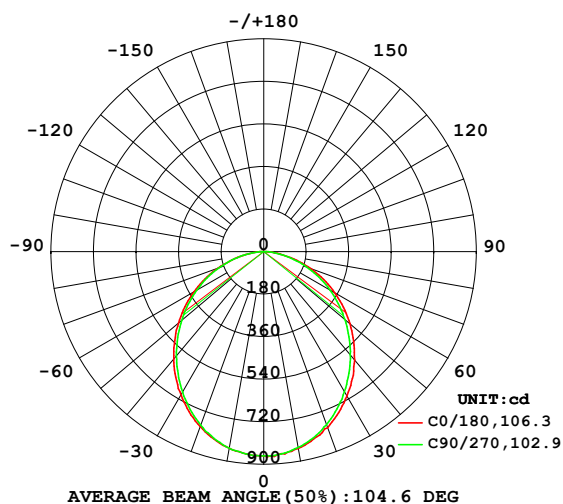


LUMINAIRE PHOTOMETRIC TEST REPORT

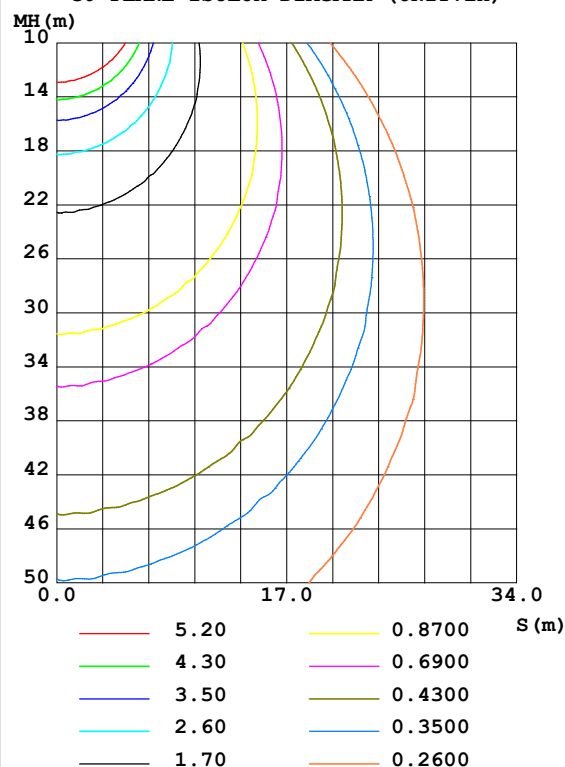
Test:U:239.9V I:0.1091A P:23.11W PF:0.8827 Lamp Flux:2265.36x1 lm		
NAME: HIP_1160_NA_WHT_OV_HE_150mA_TUNABLE @ 4000K	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 98.02 lm/W			
MODEL: LLE 24x5600E122001m 927-965 LV PRE3		Imax(cd)	868.0	S/MH(C0/180)	1.21
NOMINAL POWER(W)		LOR(%)	100.0	S/MH(C90/270)	1.19
RATED VOLTAGE(V)	230.0	TOTAL FLUX(lm)	2265.4	η UP,DN(C0-180)	0.0,49.8
NOMINAL FLUX(lm)	2265.36	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.2
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	230	η down(%)	100.0	CIBSE SHR MAX	1.35

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:10 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	845.3	845.0	841.4	842.7	843.9	845.9	844.4	845.5	0- 10	81.57	81.57	3.6,3.6
20	793.5	785.3	779.4	783.1	787.8	785.8	780.8	788.4	10- 20	230.8	312.4	13.8,13.8
30	704.9	694.7	684.3	692.5	700.9	694.5	687.3	698.0	20- 30	342.0	654.4	28.9,28.9
40	598.3	584.1	570.5	581.4	593.0	585.5	574.8	587.4	30- 40	401.0	1055	46.6,46.6
50	477.4	462.2	449.2	459.7	471.5	463.4	453.4	465.8	40- 50	404.5	1460	64.4,64.4
60	346.8	333.3	322.7	331.6	341.4	336.5	327.5	338.2	50- 60	356.8	1817	80.2,80.2
70	211.8	201.8	195.4	200.4	207.0	205.9	201.6	207.5	60- 70	266.5	2083	92,92
80	80.94	76.16	74.02	74.96	77.09	80.84	80.76	82.02	70- 80	147.3	2230	98.5,98.5
90	1.015	2.139	2.876	1.936	0.6588	2.510	3.611	2.643	80- 90	34.86	2265	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): 1260.5 lm

%lum = 55.6%

%lamp = 55.6%

Conical surface Flux(120deg): 1816.7 lm

%lum = 80.2%

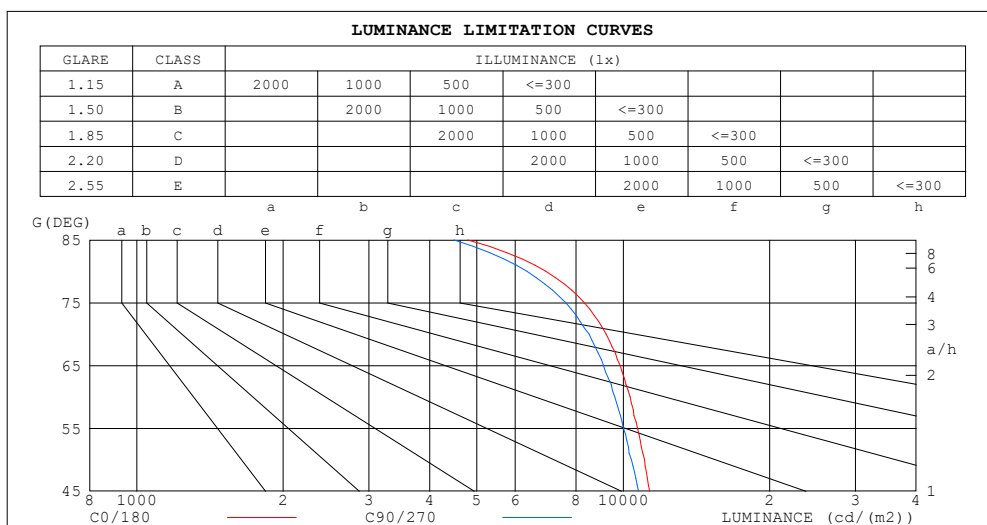
%lamp = 80.2%

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:10 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:0.1091A P:23.11W PF:0.8827 Lamp Flux:2265.36x1 lm		
NAME: HIP_1160_NA_WHT_OV_HE_150mA_TUNABLE @ 4000K TYPE:LED	WEIGHT:	
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:



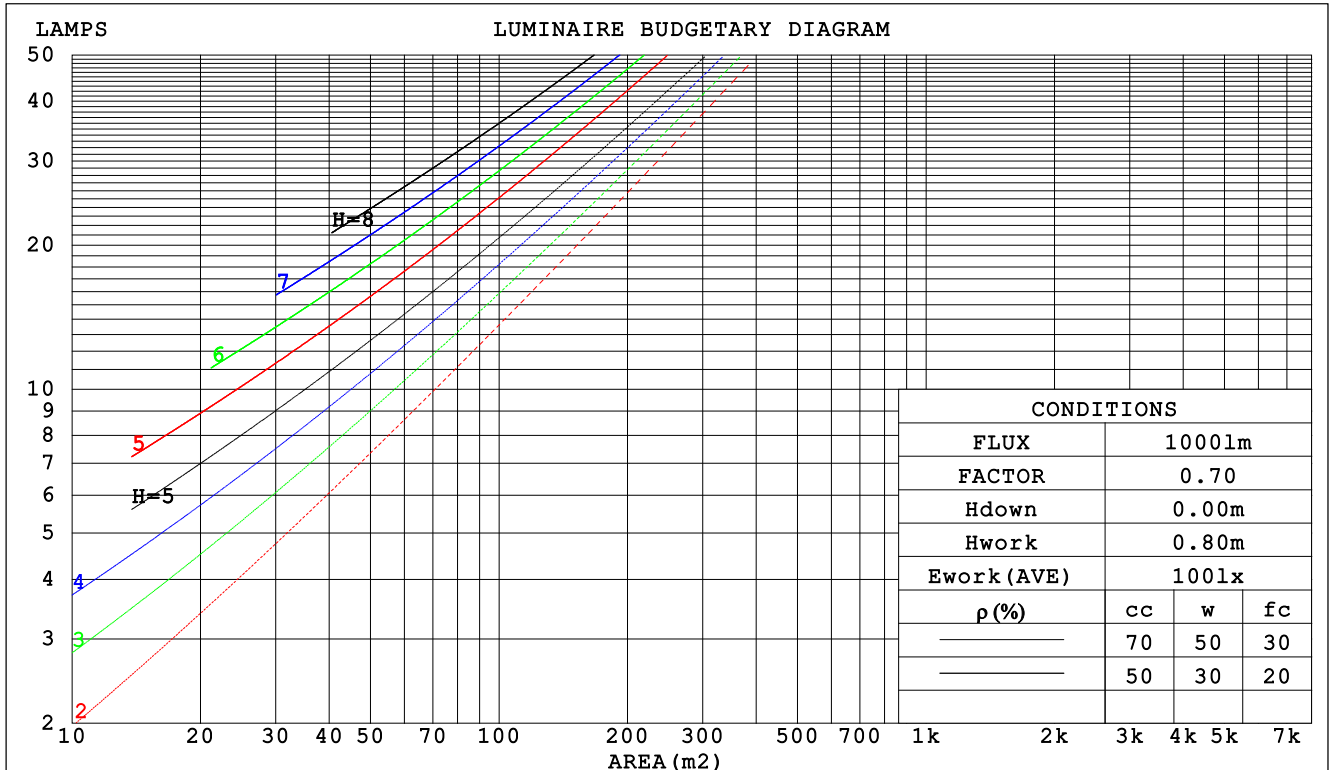
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: JEFF
Test Date: 10 February 2023

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:0.1091A P:23.11W PF:0.8827 Lamp Flux:2265.36x1 lm		
NAME: HIP_1160_NA_WHT_OV_HE_150mA_TUNABLE @ 4000K	TYPE: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	Coefficients of Utilization(CU)															
RCR:Room Cavity Ratio																
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	1.04	1.00	.96	1.02	.98	.95	.98	.95	.92	.94	.91	.89	.90	.88	.86	.84
2.0	.91	.84	.79	.89	.83	.78	.86	.81	.76	.82	.78	.74	.79	.76	.73	.71
3.0	.80	.72	.66	.79	.71	.65	.76	.69	.64	.73	.67	.63	.70	.66	.62	.60
4.0	.71	.63	.56	.70	.62	.55	.67	.60	.55	.65	.59	.54	.63	.58	.53	.51
5.0	.64	.55	.48	.63	.54	.48	.60	.53	.47	.59	.52	.47	.57	.51	.46	.44
6.0	.57	.49	.42	.57	.48	.42	.55	.47	.42	.53	.46	.41	.51	.46	.41	.39
7.0	.52	.43	.37	.51	.43	.37	.50	.42	.37	.48	.42	.37	.47	.41	.36	.34
8.0	.48	.39	.33	.47	.39	.33	.46	.38	.33	.44	.38	.33	.43	.37	.33	.31
9.0	.44	.36	.30	.43	.35	.30	.42	.35	.30	.41	.34	.30	.40	.34	.30	.28
10.0	.40	.33	.27	.40	.32	.27	.39	.32	.27	.38	.32	.27	.37	.31	.27	.25



C Range: 0 - 360DEG

C Interval: 22.5DEG

Test Speed: HIGH

Temperature:25.3DEG

Operators:JEFF

Test Date:10 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:0.1091A P:23.11W PF:0.8827 Lamp Flux:2265.36x1 lm		
NAME: HIP_1160_NA_WHT_OV_HE_150mA_TUNABLE @ 4000K	TYPE: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	.301	.171	.054	.294	.168	.053	.280	.161	.051	.268	.155	.050	.257	.149	.048		
2.0	.285	.156	.048	.279	.153	.047	.267	.148	.046	.256	.144	.045	.246	.139	.044		
3.0	.264	.141	.042	.259	.139	.042	.249	.135	.041	.239	.131	.040	.230	.128	.039		
4.0	.245	.127	.037	.240	.125	.037	.231	.122	.037	.222	.119	.036	.214	.116	.035		
5.0	.227	.115	.033	.222	.114	.033	.214	.112	.033	.207	.109	.032	.200	.107	.032		
6.0	.210	.105	.030	.207	.104	.030	.199	.102	.030	.193	.100	.029	.186	.098	.029		
7.0	.196	.097	.027	.193	.096	.027	.186	.094	.027	.180	.092	.027	.175	.091	.027		
8.0	.183	.090	.025	.180	.089	.025	.175	.087	.025	.169	.086	.025	.164	.084	.025		
9.0	.172	.083	.023	.169	.082	.023	.164	.081	.023	.159	.080	.023	.155	.079	.023		
10.0	.162	.078	.022	.159	.077	.021	.155	.076	.021	.150	.075	.021	.146	.074	.021		

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	.180	.156	.135	.154	.134	.116	.105	.092	.080	.061	.053	.047	.019	.017	.015	
2.0	.171	.132	.099	.147	.114	.085	.101	.079	.060	.058	.046	.035	.019	.015	.011	
3.0	.163	.114	.075	.140	.099	.065	.096	.068	.046	.056	.040	.027	.018	.013	.009	
4.0	.156	.101	.059	.134	.087	.051	.092	.061	.036	.053	.036	.021	.017	.012	.007	
5.0	.148	.090	.048	.127	.078	.042	.088	.055	.029	.051	.032	.017	.016	.010	.006	
6.0	.141	.082	.040	.121	.071	.034	.084	.050	.024	.049	.029	.015	.016	.010	.005	
7.0	.134	.075	.034	.116	.065	.029	.080	.046	.021	.046	.027	.012	.015	.009	.004	
8.0	.128	.069	.029	.110	.060	.025	.076	.042	.018	.044	.025	.011	.014	.008	.004	
9.0	.122	.064	.025	.105	.056	.022	.073	.039	.016	.042	.023	.009	.014	.008	.003	
10.0	.116	.060	.023	.100	.052	.020	.070	.037	.014	.041	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:10 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:0.1091A P:23.11W PF:0.8827 Lamp Flux:2265.36x1 lm										
NAME: HIP_1160_NA_WHT_OV_HE_150mA_TUNABLE @ 4000K TYPE: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	21.1	22.6	21.3	22.8	23.0	20.8	22.3	21.0	22.5	22.7
3H	22.5	23.9	22.8	24.1	24.4	22.2	23.5	22.5	23.8	24.0
4H	23.1	24.4	23.4	24.7	24.9	22.7	24.0	23.0	24.3	24.5
6H	23.4	24.7	23.8	25.0	25.2	23.0	24.3	23.4	24.5	24.8
8H	23.5	24.7	23.9	25.0	25.3	23.1	24.3	23.5	24.6	24.9
12H	23.6	24.7	23.9	25.0	25.3	23.1	24.3	23.5	24.6	24.9
4H 2H	21.6	22.9	21.9	23.2	23.4	21.4	22.7	21.7	22.9	23.2
3H	23.3	24.4	23.6	24.7	25.0	23.0	24.1	23.3	24.4	24.7
4H	23.9	25.0	24.3	25.3	25.6	23.6	24.7	24.0	25.0	25.3
6H	24.4	25.3	24.8	25.7	26.1	24.0	25.0	24.4	25.3	25.7
8H	24.5	25.4	25.0	25.8	26.2	24.2	25.0	24.6	25.4	25.8
12H	24.6	25.4	25.0	25.8	26.2	24.2	25.0	24.7	25.4	25.8
8H 4H	24.1	25.0	24.6	25.4	25.8	23.8	24.7	24.3	25.1	25.5
6H	24.7	25.5	25.2	25.9	26.3	24.4	25.1	24.9	25.5	26.0
8H	24.9	25.6	25.4	26.0	26.5	24.6	25.2	25.1	25.7	26.1
12H	25.1	25.6	25.5	26.0	26.5	24.7	25.3	25.2	25.7	26.2
12H 4H	24.1	24.9	24.6	25.3	25.7	23.9	24.6	24.3	25.0	25.4
6H	24.8	25.4	25.2	25.8	26.3	24.5	25.1	24.9	25.5	26.0
8H	25.0	25.5	25.5	26.0	26.5	24.7	25.2	25.2	25.7	26.2
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.2					+ 0.2 / - 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 Corrected 2265 lm Total Lamp Luminous Flux. (8log(F/F0) = 2.8)

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:10 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:0.1091A P:23.11W PF:0.8827 Lamp Flux:2265.36x1 lm		
NAME: HIP_1160_NA_WHT_OV_HE_150mA_TUNABLE @ 4000K	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:

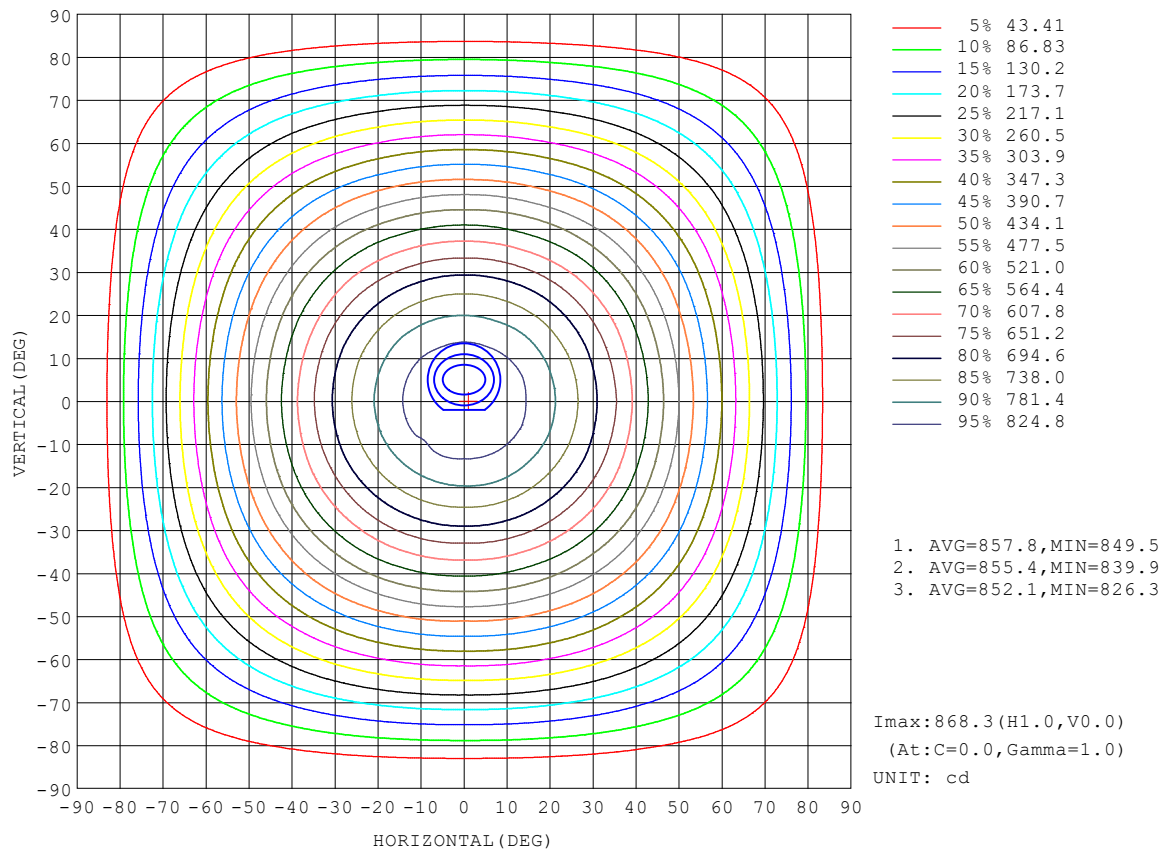
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	59	47	40	58	47	40	57	47	40	34
0.80	69	57	50	68	57	50	66	56	49	43
1.00	77	66	59	76	66	59	74	67	58	51
1.25	84	74	67	83	73	66	80	72	66	58
1.50	89	79	72	87	78	72	84	77	71	64
2.00	96	87	81	94	86	80	90	84	79	71
2.50	99	92	86	97	91	85	94	88	83	75
3.00	103	96	91	101	95	90	97	92	87	79
4.00	107	101	97	104	99	95	100	96	93	84
5.00	109	104	100	107	102	99	102	99	96	87
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:10 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:0.1091A P:23.11W PF:0.8827 Lamp Flux:2265.36x1 lm		
NAME: HIP_1160_NA_WHT_OV_HE_150mA_TUNABLE @ 4000K TYPE:LED	WEIGHT:	
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:

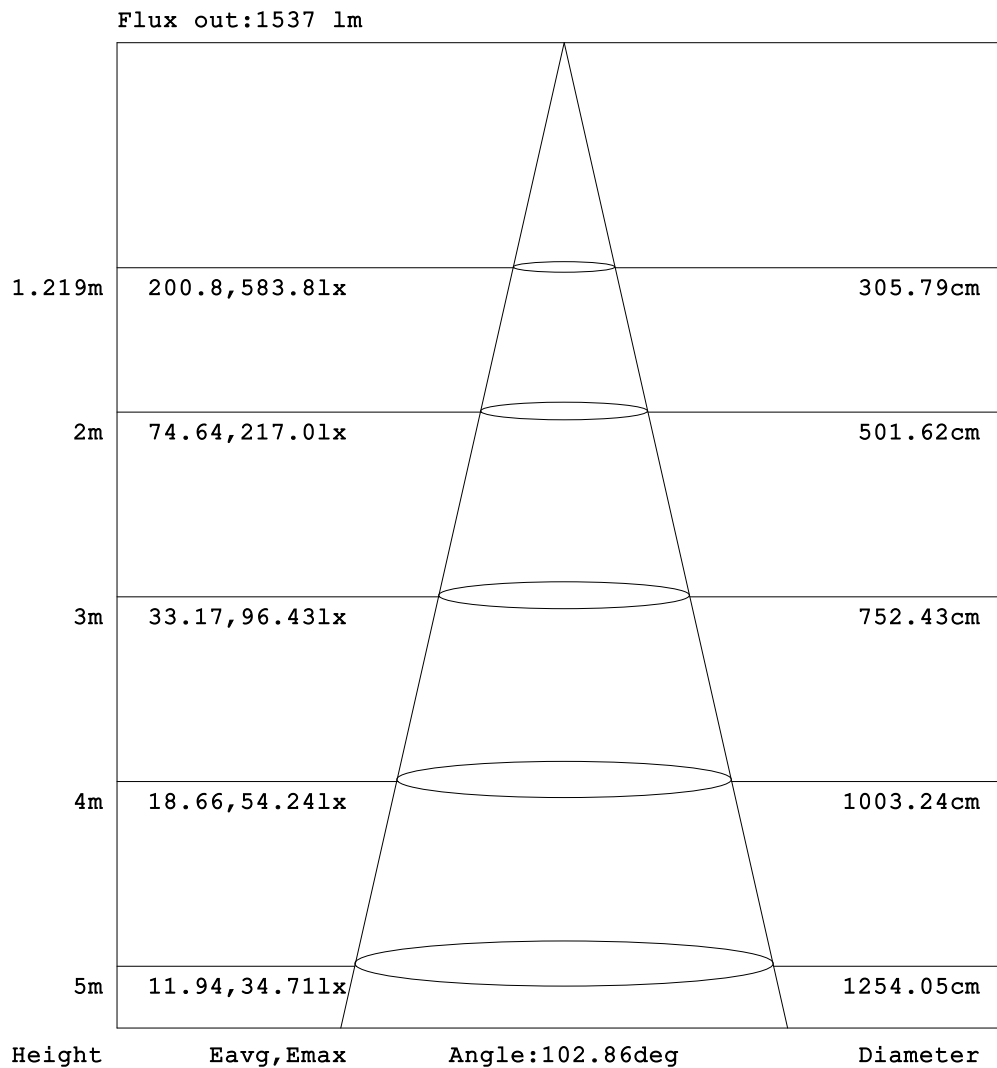


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:10 February 2023

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:0.1091A P:23.11W PF:0.8827 Lamp Flux:2265.36x1 lm		
NAME: HIP_1160_NA_WHT_OV_HE_150mA_TUNABLE @ 4000K	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:



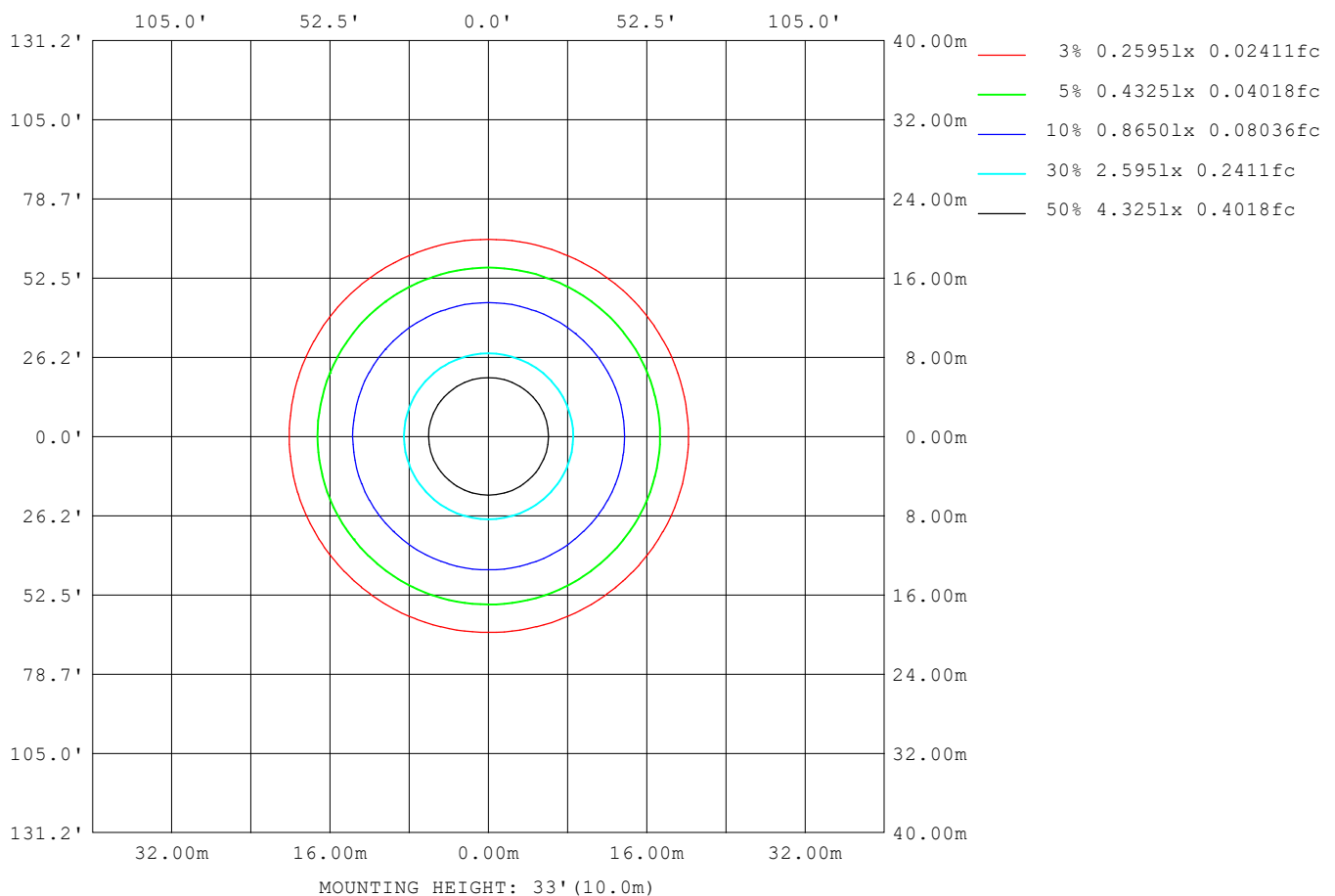
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:10 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:0.1091A P:23.11W PF:0.8827 Lamp Flux:2265.36x1 lm		
NAME: HIP_1160_NA_WHT_OV_HE_150mA_TUNABLE @ 4000K TYPE: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:10 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:0.1091A P:23.11W PF:0.8827 Lamp Flux:2265.36x1 lm		
NAME: HIP_1160_NA_WHT_OV_HE_150mA_TUNABLE @ 4000K	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:

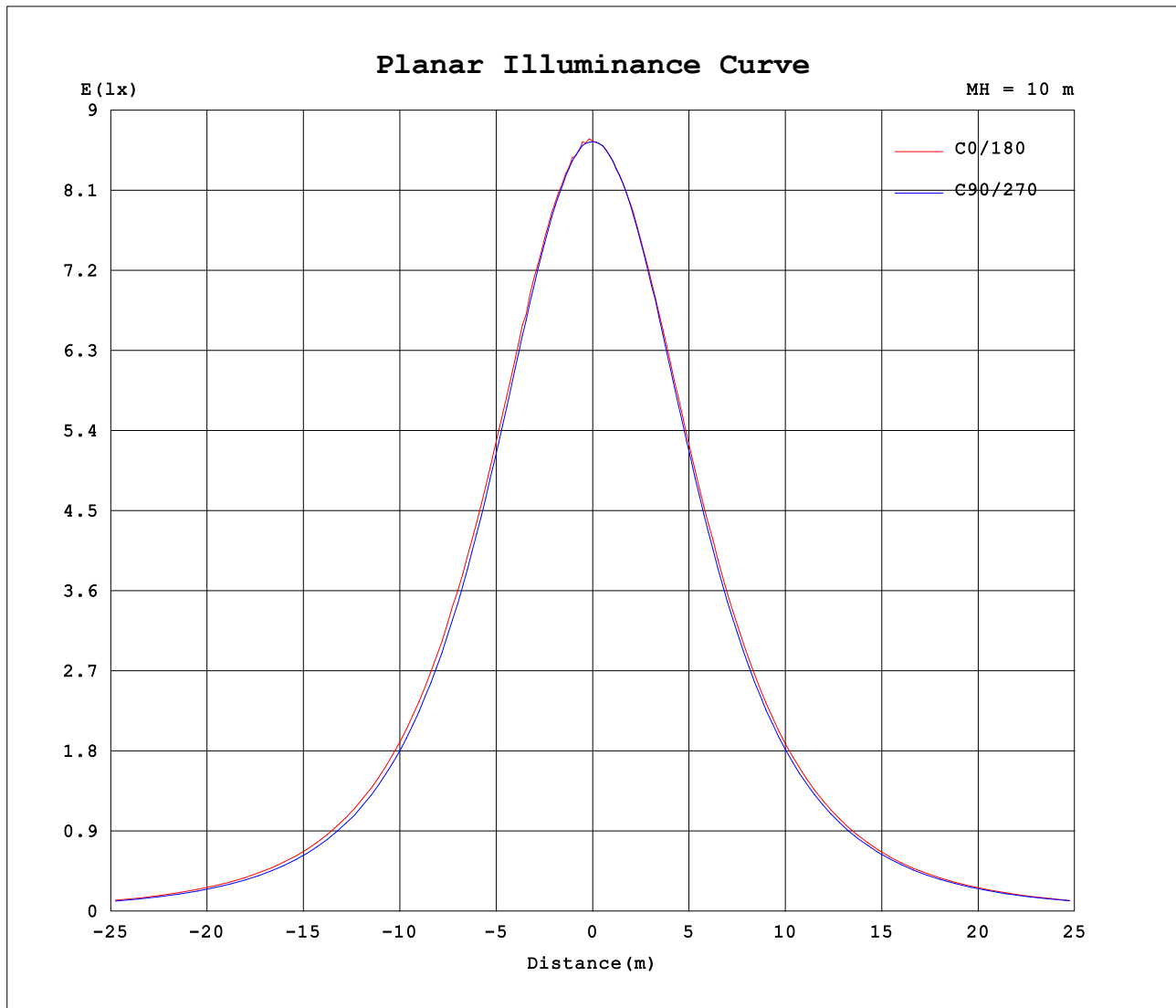
AvgL	cd/m2
L_0~180 (65) av	9764
L_0~180 (75) av	8181
L_0~180 (85) av	4541
L_90~270 (65) av	9221
L_90~270 (75) av	7813
L_90~270 (85) av	4941
L_45 (65) av	9490
L_45 (75) av	8002
L_45 (85) av	4800

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:JEFF
Test Date:10 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: 10 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:

