq:50.00Hz Lamp Flux:19978.2x1 lm		
NAME: LN-UFO150-U-N-QW-B-U-C-CB40	TYPE:LED	
MFR.:		

ρcc	80%			70%			50%			30%			10%			0
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρw	0															
ρfc	0															
RCR	RCR:Room Cavity Ratio															
	Coefficients of Utilization(CU)															
0.0	1.18	1.18	1.18	1.15	1.15	1.15	1.10	1.10	1.10	1.04	1.04	1.04	.99	.99	.99	.97
1.0	1.04	1.00	.97	1.02	.98	.95	.97	.94	.91	.93	.90	.88	.89	.87	.85	.83
2.0	.91	.85	.79	.89	.83	.78	.85	.80	.76	.81	.77	.73	.78	.74	.71	.69
3.0	.80	.72	.66	.78	.71	.65	.75	.69	.63	.72	.66	.62	.69	.64	.61	.58
4.0	.71	.62	.56	.69	.61	.55	.66	.60	.54	.64	.58	.53	.61	.56	.52	.50
5.0	.63	.54	.48	.62	.54	.47	.60	.52	.47	.57	.51	.46	.55	.50	.45	.43
6.0	.57	.48	.42	.56	.47	.41	.54	.46	.41	.52	.45	.40	.50	.44	.40	.37
7.0	.51	.43	.37	.51	.42	.36	.49	.41	.36	.47	.40	.36	.45	.40	.35	.33
8.0	.47	.38	.33	.46	.38	.32	.45	.37	.32	.43	.36	.32	.42	.36	.31	.29
9.0	.43	.35	.29	.42	.34	.29	.41	.34	.29	.40	.33	.29	.38	.33	.28	.26
10.0	.40	.32	.26	.39	.31	.26	.38	.31	.26	.37	.30	.26	.36	.30	.26	.24



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2019-05-27

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
 Humidity: 65.0%
 Test Distance: 8.000m [K=0.7063]
 Remarks:

WEC AND CCEC

Test:U:220.60V I:0.6230A P:134.60W PF:0.9780 Freq:50.00Hz Lamp Flux:19978.2x1 lm		
NAME: LN-UFO150-U-N-QW-B-U-C-CB40	TYPE:LED	
MFR.:		

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						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.290	.165	.052	.282	.161	.051	.267	.153	.049	.254	.146	.047	.241	.140	.045	
2.0	.279	.153	.047	.272	.150	.046	.259	.144	.045	.247	.139	.043	.236	.133	.042	
3.0	.261	.139	.042	.255	.137	.041	.243	.132	.040	.233	.128	.039	.223	.123	.038	
4.0	.243	.126	.037	.237	.124	.037	.227	.120	.036	.217	.117	.035	.209	.113	.035	
5.0	.226	.115	.033	.221	.113	.033	.212	.110	.032	.203	.107	.032	.195	.104	.031	
6.0	.210	.105	.030	.206	.104	.030	.197	.101	.029	.190	.099	.029	.182	.096	.029	
7.0	.196	.097	.027	.192	.096	.027	.185	.093	.027	.178	.091	.027	.171	.089	.026	
8.0	.184	.090	.025	.180	.089	.025	.173	.087	.025	.167	.085	.024	.161	.083	.024	
9.0	.172	.083	.023	.169	.082	.023	.163	.081	.023	.157	.079	.023	.152	.077	.022	
10.0	.162	.078	.022	.159	.077	.021	.154	.075	.021	.148	.074	.021	.143	.072	.021	

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	.212	.212	.212	.181	.181	.181	.124	.124	.124	.071	.071	.071	.023	.023	.023	
1.0	.201	.178	.158	.172	.153	.136	.117	.105	.094	.068	.061	.055	.022	.020	.018	
2.0	.192	.154	.121	.165	.132	.105	.113	.092	.073	.065	.053	.043	.021	.017	.014	
3.0	.185	.136	.097	.158	.117	.084	.109	.082	.059	.063	.048	.035	.020	.015	.011	
4.0	.177	.123	.081	.152	.106	.071	.105	.074	.050	.061	.043	.029	.019	.014	.010	
5.0	.170	.112	.070	.146	.097	.061	.101	.068	.043	.058	.040	.025	.019	.013	.008	
6.0	.163	.104	.062	.140	.090	.054	.097	.063	.038	.056	.037	.023	.018	.012	.007	
7.0	.157	.097	.056	.135	.084	.049	.093	.059	.034	.054	.035	.020	.017	.011	.007	
8.0	.150	.092	.051	.129	.079	.045	.090	.056	.032	.052	.033	.019	.017	.011	.006	
9.0	.144	.087	.048	.124	.075	.042	.086	.053	.030	.050	.031	.018	.016	.010	.006	
10.0	.139	.082	.045	.120	.072	.039	.083	.050	.028	.048	.030	.017	.016	.010	.006	

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-05-27

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
 Humidity:65.0%
 Test Distance:8.000m [K=0.7063]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:220.60V I:0.6230A P:134.60W PF:0.9780 Freq:50.00Hz Lamp Flux:19978.2x1 lm										
NAME: LN-UFO150-U-N-QW-B-U-C-CB40					TYPE:LED					
MFR.:										

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	31.7	33.1	32.0	33.4	33.7	31.5	33.0	31.8	33.2	33.5
3H	32.9	34.3	33.3	34.6	34.9	32.7	34.0	33.0	34.3	34.6
4H	33.3	34.6	33.6	34.9	35.2	33.0	34.3	33.4	34.6	34.9
6H	33.4	34.6	33.8	34.9	35.3	33.1	34.3	33.5	34.7	35.0
8H	33.4	34.6	33.8	34.9	35.2	33.1	34.3	33.5	34.6	35.0
12H	33.4	34.5	33.8	34.8	35.2	33.1	34.2	33.5	34.5	34.9
4H 2H	32.2	33.5	32.6	33.8	34.1	32.1	33.4	32.4	33.7	34.0
3H	33.6	34.7	34.0	35.0	35.4	33.4	34.5	33.8	34.8	35.2
4H	34.0	35.0	34.4	35.4	35.8	33.8	34.8	34.2	35.2	35.6
6H	34.2	35.1	34.7	35.5	35.9	34.0	34.9	34.4	35.3	35.7
8H	34.2	35.1	34.7	35.5	35.9	34.0	34.8	34.4	35.2	35.7
12H	34.2	35.0	34.7	35.4	35.9	33.9	34.7	34.4	35.1	35.6
8H 4H	34.1	35.0	34.6	35.4	35.8	33.9	34.7	34.4	35.2	35.6
6H	34.4	35.1	34.9	35.5	36.0	34.2	34.8	34.6	35.3	35.8
8H	34.5	35.0	35.0	35.5	36.0	34.2	34.8	34.7	35.3	35.8
12H	34.4	35.0	35.0	35.5	36.0	34.2	34.7	34.7	35.2	35.7
12H 4H	34.1	34.9	34.6	35.3	35.8	33.9	34.6	34.4	35.1	35.5
6H	34.4	35.0	34.9	35.5	36.0	34.1	34.7	34.6	35.2	35.7
8H	34.4	35.0	35.0	35.5	36.0	34.2	34.7	34.7	35.2	35.7
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
1.5H	+ 0.2 / - 0.4					+ 0.2 / - 0.4				
2.0H	+ 0.3 / - 0.4					+ 0.3 / - 0.4				

CIE Pub.117, 19978 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = 10.4)

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-05-27

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
 Humidity:65.0%
 Test Distance:8.000m [K=0.7063]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:220.60V I:0.6230A P:134.60W PF:0.9780 Freq:50.00Hz Lamp Flux:19978.2x1 lm		
NAME: LN-UFO150-U-N-QW-B-U-C-CB40	TYPE:LED	
MFR.:		

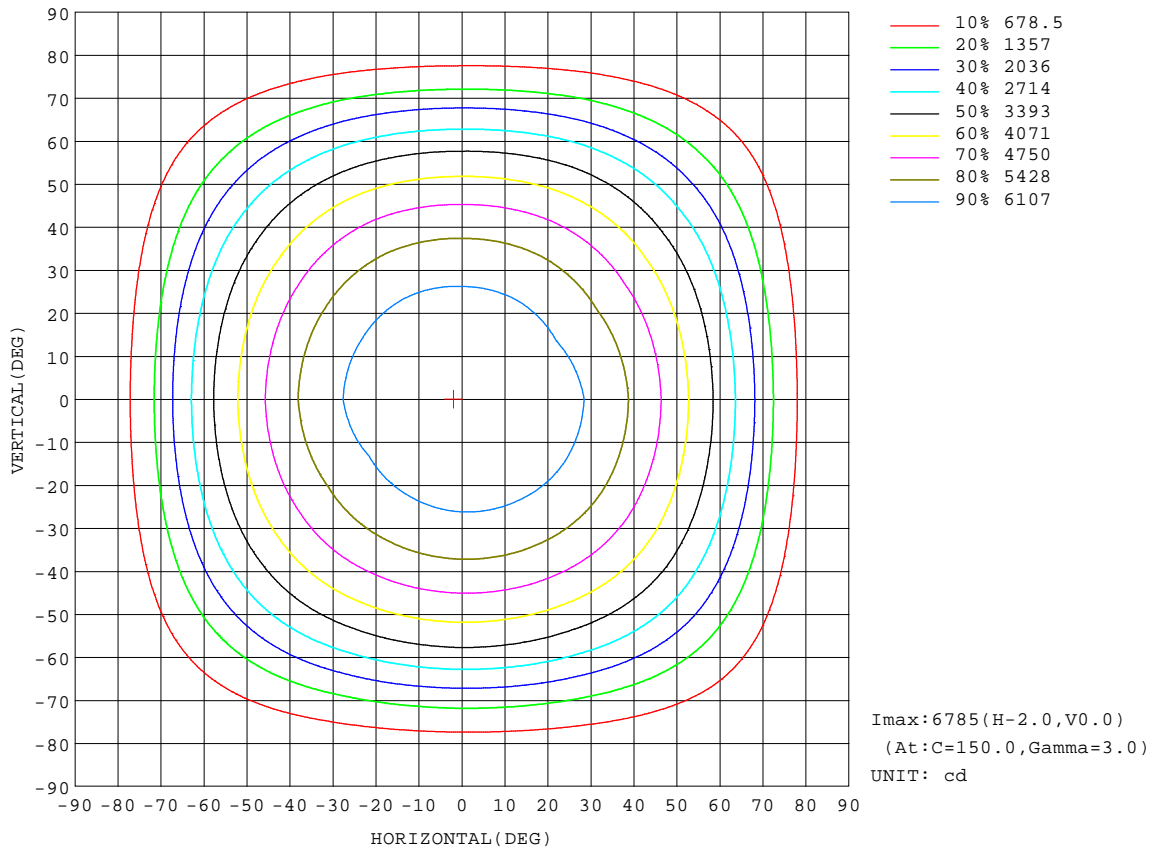
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	57	45	39	56	45	38	55	45	38	32
0.80	67	56	48	66	55	48	64	54	48	41
1.00	76	65	58	75	64	57	72	65	57	49
1.25	83	73	66	82	72	65	79	70	64	57
1.50	88	79	72	86	77	71	83	75	70	62
2.00	95	87	81	93	85	80	89	83	78	70
2.50	99	91	86	97	90	85	93	87	82	74
3.00	102	96	90	100	94	89	96	91	87	78
4.00	106	101	96	104	99	95	99	95	92	82
5.00	109	104	100	106	102	98	101	98	95	85
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2019-05-27

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

ISOCANDELA DIAGRAM

Test:U:220.60V I:0.6230A P:134.60W PF:0.9780 Freq:50.00Hz Lamp Flux:19978.2x1 lm		
NAME: LN-UFO150-U-N-QW-B-U-C-CB40	TYPE:LED	
MFR.:		



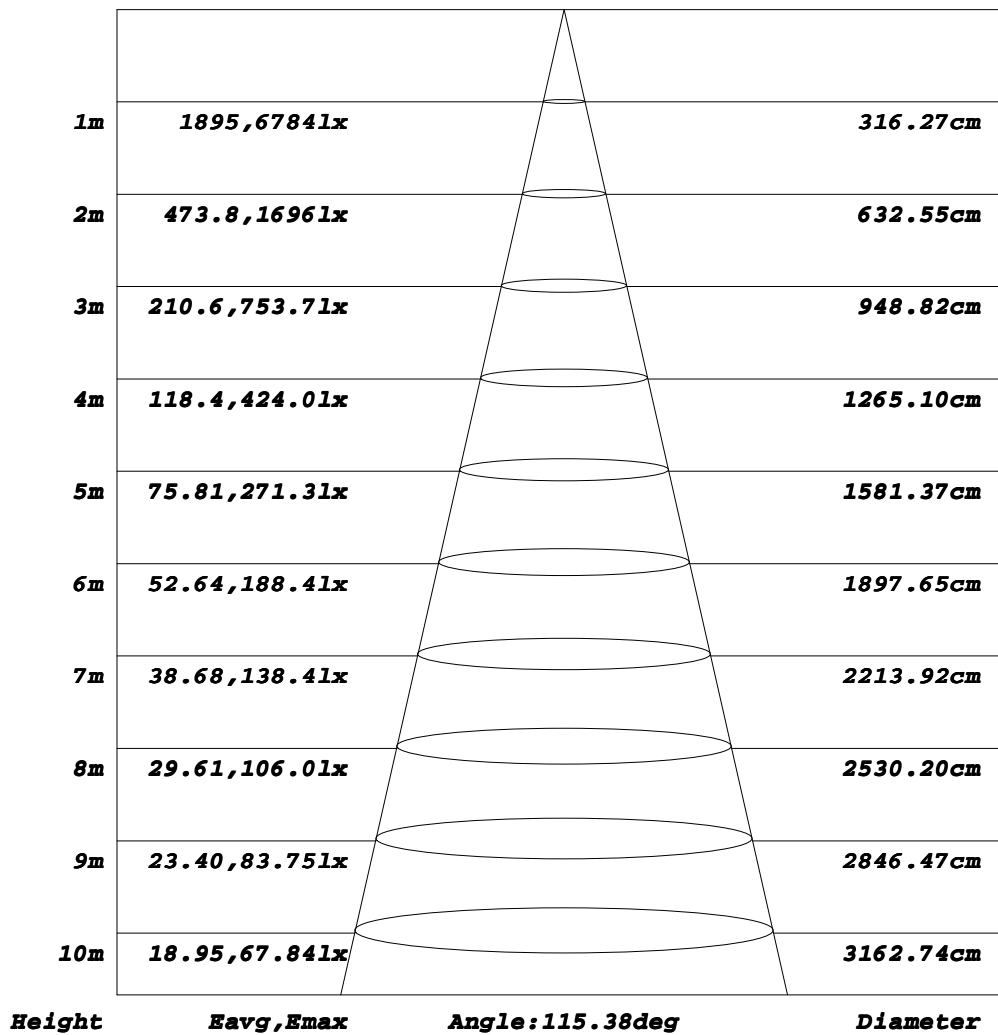
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2019-05-27

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

AAI Figure

Test:U:220.60V I:0.6230A P:134.60W PF:0.9780 Freq:50.00Hz Lamp Flux:19978.2x1 lm		
NAME: LN-UFO150-U-N-QW-B-U-C-CB40	TYPE:LED	
MFR.:		

Flux out:15248 lm



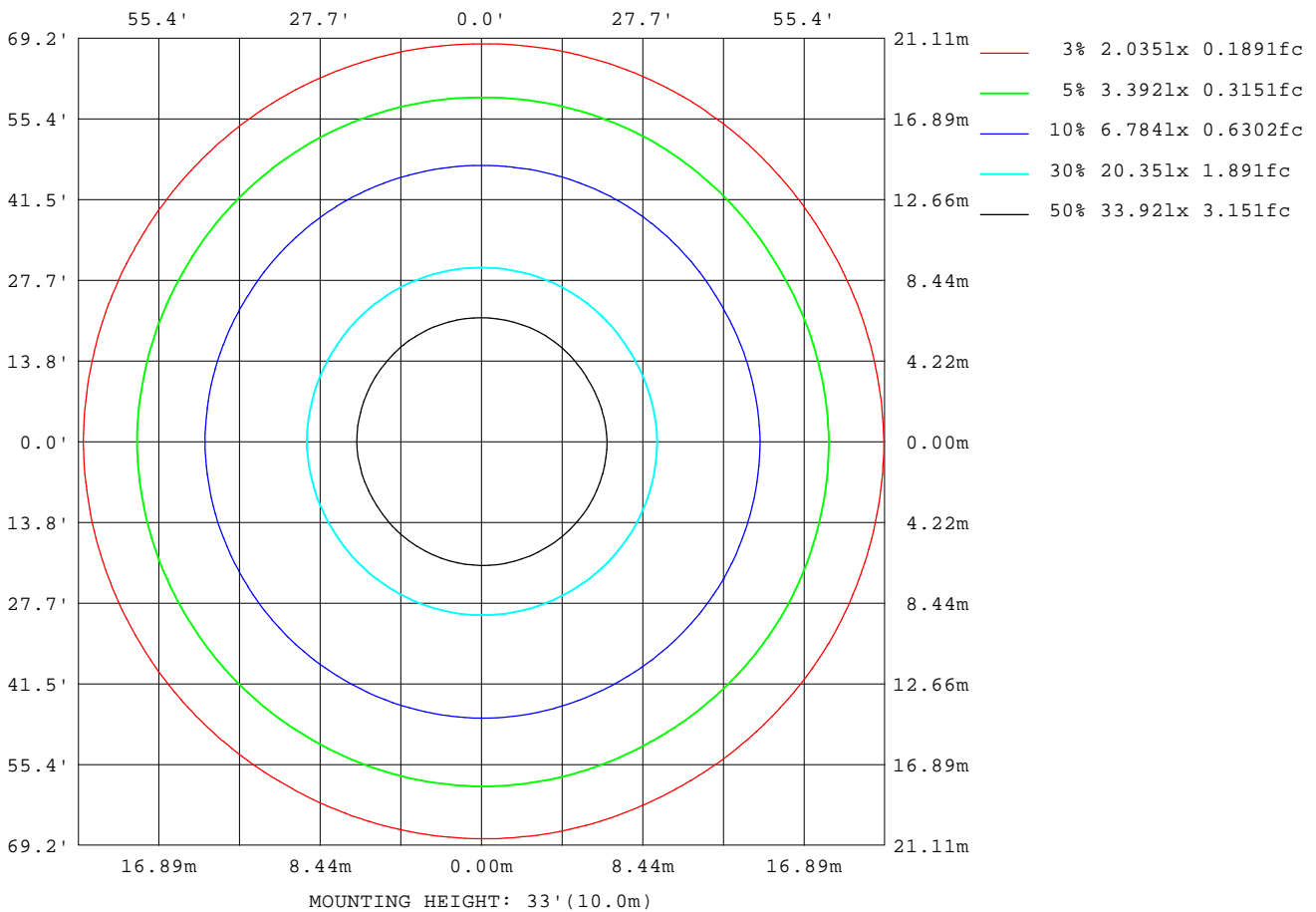
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2019-05-27

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

ISOLUX DIAGRAM

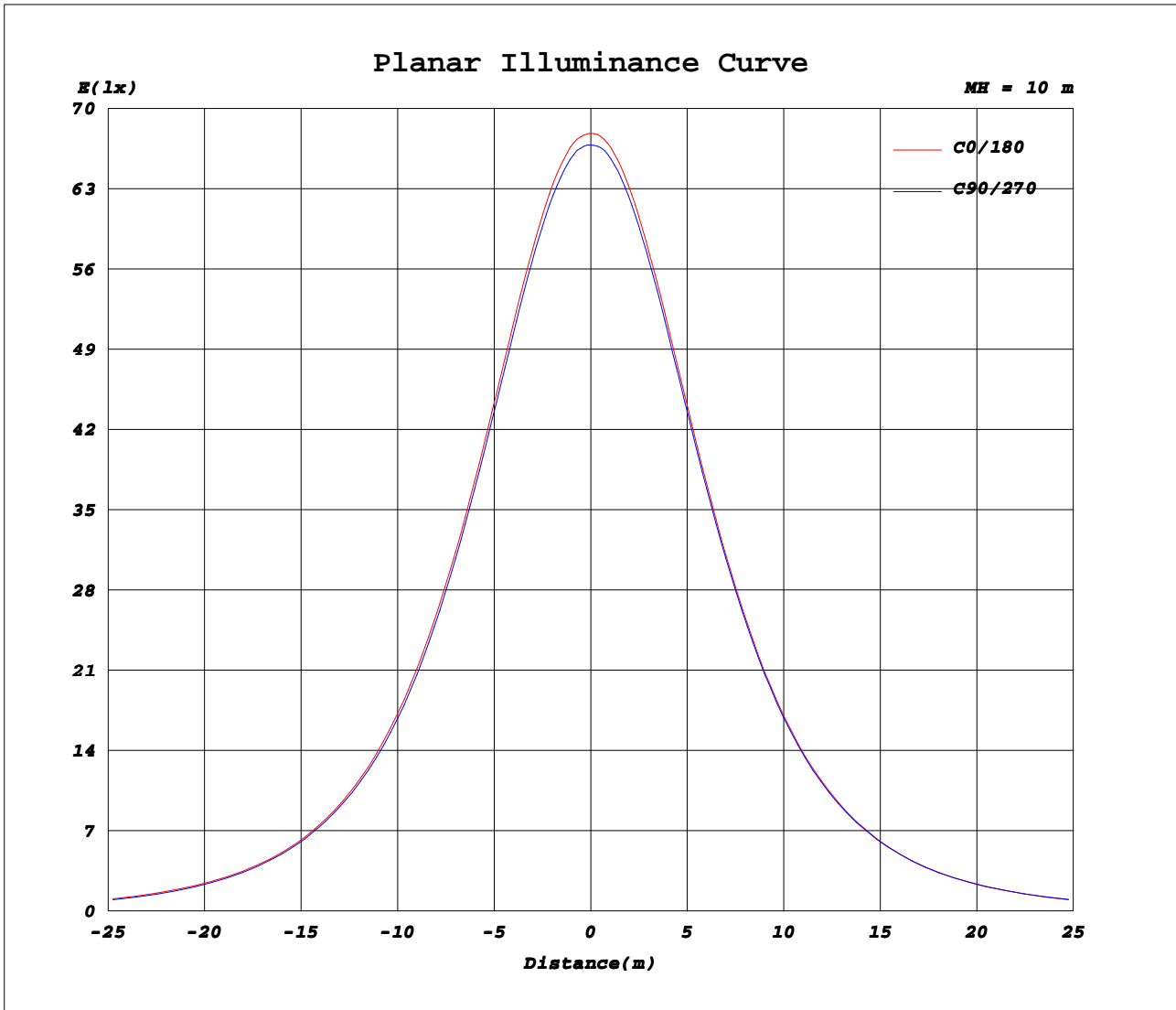
Test:U:220.60V I:0.6230A P:134.60W PF:0.9780 Freq:50.00Hz Lamp Flux:19978.2x1 lm		
NAME: LN-UFO150-U-N-QW-B-U-C-CB40	TYPE:LED	
MFR.:		



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2019-05-27

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2019-05-27

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:220.60V I:0.6230A P:134.60W PF:0.9780 Freq:50.00Hz Lamp Flux:19978.2x1 lm		
NAME: LN-UFO150-U-N-QW-B-U-C-CB40	TYPE:LED	
MFR.:		

Table--1

UNIT: cd

C (DEG) \ γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330							
0	6703	6703	6703	6703	6703	6703	6703	6703	6703	6703	6703	6703							
5	6699	6700	6698	6697	6698	6701	6694	6695	6702	6700	6697	6699							
10	6645	6647	6642	6637	6637	6643	6634	6631	6640	6638	6647	6647							
15	6544	6549	6535	6538	6527	6534	6529	6523	6538	6534	6549	6545							
20	6397	6401	6386	6386	6375	6382	6373	6373	6386	6388	6400	6399							
25	6197	6199	6186	6181	6168	6176	6165	6166	6185	6184	6198	6199							
30	5943	5949	5923	5928	5906	5919	5905	5903	5927	5927	5942	5941							
35	5634	5637	5612	5612	5584	5602	5589	5583	5619	5617	5634	5632							
40	5264	5263	5225	5222	5199	5222	5215	5198	5249	5239	5266	5256							
45	4827	4820	4785	4774	4750	4783	4767	4741	4799	4788	4826	4816							
50	4316	4318	4275	4283	4255	4274	4263	4224	4285	4274	4322	4309							
55	3768	3775	3719	3737	3695	3708	3694	3673	3719	3720	3771	3750							
60	3151	3161	3094	3114	3064	3087	3063	3041	3092	3091	3150	3116							
65	2496	2483	2405	2387	2352	2398	2389	2388	2411	2422	2469	2472							
70	1705	1690	1628	1619	1571	1585	1570	1586	1659	1684	1705	1676							
75	1000	1002	959	961	911	921	902	905	951	973	1005	995							
80	436	451	398	409	364	383	360	363	401	409	437	435							
85	100	98.0	82.7	79.5	74.3	77.3	81.8	81.5	94.0	91.9	107	107							
90	40.5	40.9	40.6	40.5	40.5	40.5	50.0	49.9	49.7	49.6	50.2	50.1							
95	45.8	45.9	46.3	46.4	46.8	46.7	55.0	54.9	54.6	54.5	54.2	54.3							
100	53.0	53.1	53.5	53.7	54.1	54.1	60.9	60.9	60.4	60.5	60.0	60.3							
105	61.0	61.1	61.6	61.8	62.2	62.2	68.0	67.9	67.4	67.3	66.9	67.2							
110	69.3	69.5	69.9	70.2	70.5	70.7	75.7	75.5	75.0	74.9	74.6	74.7							
115	77.3	77.5	77.9	78.2	78.6	78.8	83.6	83.3	82.9	82.7	82.3	82.5							
120	84.7	84.9	85.3	85.6	86.1	86.2	90.9	90.7	90.2	90.0	89.7	90.0							
125	91.9	92.2	92.5	92.8	93.3	93.4	97.7	97.3	96.9	96.7	96.5	96.7							
130	99.0	99.1	99.6	99.9	100	100	104	103	103	103	103	103							
135	106	106	107	107	108	108	109	109	108	108	108	108							
140	112	113	113	114	114	114	115	115	114	114	114	114							
145	119	120	120	120	121	121	121	120	120	119	119	119							
150	125	126	126	127	127	127	127	126	126	125	125	125							
155	132	132	133	133	133	133	133	132	132	131	131	131							
160	138	139	139	139	139	140	138	138	138	137	137	137							
165	144	145	145	145	145	146	144	143	144	143	143	143							
170	150	150	150	151	151	151	149	149	149	148	148	148							
175	153	154	153	154	154	154	153	152	152	152	152	152							
180	153	154	153	154	153	153	154	153	154	153	154	153							

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2019-05-27

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks: