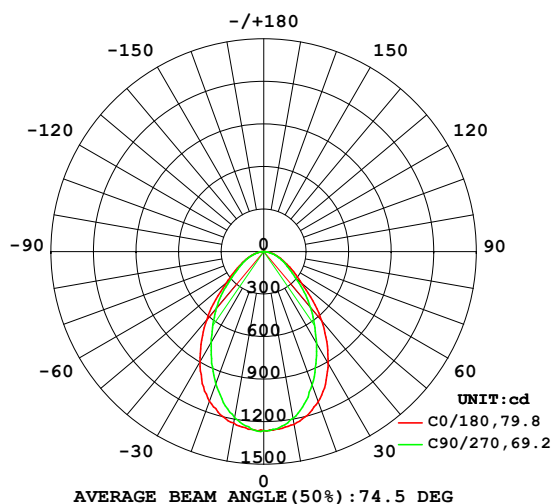


LUMINAIRE PHOTOMETRIC TEST REPORT

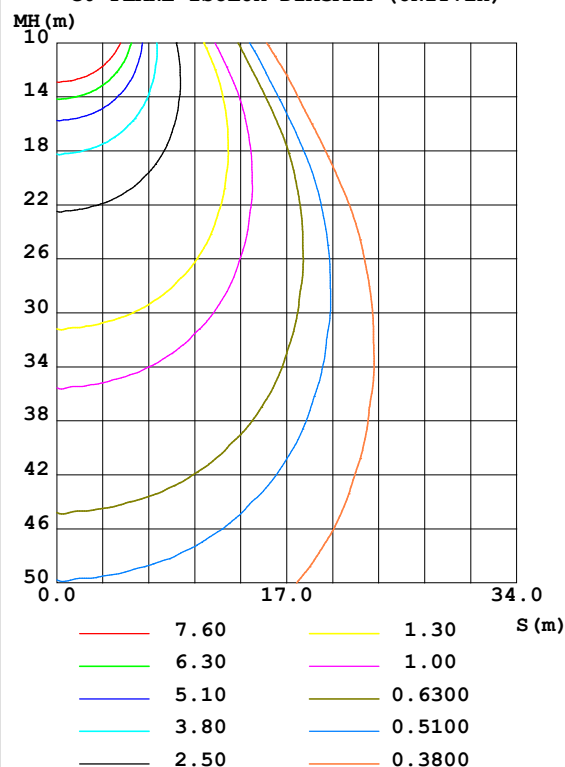
Test:U:239.9V I:0.1090A P:23.11W PF:0.8835 Lamp Flux:2099.57x1 lm		
NAME: HIP_1160_NA_WHT_C-DG_HE_150mA_TUNABLE @ 4000KTYPE:LED		WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 90.85 lm/W			
MODEL: LLE 24x5600DEI2200lm 927-965 LV PRE3		Imax(cd)	1272	S/MH(C0/180)	1.09
NOMINAL POWER(W)		LOR(%)	100.0	S/MH(C90/270)	0.95
RATED VOLTAGE(V)	230.0	TOTAL FLUX(lm)	2099.6	η UP,DN(C0-180)	0.0,50.1
NOMINAL FLUX(lm)	2099.57	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,49.9
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.00
TEST VOLTAGE(V)	230	η down(%)	100.0	CIBSE SHR MAX	1.15

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:13 February 2023

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.995m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	1237	1216	1194	1213	1228	1214	1190	1205	0- 10	118.2	118.2	5.63,5.63
20	1126	1055	1001	1055	1121	1050	989.8	1044	10- 20	321.2	439.4	20.9,20.9
30	908.8	814.6	744.4	815.5	900.9	809.0	741.7	804.2	20- 30	431.7	871.1	41.5,41.5
40	636.1	570.9	512.4	569.5	624.5	571.5	520.7	566.4	30- 40	431.9	1303	62.1,62.1
50	352.2	328.9	299.8	331.4	343.0	334.2	303.8	330.6	40- 50	342.8	1646	78.4,78.4
60	200.4	185.8	178.4	184.8	194.1	187.9	182.1	187.9	50- 60	223.8	1870	89.1,89.1
70	109.0	105.1	101.8	103.3	106.1	105.5	101.7	105.8	60- 70	142.4	2012	95.8,95.8
80	36.99	35.18	34.61	34.15	34.49	35.75	36.09	36.17	70- 80	72.73	2085	99.3,99.3
90	0.7423	0.5925	0.4662	0.4135	0.3784	0.6254	0.7758	0.8198	80- 90	14.82	2100	100,100
100									90-100			
110									100-110			
120									110-120			
130									120-130			
140									130-140			
150									140-150			
160									150-160			
170									160-170			
180									170-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 1491.3 lm

%lum = 71.0%

%lamp = 71.0%

Conical surface Flux(120deg): 1869.7 lm

%lum = 89.1%

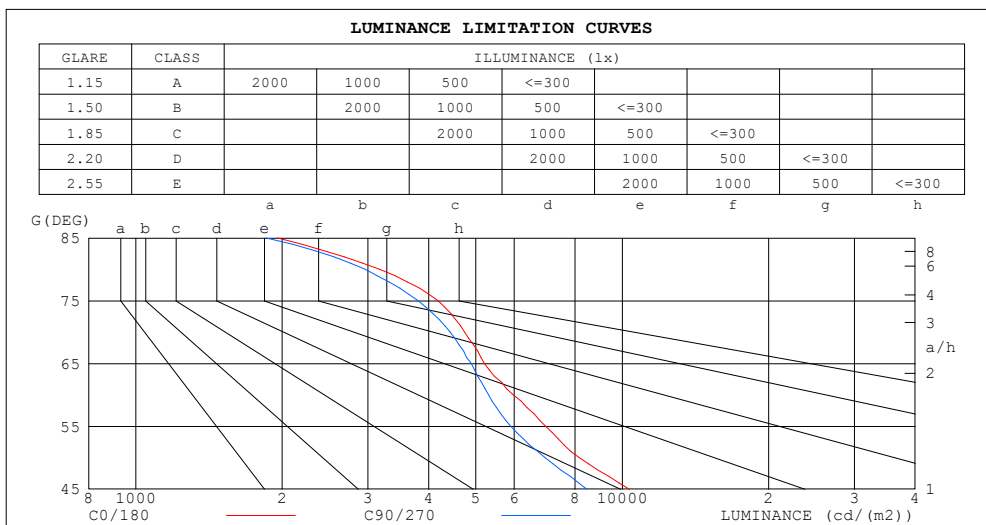
%lamp = 89.1%

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:13 February 2023

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.995m [K=1.0000]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:239.9V I:0.1090A P:23.11W PF:0.8835 Lamp Flux:2099.57x1 lm		
NAME: HIP_1160_NA_WHT_C-DG_HE_150mA_TUNABLE @ 4000KTYPE:LED	WEIGHT:	
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	1956	1853
80	3171	2964
75	4181	3804
70	4744	4427
65	5207	4894
60	5968	5308
55	6959	5897
50	8158	6938
45	10343	8458

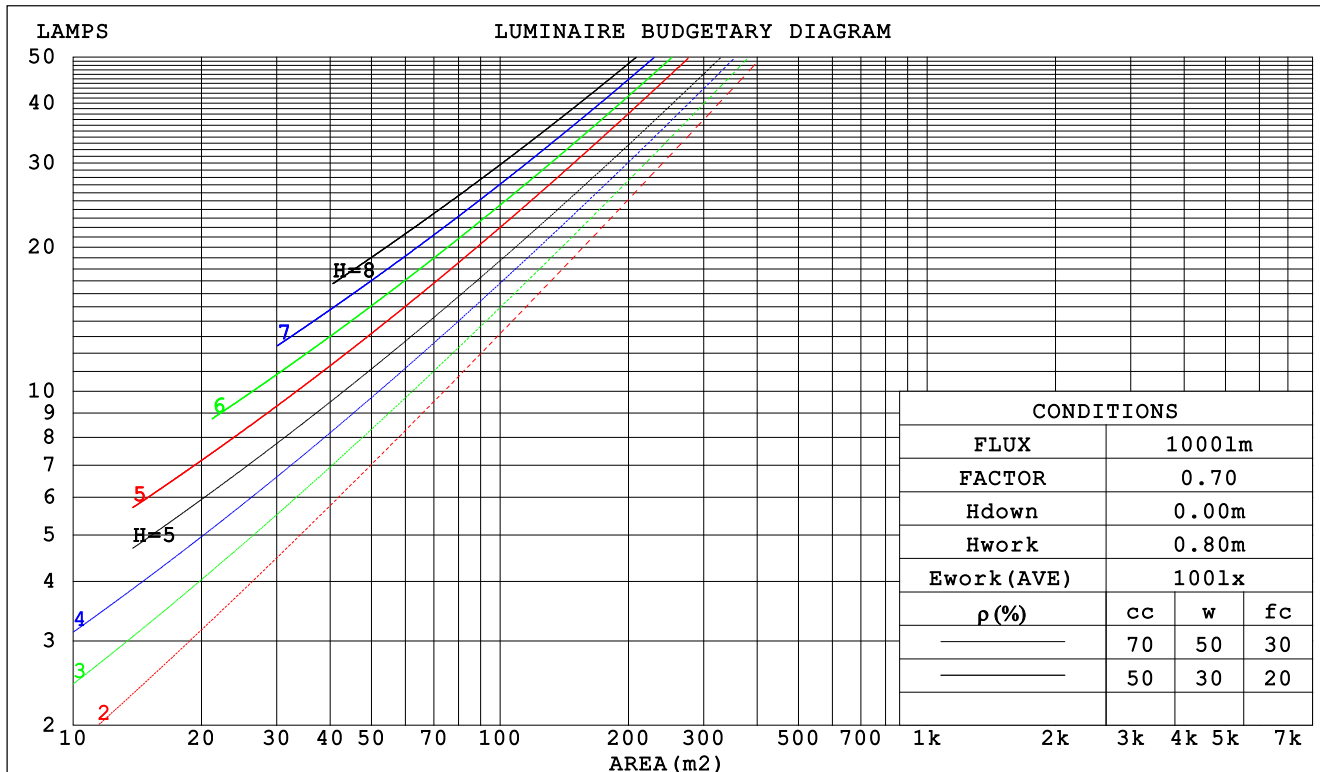
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:13 February 2023

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.995m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:239.9V I:0.1090A P:23.11W PF:0.8835 Lamp Flux:2099.57x1 lm		
NAME: HIP_1160_NA_WHT_C-DG_HE_150mA_TUNABLE @ 4000KTYPE:LED		WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:

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	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
1.0	1.07	1.03	1.00	1.05	1.02	.99	1.01	.98	.96	.97	.95	.93	.93	.92	.90	.88
2.0	.96	.90	.85	.94	.89	.84	.91	.86	.82	.87	.84	.81	.84	.81	.79	.77
3.0	.86	.79	.74	.85	.78	.73	.82	.76	.72	.79	.75	.71	.77	.73	.70	.68
4.0	.78	.70	.65	.77	.70	.64	.74	.68	.63	.72	.67	.63	.70	.66	.62	.60
5.0	.71	.63	.57	.70	.63	.57	.68	.61	.56	.66	.60	.56	.64	.59	.55	.53
6.0	.65	.57	.51	.64	.57	.51	.62	.56	.51	.61	.55	.50	.59	.54	.50	.48
7.0	.60	.52	.46	.59	.51	.46	.57	.51	.46	.56	.50	.46	.55	.49	.45	.44
8.0	.55	.47	.42	.54	.47	.42	.53	.47	.42	.52	.46	.42	.51	.45	.41	.40
9.0	.51	.44	.39	.51	.43	.39	.49	.43	.38	.48	.42	.38	.47	.42	.38	.36
10.0	.48	.40	.36	.47	.40	.36	.46	.40	.35	.45	.39	.35	.44	.39	.35	.34



C Range: 0 - 360DEG

C Interval: 22.5DEG

Test Speed: HIGH

Temperature:25.3DEG

Operators:JEFF

Test Date:13 February 2023

γ Range: 0 - 90DEG

γ Interval: 1.0DEG

Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295

Humidity:65.0%

Test Distance:7.995m [K=1.0000]

Remarks:

WEC AND CCEC

Test:U:239.9V I:0.1090A P:23.11W PF:0.8835 Lamp Flux:2099.57x1 lm		
NAME: HIP_1160_NA_WHT_C-DG_HE_150mA_TUNABLE @ 4000KTYPE:LED		WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:

pcc	80%			70%			50%			30%			10%			0	
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
pfc	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients (WEC)										
0.0																	
1.0	.251	.143	.045	.244	.139	.044	.231	.133	.042	.219	.126	.041	.208	.121	.039		
2.0	.241	.132	.040	.235	.129	.040	.223	.124	.039	.213	.120	.037	.203	.115	.036		
3.0	.226	.121	.036	.221	.118	.036	.211	.115	.035	.202	.111	.034	.194	.107	.033		
4.0	.212	.110	.032	.208	.109	.032	.199	.106	.032	.191	.103	.031	.183	.100	.030		
5.0	.199	.101	.029	.195	.100	.029	.187	.097	.029	.180	.095	.028	.173	.093	.028		
6.0	.187	.094	.027	.183	.092	.027	.176	.090	.026	.170	.088	.026	.164	.086	.026		
7.0	.175	.087	.025	.172	.086	.024	.166	.084	.024	.161	.082	.024	.155	.081	.024		
8.0	.165	.081	.023	.163	.080	.023	.157	.079	.022	.152	.077	.022	.147	.076	.022		
9.0	.156	.076	.021	.154	.075	.021	.149	.074	.021	.144	.072	.021	.140	.071	.021		
10.0	.148	.071	.020	.146	.070	.020	.141	.069	.019	.137	.068	.019	.133	.067	.019		

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients (CCEC)									
0.0	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.176	.157	.139	.151	.134	.120	.103	.092	.083	.059	.054	.048	.019	.017	.016	
2.0	.165	.132	.104	.142	.114	.090	.097	.079	.063	.056	.046	.037	.018	.015	.012	
3.0	.156	.114	.080	.134	.098	.070	.092	.068	.049	.053	.040	.029	.017	.013	.009	
4.0	.148	.100	.064	.127	.087	.055	.087	.060	.039	.050	.035	.023	.016	.012	.008	
5.0	.140	.089	.052	.120	.077	.045	.083	.054	.032	.048	.032	.019	.015	.010	.006	
6.0	.133	.081	.043	.114	.070	.037	.079	.049	.027	.046	.029	.016	.015	.009	.005	
7.0	.127	.074	.036	.109	.064	.032	.075	.045	.022	.044	.026	.013	.014	.009	.004	
8.0	.121	.068	.031	.104	.059	.027	.072	.041	.019	.042	.024	.012	.014	.008	.004	
9.0	.115	.063	.027	.099	.054	.024	.069	.038	.017	.040	.023	.010	.013	.007	.003	
10.0	.110	.058	.024	.095	.051	.021	.066	.036	.015	.038	.021	.009	.012	.007	.003	

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:13 February 2023

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.995m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:239.9V I:0.1090A P:23.11W PF:0.8835 Lamp Flux:2099.57x1 lm										
NAME: HIP_1160_NA_WHT_C-DG_HE_150mA_TUNABLE @ 4000KTYPE:LED								WEIGHT:		
SPEC.:				DIM.:				SERIAL No.:1		
MFR.: DARKON				SUR.:				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	18.8	20.1	19.1	20.3	20.5	18.1	19.4	18.4	19.6	19.8
3H	19.7	20.9	19.9	21.1	21.3	19.1	20.3	19.3	20.5	20.7
4H	20.0	21.1	20.3	21.4	21.6	19.4	20.5	19.7	20.8	21.0
6H	20.2	21.2	20.5	21.5	21.8	19.6	20.7	19.9	20.9	21.2
8H	20.2	21.2	20.5	21.5	21.8	19.6	20.7	20.0	20.9	21.2
12H	20.2	21.2	20.5	21.5	21.8	19.6	20.6	20.0	20.9	21.2
4H 2H	19.1	20.2	19.4	20.5	20.7	18.5	19.6	18.8	19.9	20.1
3H	20.1	21.1	20.5	21.4	21.7	19.6	20.6	20.0	20.9	21.2
4H	20.6	21.5	20.9	21.8	22.1	20.1	21.0	20.5	21.3	21.6
6H	20.9	21.6	21.2	22.0	22.3	20.4	21.2	20.8	21.5	21.9
8H	20.9	21.6	21.3	22.0	22.4	20.5	21.2	20.9	21.6	21.9
12H	20.9	21.6	21.3	22.0	22.4	20.5	21.2	20.9	21.5	21.9
8H 4H	20.7	21.4	21.1	21.8	22.2	20.3	21.0	20.7	21.4	21.7
6H	21.1	21.7	21.5	22.1	22.5	20.6	21.3	21.1	21.7	22.1
8H	21.2	21.7	21.6	22.1	22.6	20.8	21.3	21.2	21.7	22.2
12H	21.2	21.7	21.7	22.1	22.6	20.8	21.3	21.3	21.7	22.2
12H 4H	20.7	21.3	21.1	21.7	22.1	20.2	20.9	20.7	21.3	21.7
6H	21.1	21.6	21.5	22.0	22.5	20.7	21.2	21.1	21.6	22.1
8H	21.2	21.6	21.6	22.1	22.6	20.8	21.2	21.3	21.7	22.2
Variations with the observer position at spacings:										
S = 1.0H	+ 0.5 / - 0.6					+ 0.5 / - 0.6				
1.5H	+ 0.4 / - 0.3					+ 0.3 / - 0.5				
2.0H	+ 1.1 / - 0.7					+ 0.8 / - 0.6				

CIE Pub.117 Corrected 2100 lm Total Lamp Luminous Flux. (8log(F/F0) = 2.6)

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:13 February 2023

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.995m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:239.9V I:0.1090A P:23.11W PF:0.8835 Lamp Flux:2099.57x1 lm		
NAME: HIP_1160_NA_WHT_C-DG_HE_150mA_TUNABLE @ 4000KTYPE:LED	WEIGHT:	
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:

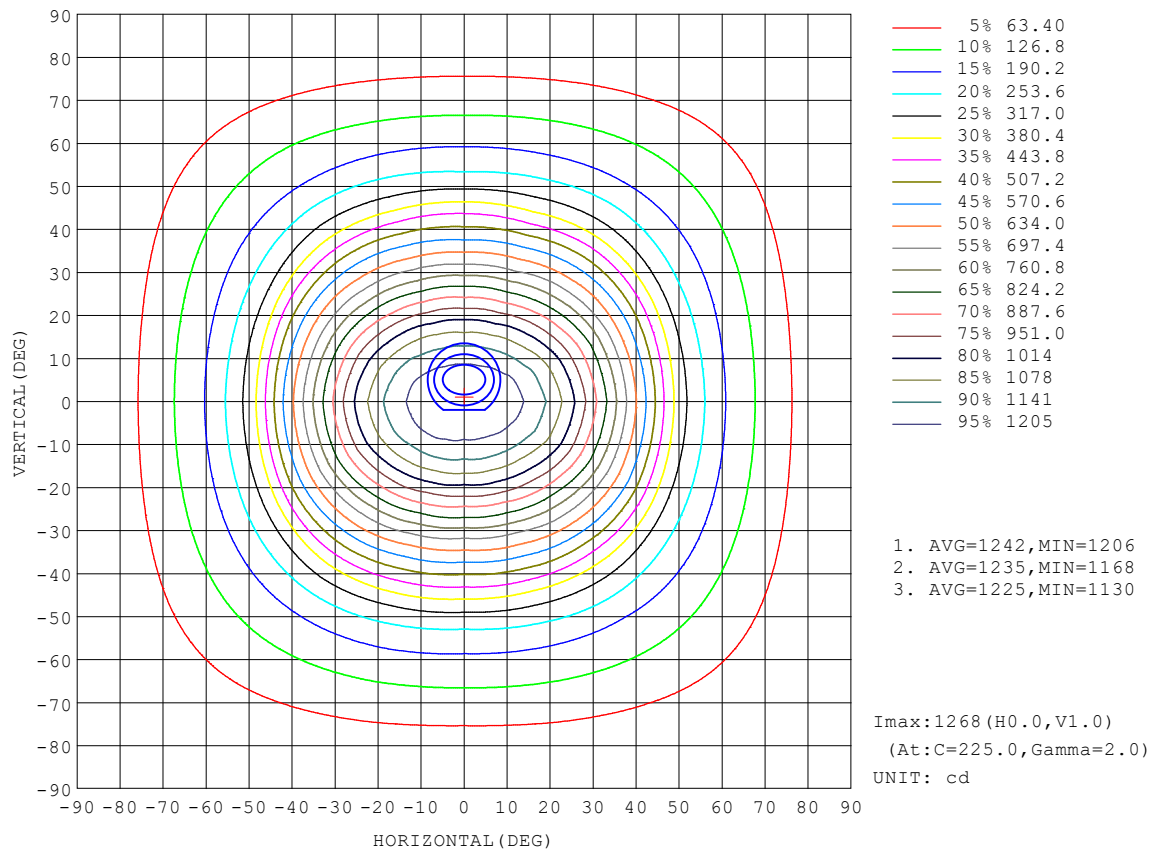
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	68	58	52	67	58	52	66	57	52	47
0.80	77	68	62	77	68	62	75	67	61	56
1.00	85	76	70	84	75	70	82	76	69	63
1.25	91	83	77	90	82	77	87	81	76	70
1.50	95	87	82	94	87	81	91	85	80	74
2.00	101	94	89	99	93	88	96	91	87	80
2.50	104	97	93	102	96	92	98	94	90	83
3.00	106	101	96	104	99	95	100	97	93	86
4.00	109	105	101	107	103	100	103	100	97	89
5.00	111	107	104	109	106	103	105	102	100	91
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:13 February 2023

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.995m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:239.9V I:0.1090A P:23.11W PF:0.8835 Lamp Flux:2099.57x1 lm		
NAME: HIP_1160_NA_WHT_C-DG_HE_150mA_TUNABLE @ 4000KTYPE:LED	WEIGHT:	
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:

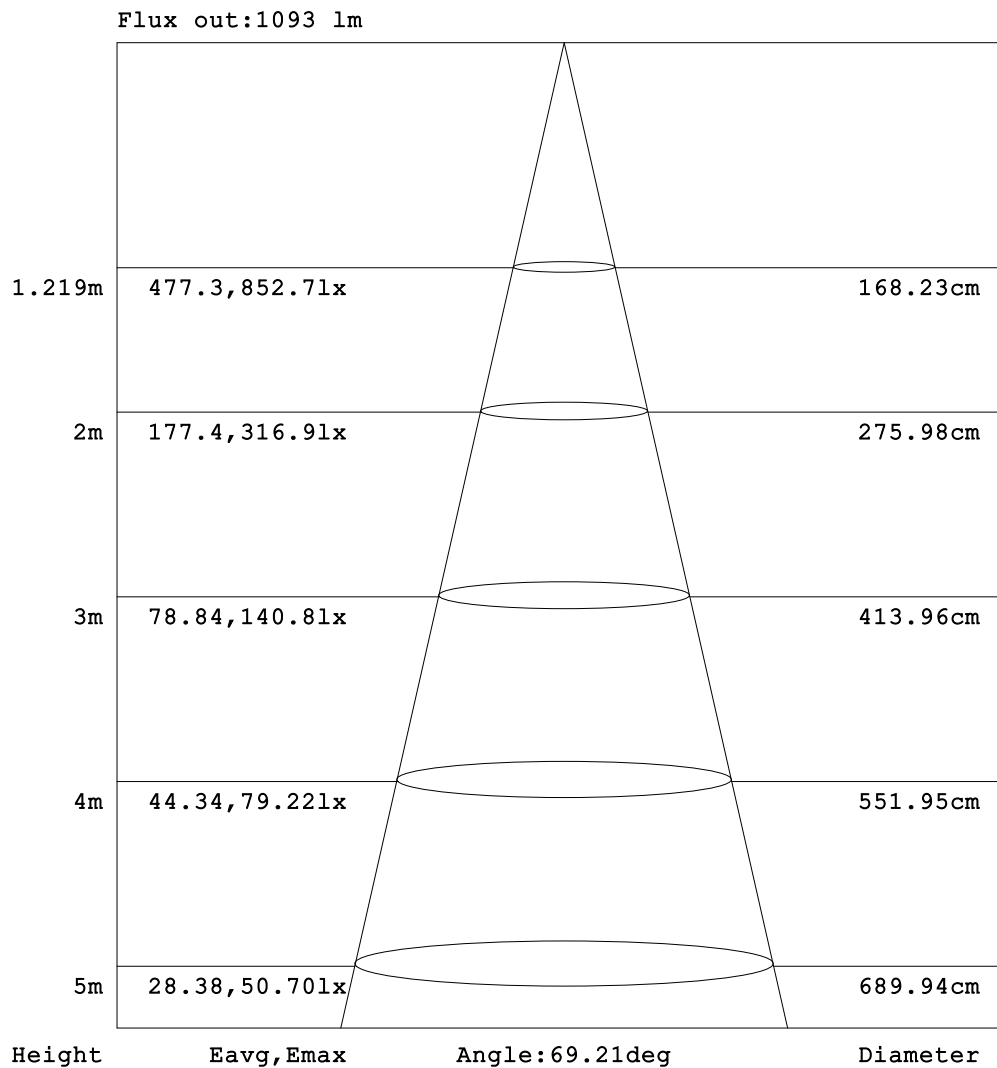


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:13 February 2023

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.995m [K=1.0000]
Remarks:

AAI Figure

Test:U:239.9V I:0.1090A P:23.11W PF:0.8835 Lamp Flux:2099.57x1 lm		
NAME: HIP_1160_NA_WHT_C-DG_HE_150mA_TUNABLE @ 4000KTYPE:LED	WEIGHT:	
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:



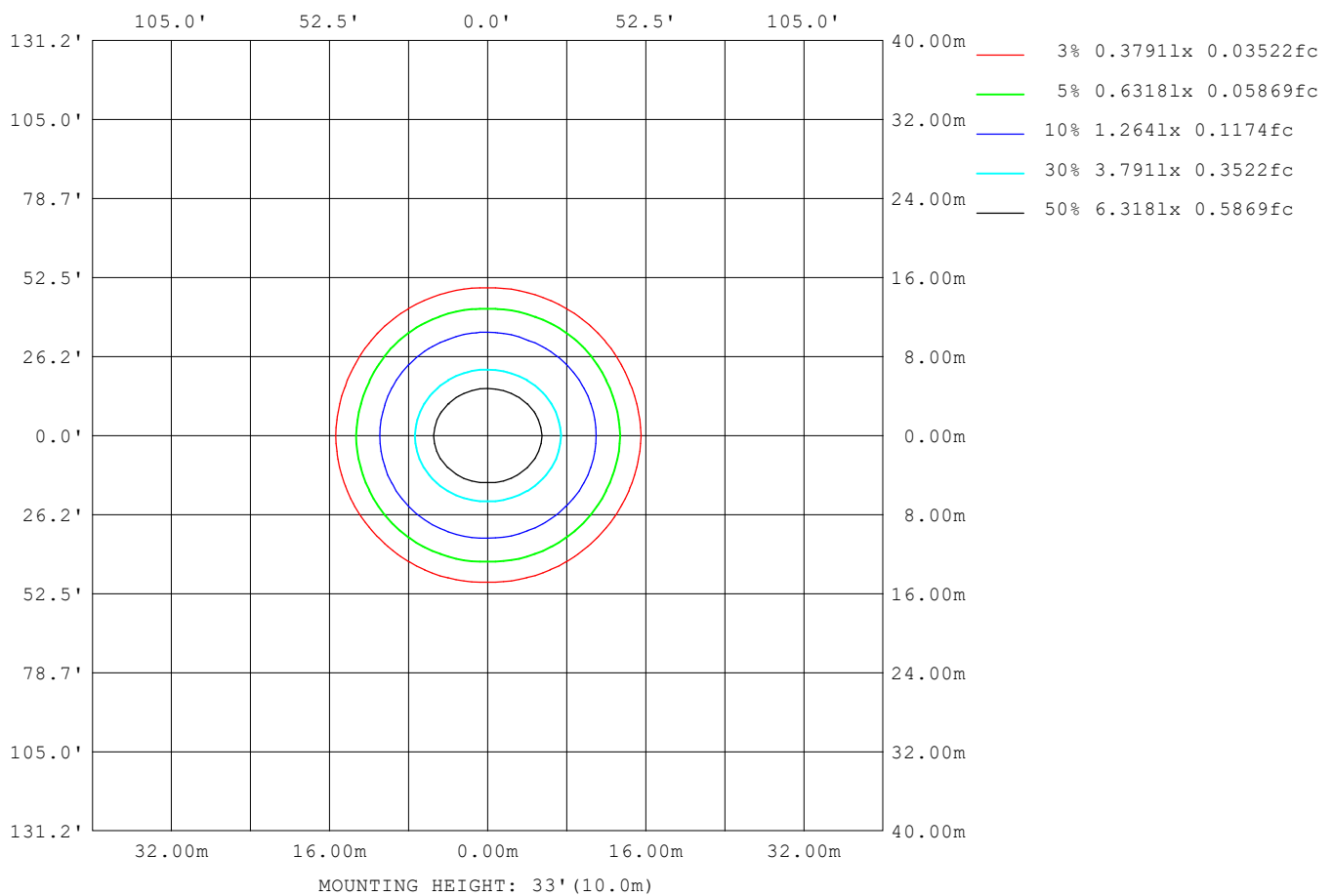
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:13 February 2023

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.995m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

Test:U:239.9V I:0.1090A P:23.11W PF:0.8835 Lamp Flux:2099.57x1 lm		
NAME: HIP_1160_NA_WHT_C-DG_HE_150mA_TUNABLE @ 4000KTYPE:LED	WEIGHT:	
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:13 February 2023

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.995m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:239.9V I:0.1090A P:23.11W PF:0.8835 Lamp Flux:2099.57x1 lm		
NAME: HIP_1160_NA_WHT_C-DG_HE_150mA_TUNABLE @ 4000KTYPE:LED	WEIGHT:	
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:

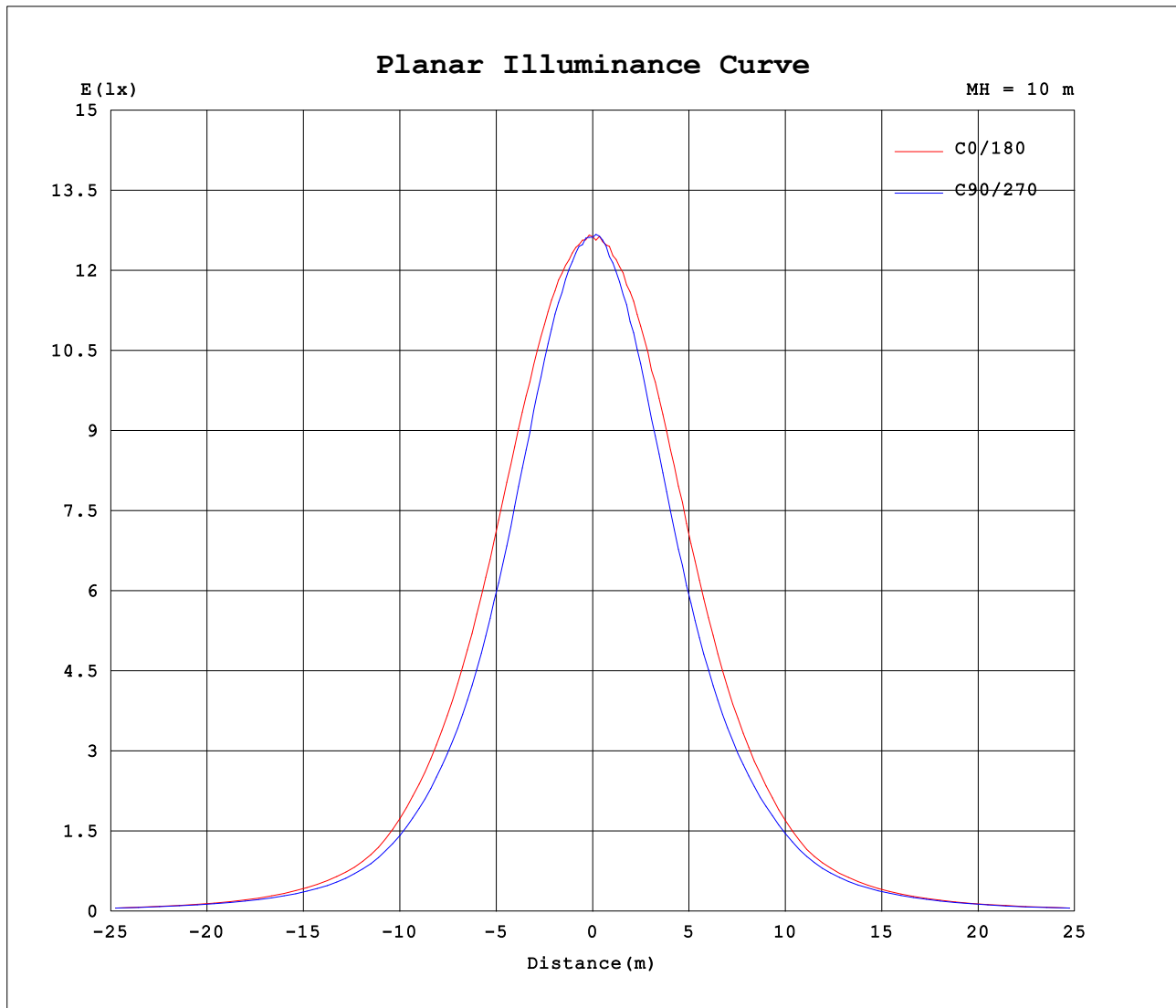
AvgL	cd/m2
L_0~180 (65) av	5178
L_0~180 (75) av	4076
L_0~180 (85) av	1836
L_90~270 (65) av	4871
L_90~270 (75) av	3830
L_90~270 (85) av	2003
L_45 (65) av	5010
L_45 (75) av	3897
L_45 (85) av	1959

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:13 February 2023

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.995m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: JEFF
Test Date: 13 February 2023

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 7.995m [K=1.0000]
Remarks:

