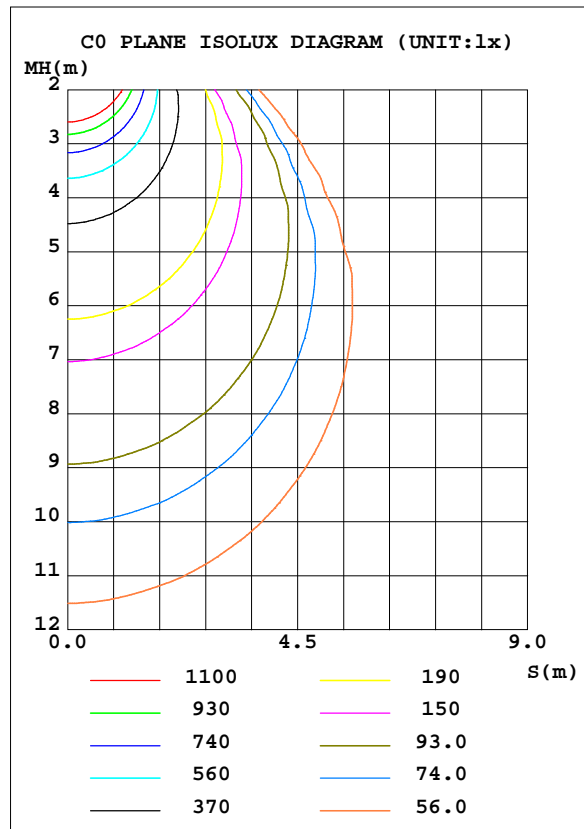
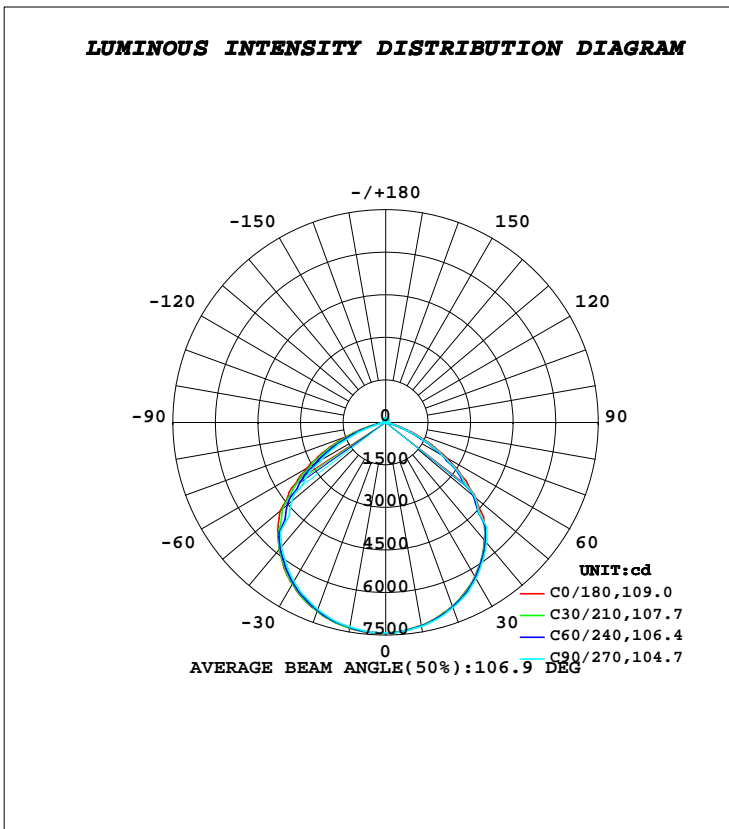


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:220.90V I:0.6960A P:150.10W PF:0.9750 Freq:50.00Hz Lamp Flux:19594.7x1 lm		
NAME: LN-FLHL150	TYPE:LED	
MFR.:		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 130.36 lm/W			
MODEL		I _{max} (cd)	7427	S/MH(C0/180)	1.26
NOMINAL POWER(W)	150	LOR(%)	99.9	S/MH(C90/270)	1.27
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	19567	η UP, DN(C0-180)	1.5,47.0
NOMINAL FLUX(lm)	19594.7	CIE CLASS	DIRECT	η UP, DN(C180-360)	1.5,49.8
LAMPS INSIDE	1	η up(%)	3.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	220	η down(%)	96.8	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2020-09-25

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.406.11
Humidity:65.0%
Test Distance:8.000m [K=0.7340]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

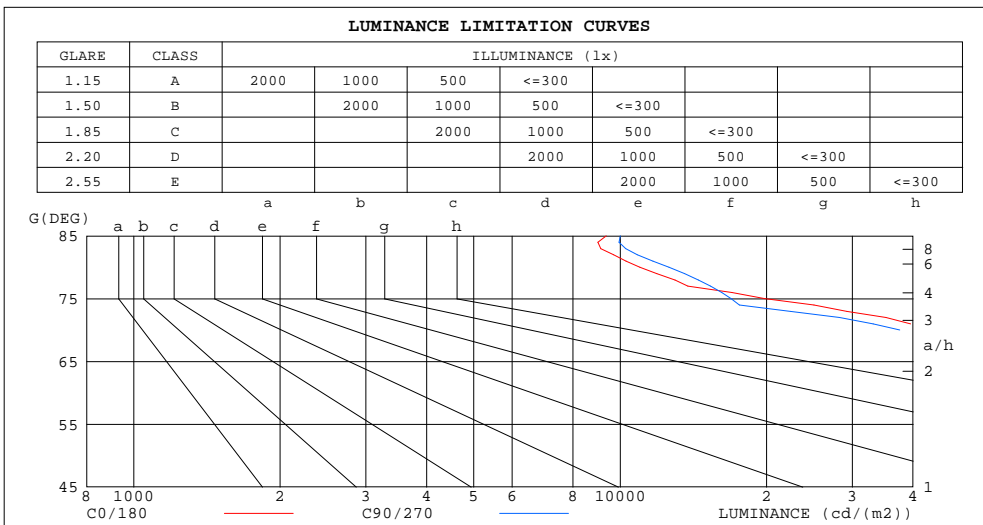
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	7262	7275	7296	7335	7364	7346	7313	7288	0- 10	703.1	703.1	3.59,3.59
20	6895	6908	6943	7020	7084	7064	7015	6961	10- 20	2027	2731	14,13.9
30	6287	6311	6366	6485	6582	6548	6470	6386	20- 30	3107	5838	29.8,29.8
40	5419	5455	5537	5711	5854	5814	5706	5577	30- 40	3789	9627	49.2,49.1
50	4159	4049	4115	4517	4861	4645	4325	4200	40- 50	3868	13495	69,68.9
60	2457	2268	2305	2761	3168	2943	2603	2483	50- 60	3105	16600	84.8,84.7
70	866.3	701.4	731.8	1121	1474	1315	1051	931.3	60- 70	1779	18379	93.9,93.8
80	108.6	106.2	124.7	183.1	233.9	219.9	185.1	149.8	70- 80	506.8	18886	96.5,96.4
90	42.50	38.86	39.35	47.17	54.72	53.49	49.74	46.35	80- 90	91.28	18977	97,96.8
100	58.57	55.40	54.49	57.40	60.67	60.78	60.04	59.40	90-100	55.86	19033	97.3,97.1
110	76.74	74.43	73.54	75.01	76.82	76.96	76.74	76.73	100-110	70.78	19104	97.6,97.5
120	92.99	91.67	91.19	92.12	93.21	93.18	92.92	92.92	110-120	83.55	19187	98.1,97.9
130	107.9	107.9	107.8	107.5	107.1	106.6	106.4	106.9	120-130	89.58	19277	98.5,98.4
140	122.6	123.0	122.7	121.0	119.0	117.6	117.2	119.1	130-140	88.00	19365	99,98.8
150	136.3	136.8	136.3	134.2	131.8	129.7	128.9	131.5	140-150	79.31	19444	99.4,99.2
160	149.3	150.4	150.3	148.4	146.1	143.9	142.8	145.0	150-160	64.64	19509	99.7,99.6
170	159.8	159.5	159.4	159.8	159.8	157.3	155.2	156.5	160-170	43.23	19552	99.9,99.8
180	158.6	158.0	158.0	158.9	159.5	158.2	156.9	157.3	170-180	15.17	19567	100,99.9
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2020-09-25

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.406.11
Humidity:65.0%
Test Distance:8.000m [K=0.7340]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:220.90V I:0.6960A P:150.10W PF:0.9750 Freq:50.00Hz Lamp Flux:19594.7x1 lm		
NAME: LN-FLHL150	TYPE:LED	
MFR.:		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	9363	10013
80	10970	12599
75	19805	16914
70	44436	37540
65	67847	58979
60	86220	80869
55	100038	98357
50	113517	112307
45	121740	120130

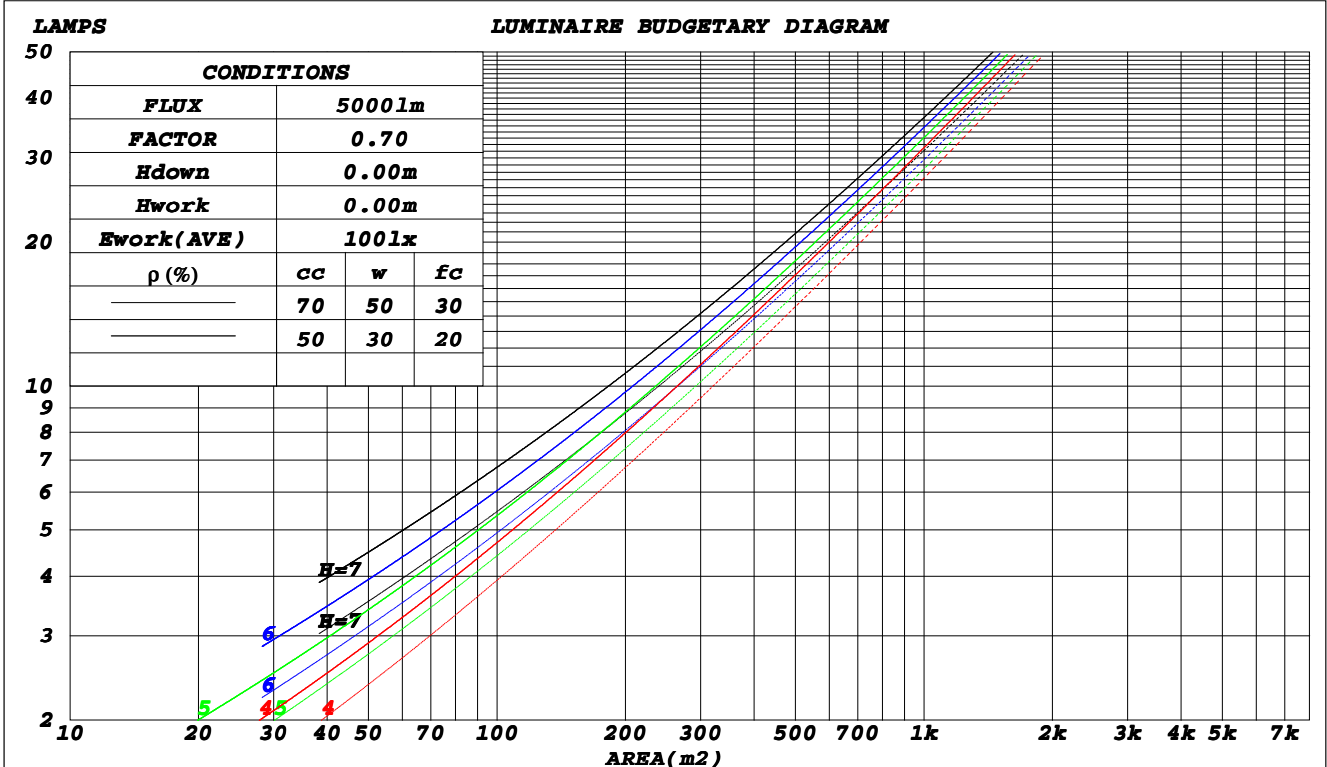
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2020-09-25

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.406.11
Humidity: 65.0%
Test Distance: 8.000m [K=0.7340]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.90V I:0.6960A P:150.10W PF:0.9750 Freq:50.00Hz Lamp Flux:19594.7x1 lm		
NAME: LN-FLHL150	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						Coefficients of Utilization(CU)									
0.0	1.18	1.18	1.18	1.15	1.15	1.15	1.09	1.09	1.09	1.04	1.04	1.04	.99	.99	.99	.97
1.0	1.05	1.02	.98	1.03	.99	.96	.98	.95	.93	.94	.92	.90	.90	.88	.86	.84
2.0	.93	.87	.82	.91	.85	.81	.87	.82	.78	.83	.80	.76	.80	.77	.74	.72
3.0	.83	.75	.69	.81	.74	.68	.77	.72	.67	.74	.69	.65	.71	.67	.64	.62
4.0	.74	.65	.59	.72	.64	.59	.69	.63	.57	.67	.61	.56	.64	.59	.55	.53
5.0	.66	.57	.51	.65	.57	.51	.62	.55	.50	.60	.54	.49	.58	.53	.48	.46
6.0	.59	.51	.45	.58	.50	.45	.56	.49	.44	.54	.48	.43	.53	.47	.43	.41
7.0	.54	.46	.40	.53	.45	.39	.51	.44	.39	.50	.43	.39	.48	.42	.38	.36
8.0	.49	.41	.35	.48	.41	.35	.47	.40	.35	.45	.39	.35	.44	.38	.34	.32
9.0	.45	.37	.32	.45	.37	.32	.43	.36	.31	.42	.36	.31	.41	.35	.31	.29
10.0	.42	.34	.29	.41	.34	.29	.40	.33	.29	.39	.33	.28	.38	.32	.28	.26



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2020-09-25

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.406.11
 Humidity: 65.0%
 Test Distance: 8.000m [K=0.7340]
 Remarks:

WEC AND CCEC

Test:U:220.90V I:0.6960A P:150.10W PF:0.9750 Freq:50.00Hz Lamp Flux:19594.7x1 lm		
NAME: LN-FLHL150	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	.265	.151	.048	.257	.147	.047	.242	.139	.044	.229	.132	.042	.216	.125	.040	
2.0	.258	.141	.043	.251	.138	.043	.238	.132	.041	.226	.127	.040	.215	.122	.038	
3.0	.244	.130	.039	.238	.127	.038	.226	.123	.037	.216	.118	.036	.206	.114	.035	
4.0	.229	.119	.035	.224	.117	.035	.213	.113	.034	.204	.110	.033	.195	.106	.032	
5.0	.215	.109	.032	.210	.108	.031	.201	.104	.031	.192	.101	.030	.184	.098	.030	
6.0	.201	.101	.029	.197	.099	.029	.188	.097	.028	.181	.094	.028	.174	.091	.027	
7.0	.189	.093	.026	.185	.092	.026	.177	.090	.026	.170	.087	.025	.164	.085	.025	
8.0	.177	.087	.024	.174	.086	.024	.167	.083	.024	.161	.081	.023	.155	.079	.023	
9.0	.167	.081	.023	.164	.080	.022	.158	.078	.022	.152	.076	.022	.147	.074	.022	
10.0	.158	.076	.021	.155	.075	.021	.149	.073	.021	.144	.071	.020	.139	.070	.020	

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																
1.0	.213	.213	.213	.182	.182	.182	.124	.124	.124	.071	.071	.071	.023	.023	.023	
2.0	.191	.155	.125	.163	.134	.108	.112	.092	.076	.065	.054	.044	.021	.017	.014	
3.0	.183	.137	.101	.157	.119	.088	.108	.082	.062	.062	.048	.036	.020	.016	.012	
4.0	.175	.124	.085	.150	.107	.074	.103	.075	.052	.060	.044	.031	.019	.014	.010	
5.0	.168	.113	.073	.145	.098	.063	.100	.069	.045	.058	.040	.027	.019	.013	.009	
6.0	.162	.105	.065	.139	.091	.056	.096	.064	.040	.056	.037	.024	.018	.012	.008	
7.0	.155	.098	.058	.134	.085	.051	.092	.060	.036	.054	.035	.021	.017	.012	.007	
8.0	.149	.092	.053	.128	.080	.047	.089	.056	.033	.052	.033	.020	.017	.011	.007	
9.0	.143	.088	.050	.124	.076	.043	.086	.053	.031	.050	.032	.018	.016	.010	.006	
10.0	.138	.083	.047	.119	.072	.041	.083	.051	.029	.048	.030	.017	.016	.010	.006	

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2020-09-25

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.406.11
 Humidity:65.0%
 Test Distance:8.000m [K=0.7340]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:220.90V I:0.6960A P:150.10W PF:0.9750 Freq:50.00Hz Lamp Flux:19594.7x1 lm		
NAME: LN-FLHL150	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	28.3	29.7	28.6	29.9	30.2	28.2	29.6	28.5	29.8	30.1
3H	28.8	30.0	29.1	30.3	30.6	28.5	29.8	28.9	30.1	30.4
4H	28.7	29.9	29.1	30.2	30.5	28.5	29.7	28.8	30.0	30.3
6H	28.7	29.8	29.0	30.1	30.4	28.4	29.5	28.8	29.9	30.2
8H	28.6	29.7	29.0	30.0	30.4	28.4	29.5	28.8	29.8	30.1
12H	28.6	29.6	28.9	29.9	30.3	28.3	29.4	28.7	29.7	30.1
4H 2H	28.5	29.7	28.9	30.0	30.3	28.4	29.6	28.8	29.9	30.2
3H	29.0	30.1	29.4	30.4	30.8	28.8	29.9	29.2	30.2	30.6
4H	29.0	29.9	29.4	30.3	30.7	28.8	29.7	29.2	30.1	30.5
6H	28.9	29.8	29.4	30.2	30.6	28.7	29.6	29.2	30.0	30.4
8H	28.9	29.7	29.4	30.1	30.5	28.7	29.5	29.1	29.9	30.3
12H	28.9	29.6	29.3	30.0	30.5	28.7	29.4	29.1	29.8	30.3
8H 4H	28.9	29.7	29.4	30.1	30.5	28.7	29.4	29.1	29.9	30.3
6H	28.9	29.5	29.3	29.9	30.4	28.7	29.3	29.1	29.7	30.2
8H	28.8	29.4	29.3	29.9	30.4	28.6	29.2	29.1	29.7	30.2
12H	28.8	29.3	29.3	29.8	30.3	28.6	29.1	29.1	29.6	30.1
12H 4H	28.9	29.6	29.3	30.0	30.5	28.6	29.3	29.1	29.8	30.2
6H	28.8	29.4	29.3	29.8	30.4	28.6	29.2	29.1	29.6	30.2
8H	28.8	29.3	29.3	29.8	30.3	28.6	29.1	29.1	29.6	30.1
Variations with the observer position at spacings:										
S = 1.0H	+ 0.5 / - 0.5					+ 0.5 / - 0.6				
1.5H	+ 0.3 / - 0.6					+ 0.3 / - 0.6				
2.0H	+ 1.0 / - 1.2					+ 1.0 / - 1.2				

CIE Pub.117, 19595 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = 10.3)

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2020-09-25

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.406.11
 Humidity:65.0%
 Test Distance:8.000m [K=0.7340]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:220.90V I:0.6960A P:150.10W PF:0.9750 Freq:50.00Hz Lamp Flux:19594.7x1 lm		
NAME: LN-FLHL150	TYPE:LED	
MFR.:		

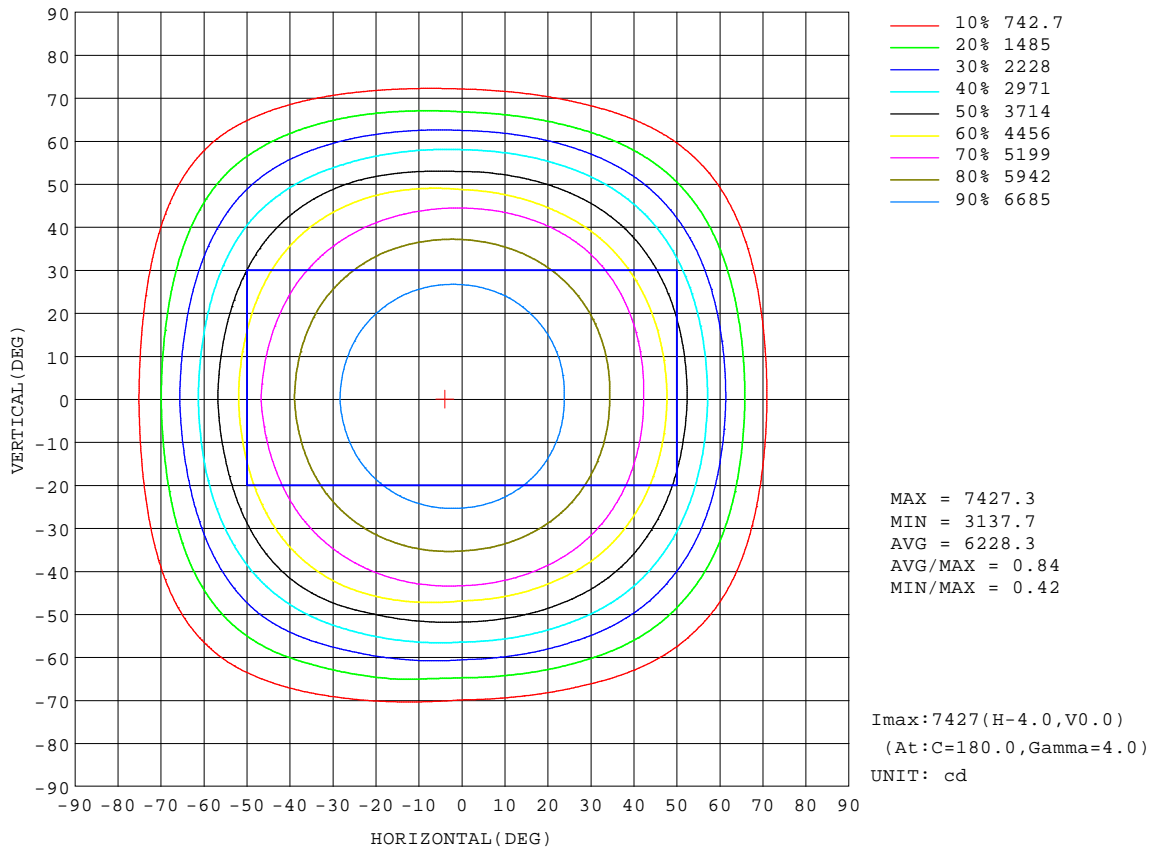
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	59	48	42	59	48	42	57	47	41	35
0.80	70	59	52	69	59	52	67	58	51	45
1.00	79	68	62	77	68	61	75	69	61	54
1.25	86	76	70	84	75	69	81	74	68	61
1.50	91	82	75	89	81	75	86	79	74	66
2.00	97	90	84	95	88	83	91	86	81	73
2.50	101	94	88	98	92	87	94	89	85	77
3.00	104	98	93	101	96	92	97	93	89	80
4.00	107	102	98	105	100	96	100	96	93	84
5.00	109	105	101	107	103	100	102	99	96	86
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:2020-09-25

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.406.11
Humidity:65.0%
Test Distance:8.000m [K=0.7340]
Remarks:

ISOCANDELA DIAGRAM

Test:U:220.90V I:0.6960A P:150.10W PF:0.9750 Freq:50.00Hz Lamp Flux:19594.7x1 lm		
NAME: LN-FLHL150	TYPE:LED	
MFR.:		



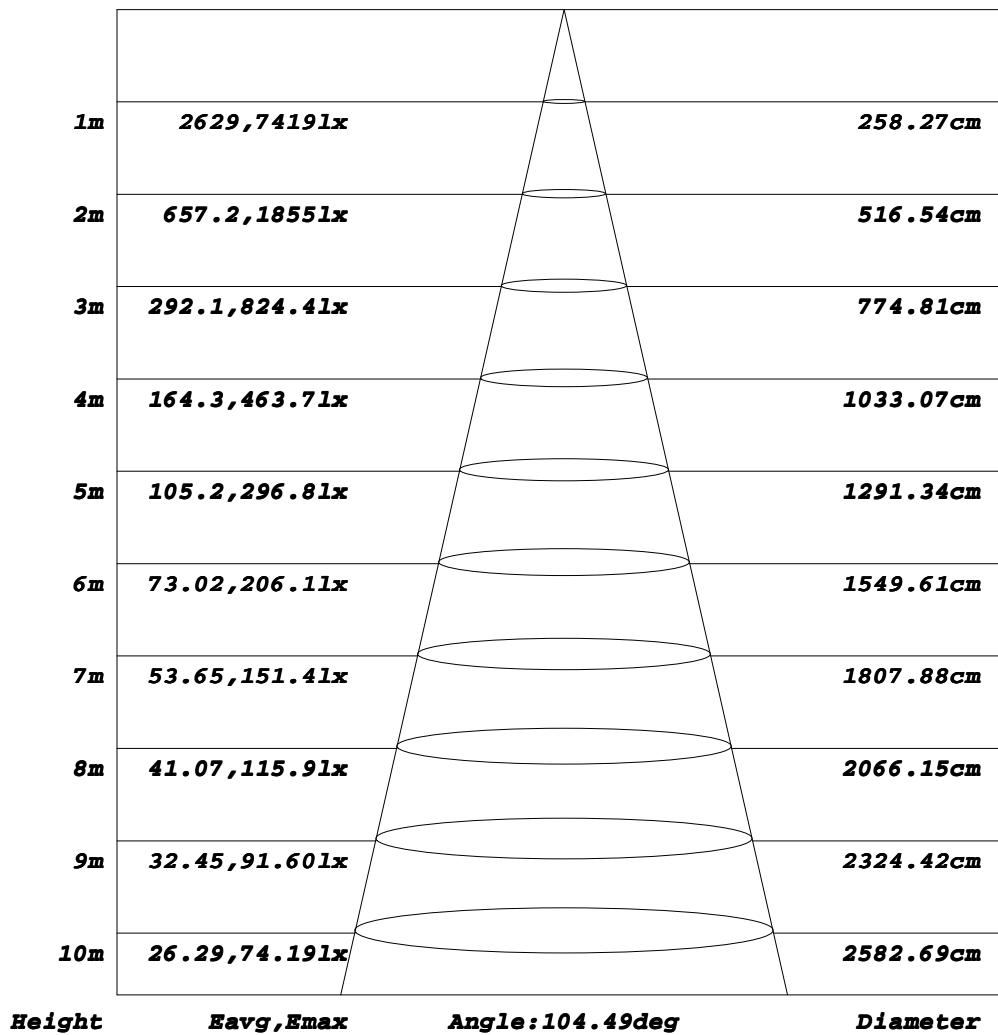
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2020-09-25

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.406.11
Humidity: 65.0%
Test Distance: 8.000m [K=0.7340]
Remarks:

AAI Figure

Test:U:220.90V I:0.6960A P:150.10W PF:0.9750 Freq:50.00Hz Lamp Flux:19594.7x1 lm		
NAME: LN-FLHL150	TYPE:LED	
MFR.:		

Flux out:14544 lm



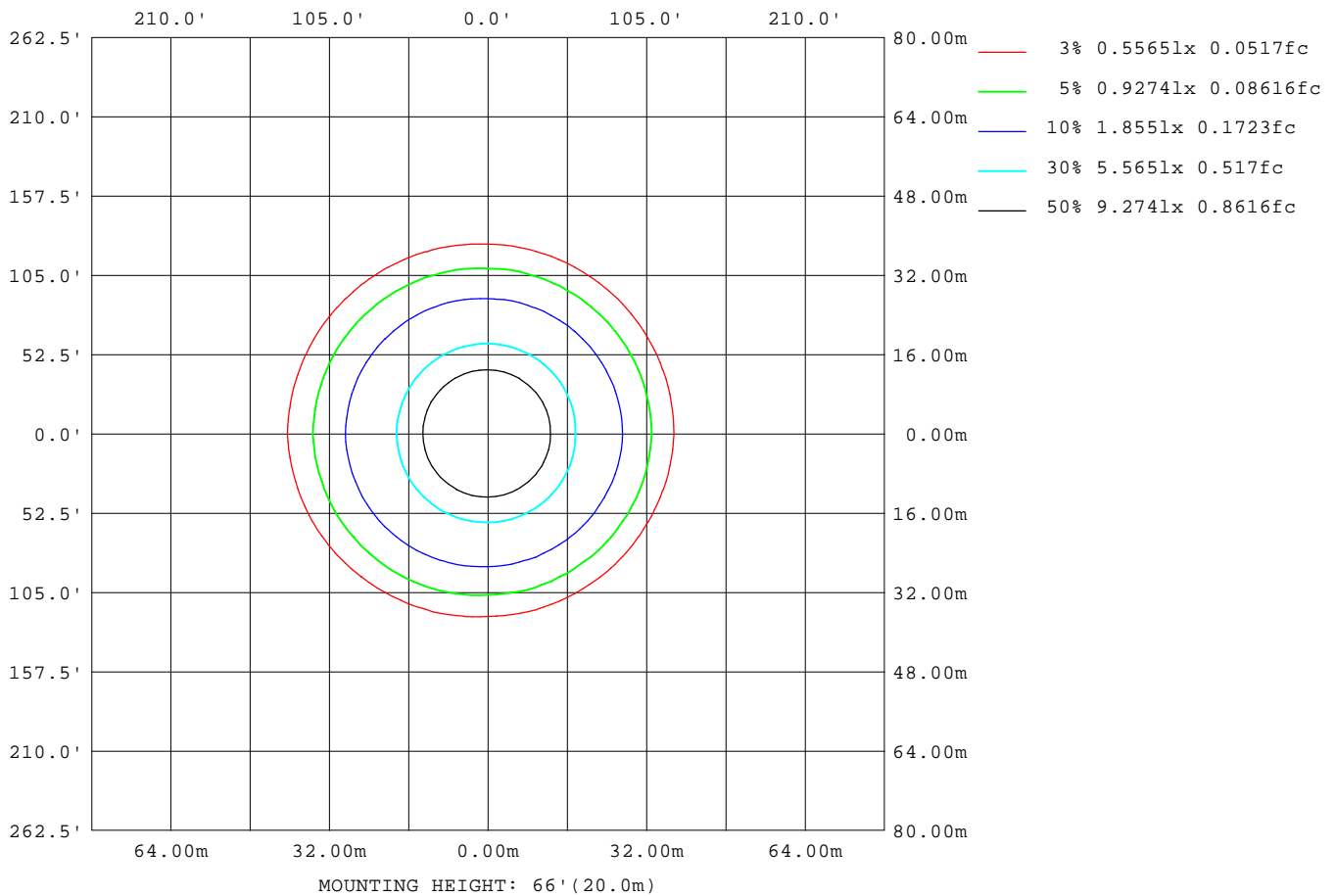
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2020-09-25

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.406.11
 Humidity: 65.0%
 Test Distance: 8.000m [K=0.7340]
 Remarks:

ISOLUX DIAGRAM

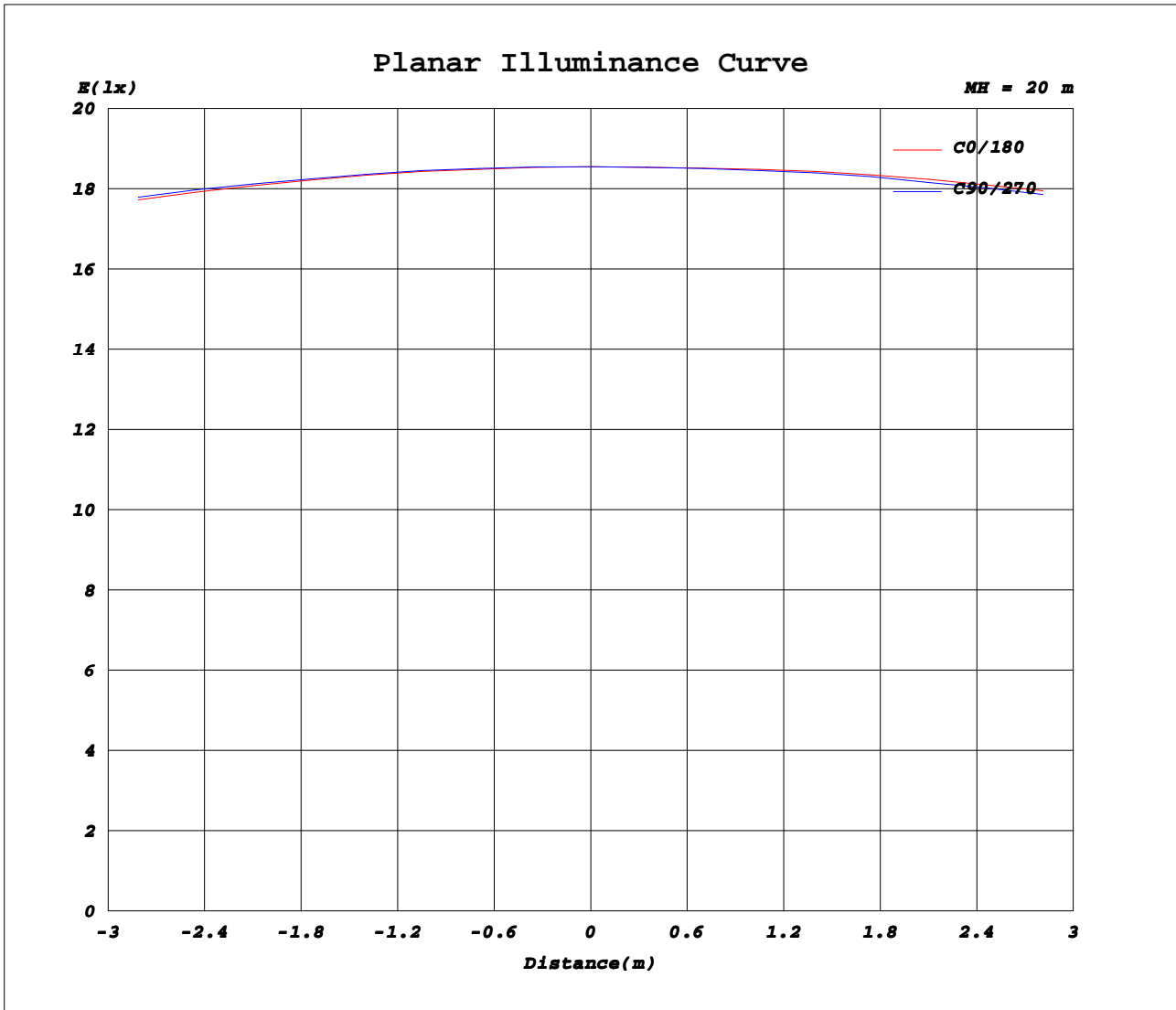
Test:U:220.90V I:0.6960A P:150.10W PF:0.9750 Freq:50.00Hz Lamp Flux:19594.7x1 lm		
NAME: LN-FLHL150	TYPE:LED	
MFR.:		



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2020-09-25

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.406.11
Humidity: 65.0%
Test Distance: 8.000m [K=0.7340]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2020-09-25

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.406.11
Humidity: 65.0%
Test Distance: 8.000m [K=0.7340]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:220.90V I:0.6960A P:150.10W PF:0.9750 Freq:50.00Hz Lamp Flux:19594.7x1 lm		
NAME: LN-FLHL150	TYPE:LED	
MFR.:		

Table--1

UNIT: cd

C(DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330							
0	7419	7419	7419	7419	7419	7419	7419	7419	7419	7419	7419	7419							
5	7371	7370	7374	7381	7396	7412	7424	7422	7416	7405	7396	7384							
10	7262	7270	7281	7296	7323	7347	7364	7355	7336	7313	7296	7279							
15	7100	7112	7129	7153	7194	7232	7260	7251	7228	7196	7167	7135							
20	6895	6900	6916	6943	6995	7045	7084	7077	7052	7015	6981	6940							
25	6609	6632	6663	6704	6771	6834	6877	6859	6817	6762	6715	6664							
30	6287	6297	6324	6366	6446	6524	6582	6569	6528	6470	6416	6355							
35	5889	5889	5914	5963	6069	6174	6253	6232	6176	6098	6034	5964							
40	5419	5436	5475	5537	5654	5767	5854	5840	5787	5706	5625	5529							
45	4907	4818	4796	4842	5030	5227	5379	5299	5161	5009	4944	4910							
50	4159	4056	4041	4115	4380	4654	4861	4744	4545	4325	4228	4173							
55	3271	3153	3135	3216	3511	3818	4049	3915	3690	3442	3336	3279							
60	2457	2294	2242	2305	2602	2920	3168	3048	2837	2603	2507	2459							
65	1634	1440	1369	1421	1718	2046	2313	2233	2062	1856	1756	1682							
70	866	724	679	732	984	1257	1474	1394	1236	1051	962	901							
75	292	217	202	250	429	616	757	676	539	389	326	294							
80	109	104	109	125	163	203	234	229	211	185	163	137							
85	46.5	41.4	42.5	49.7	70.1	91.3	108	106	97.6	84.7	73.5	60.8							
90	42.5	39.4	38.3	39.3	44.4	50.0	54.7	54.4	52.6	49.7	47.6	45.1							
95	50.0	47.5	46.2	46.3	48.7	51.6	54.2	54.5	54.1	53.2	52.3	51.3							
100	58.6	56.1	54.7	54.5	56.3	58.5	60.7	60.9	60.6	60.0	59.6	59.2							
105	67.9	65.6	64.3	63.9	65.1	66.8	68.4	68.7	68.5	68.2	68.1	68.0							
110	76.7	75.0	73.9	73.5	74.4	75.6	76.8	77.0	76.9	76.7	76.7	76.7							
115	85.1	83.6	82.7	82.4	83.2	84.3	85.3	85.4	85.2	85.0	85.0	85.0							
120	93.0	92.0	91.4	91.2	91.7	92.5	93.2	93.2	93.1	92.9	92.9	92.9							
125	100	99.7	99.4	99.4	99.8	100	101	101	100	100	100	100							
130	108	108	108	108	108	107	107	107	106	106	107	107							
135	115	116	116	116	115	114	113	112	112	112	113	114							
140	123	123	123	123	122	120	119	118	117	117	118	120							
145	129	130	130	129	128	127	125	124	123	123	124	126							
150	136	137	137	136	135	133	132	130	129	129	130	133							
155	143	144	144	143	142	140	139	137	136	136	137	140							
160	149	150	151	150	149	148	146	144	143	143	144	146							
165	155	156	156	156	155	154	153	151	150	149	150	152							
170	160	160	159	159	160	160	160	158	156	155	156	157							
175	158	158	158	158	159	161	161	161	159	158	158	158							
180	159	158	158	158	159	159	160	159	158	157	157	158							

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2020-09-25

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.406.11
Humidity:65.0%
Test Distance:8.000m [K=0.7340]
Remarks: