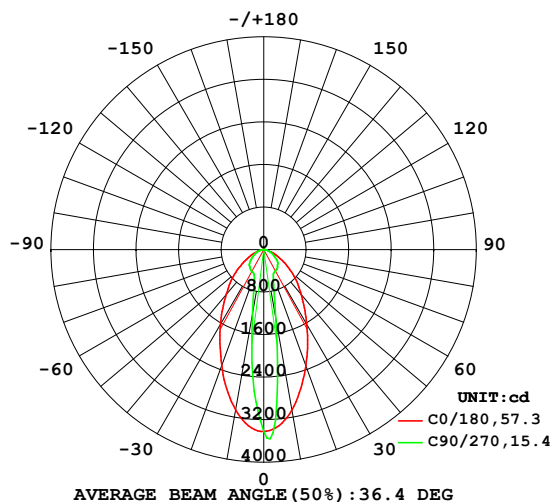


## LUMINAIRE PHOTOMETRIC TEST REPORT

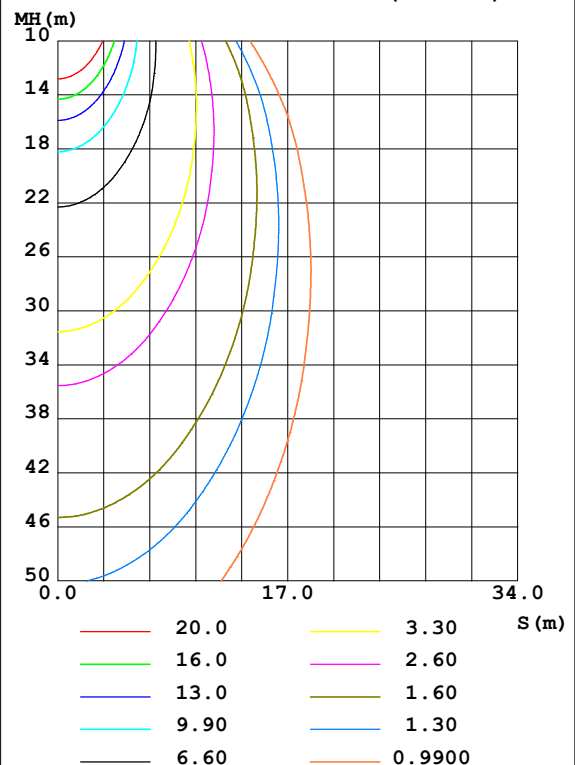
Test:U:239.9V I:0.1127A P:25.36W PF:0.9380 Lamp Flux:2585.87x1 lm		
NAME: HIP_1160_NA_WHT_NARROW_HE_500mA_4000K CRI90	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 101.96 lm/W			
LLE 20000mm	1300lm 940 HV ADV6	Imax(cd)	3781	S/MH(C0/180)	0.82
NOMINAL POWER(W)		LOR(%)	100.0	S/MH(C90/270)	0.26
RATED VOLTAGE(V)	230.0	TOTAL FLUX(lm)	2585.9	$\eta$ UP,DN(C0-180)	0.0,51.8
NOMINAL FLUX(lm)	2585.87	CIE CLASS	DIRECT	$\eta$ UP,DN(C180-360)	0.0,48.2
LAMPS INSIDE	1	$\eta$ up(%)	0.0	CIBSE SHR NOM	0.00
TEST VOLTAGE(V)	230	$\eta$ down(%)	100.0	CIBSE SHR MAX	1.00

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:29 January 2024

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity:65.0%  
Test Distance:7.890m [K=1.0000]  
Remarks:

## ZONAL FLUX DIAGRAM

## ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	3063	2643	1340	1932	3060	1640	1218	1805	0- 10	257.0	257.0	9.94,9.94
20	2323	1081	531.6	818.4	2314	789.9	529.8	812.4	10- 20	421.5	678.5	26.2,26.2
30	1621	632.2	457.3	521.9	1634	552.0	467.6	535.1	20- 30	429.0	1108	42.8,42.8
40	1100	500.3	409.8	438.2	1098	484.8	413.5	450.0	30- 40	426.1	1534	59.3,59.3
50	715.1	408.6	334.5	363.1	715.5	399.8	324.2	368.0	40- 50	395.0	1929	74.6,74.6
60	389.4	315.6	221.9	275.6	386.2	297.7	221.3	278.2	50- 60	320.1	2249	87,87
70	171.6	177.5	124.3	157.0	168.9	163.8	118.8	148.0	60- 70	220.0	2469	95.5,95.5
80	43.03	52.10	40.19	48.08	43.54	48.53	37.96	42.37	70- 80	99.08	2568	99.3,99.3
90	0.5615	0.7815	0.5994	0.6984	0.6569	0.7241	0.5348	0.6115	80- 90	17.97	2586	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): 1737.2 lm

%lum = 67.2%

%lamp = 67.2%

Conical surface Flux(120deg): 2248.8 lm

%lum = 87.0%

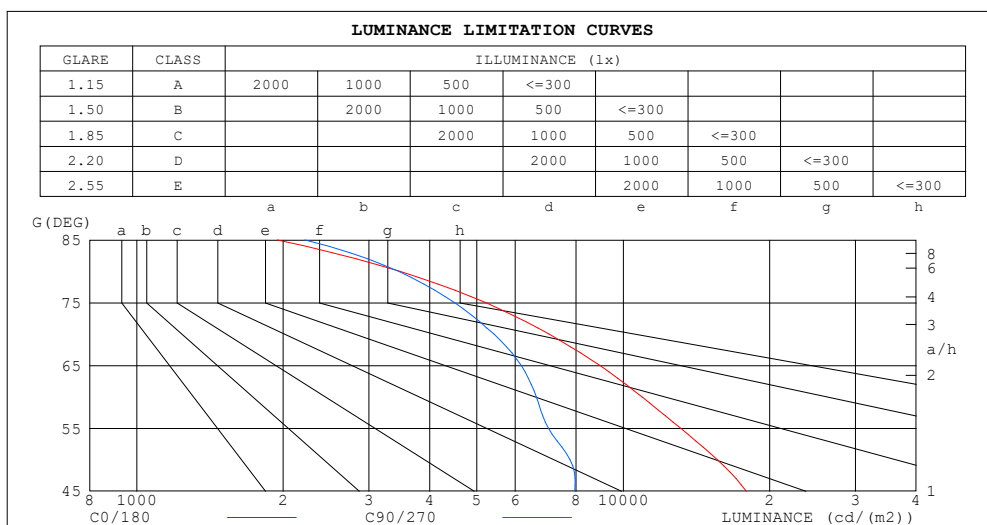
%lamp = 87.0%

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:JEFF  
 Test Date:29 January 2024

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
 Humidity:65.0%  
 Test Distance:7.890m [K=1.0000]  
 Remarks:

## LUMINANCE LIMITATION CURVES

Test:U:239.9V I:0.1127A P:25.36W PF:0.9380 Lamp Flux:2585.87x1 lm		
NAME: HIP_1160_NA_WHT_NARROW_HE_500mA_4000K CRI90	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	1946	2217
80	3477	3456
75	5223	4507
70	7042	5425
65	8953	6168
60	10929	6627
55	13120	7016
50	15611	7770
45	17899	7943

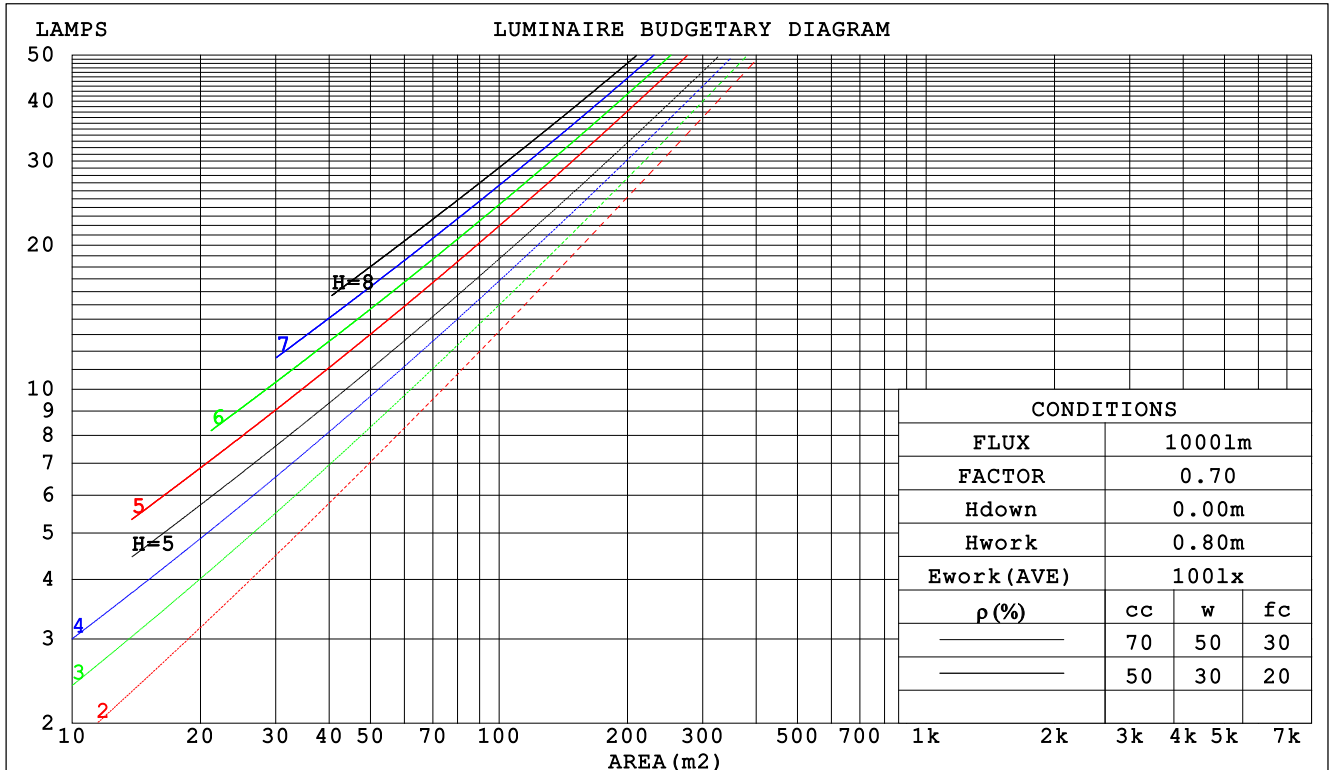
C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JEFF  
Test Date:29 January 2024

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity:65.0%  
Test Distance:7.890m [K=1.0000]  
Remarks:

**CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM**

Test:U:239.9V I:0.1127A P:25.36W PF:0.9380 Lamp Flux:2585.87x1 lm		
NAME: HIP_1160_NA_WHT_NARROW_HE_500mA_4000K CRI90	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	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	1.07	1.03	1.00	1.05	1.01	.99	1.00	.98	.95	.97	.94	.93	.93	.91	.90	.88
2.0	.96	.90	.85	.94	.89	.84	.90	.86	.82	.87	.84	.80	.84	.81	.79	.77
3.0	.86	.79	.74	.84	.78	.73	.82	.76	.72	.79	.74	.70	.77	.73	.69	.67
4.0	.78	.70	.65	.77	.70	.64	.74	.68	.63	.72	.67	.63	.70	.66	.62	.60
5.0	.71	.63	.58	.70	.63	.57	.68	.62	.57	.66	.61	.56	.65	.60	.56	.54
6.0	.65	.58	.52	.65	.57	.52	.63	.56	.51	.61	.55	.51	.60	.55	.51	.49
7.0	.60	.53	.47	.60	.52	.47	.58	.52	.47	.57	.51	.47	.56	.50	.46	.45
8.0	.56	.49	.44	.56	.48	.43	.54	.48	.43	.53	.47	.43	.52	.47	.43	.41
9.0	.53	.45	.40	.52	.45	.40	.51	.45	.40	.50	.44	.40	.49	.44	.40	.38
10.0	.49	.42	.38	.49	.42	.37	.48	.42	.37	.47	.41	.37	.46	.41	.37	.36



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JEFF  
Test Date:29 January 2024

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity:65.0%  
Test Distance:7.890m [K=1.0000]  
Remarks:

**WEC AND CCEC**

Test:U:239.9V I:0.1127A P:25.36W PF:0.9380 Lamp Flux:2585.87x1 lm		
NAME: HIP_1160_NA_WHT_NARROW_HE_500mA_4000K CRI90	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	.253	.144	.046	.246	.141	.045	.233	.134	.043	.222	.128	.041	.211	.122	.039		
2.0	.243	.133	.041	.237	.130	.040	.225	.125	.039	.215	.121	.038	.205	.116	.037		
3.0	.227	.121	.036	.222	.119	.036	.212	.115	.035	.203	.111	.034	.195	.108	.033		
4.0	.212	.110	.032	.207	.109	.032	.199	.105	.031	.191	.102	.031	.183	.100	.030		
5.0	.198	.101	.029	.194	.099	.029	.186	.097	.029	.179	.094	.028	.172	.092	.028		
6.0	.185	.093	.027	.181	.092	.026	.175	.089	.026	.168	.087	.026	.162	.085	.025		
7.0	.173	.086	.024	.170	.085	.024	.164	.083	.024	.158	.081	.024	.153	.080	.023		
8.0	.163	.079	.022	.160	.079	.022	.154	.077	.022	.149	.076	.022	.145	.074	.022		
9.0	.153	.074	.021	.151	.073	.021	.146	.072	.020	.141	.071	.020	.137	.070	.020		
10.0	.145	.069	.019	.142	.069	.019	.138	.068	.019	.134	.067	.019	.130	.065	.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	.119	.103	.092	.083	.059	.054	.048	.019	.017	.016		
2.0	.166	.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	.132	.081	.043	.114	.070	.038	.079	.049	.027	.046	.029	.016	.015	.009	.005		
7.0	.126	.073	.037	.108	.064	.032	.075	.045	.023	.043	.026	.013	.014	.009	.004		
8.0	.119	.067	.032	.103	.058	.028	.071	.041	.020	.041	.024	.012	.013	.008	.004		
9.0	.114	.062	.028	.098	.054	.024	.068	.038	.017	.040	.022	.010	.013	.007	.003		
10.0	.108	.058	.024	.093	.050	.021	.065	.035	.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:29 January 2024

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity:65.0%  
Test Distance:7.890m [K=1.0000]  
Remarks:

**UGR(Unified Glare Rating) Table**

Test:U:239.9V I:0.1127A P:25.36W PF:0.9380 Lamp Flux:2585.87x1 lm										
NAME: HIP_1160_NA_WHT_NARROW_HE_500mA_4000K CRI90 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	21.2	22.5	21.5	22.7	22.9	18.5	19.8	18.8	20.0	20.2
3H	22.1	23.3	22.4	23.5	23.8	19.7	20.9	20.0	21.1	21.3
4H	22.4	23.5	22.7	23.7	24.0	20.0	21.2	20.3	21.4	21.7
6H	22.4	23.5	22.7	23.8	24.0	20.2	21.3	20.6	21.6	21.8
8H	22.4	23.4	22.7	23.7	24.0	20.3	21.3	20.6	21.6	21.8
12H	22.4	23.4	22.7	23.7	23.9	20.3	21.2	20.6	21.5	21.8
4H 2H	21.5	22.6	21.8	22.9	23.1	19.4	20.5	19.7	20.8	21.0
3H	22.6	23.6	22.9	23.9	24.2	20.7	21.7	21.0	22.0	22.2
4H	22.9	23.8	23.3	24.1	24.5	21.1	22.0	21.5	22.3	22.7
6H	23.1	23.9	23.5	24.2	24.6	21.4	22.2	21.8	22.5	22.9
8H	23.1	23.8	23.5	24.2	24.6	21.4	22.2	21.8	22.5	22.9
12H	23.1	23.8	23.5	24.1	24.5	21.4	22.1	21.9	22.5	22.9
8H 4H	23.0	23.8	23.4	24.1	24.5	21.4	22.1	21.8	22.5	22.8
6H	23.2	23.8	23.7	24.2	24.7	21.7	22.3	22.1	22.7	23.1
8H	23.3	23.8	23.7	24.2	24.7	21.8	22.3	22.3	22.8	23.2
12H	23.3	23.7	23.7	24.2	24.7	21.8	22.3	22.3	22.8	23.2
12H 4H	23.0	23.7	23.4	24.0	24.4	21.3	22.0	21.8	22.4	22.8
6H	23.2	23.8	23.7	24.2	24.6	21.7	22.3	22.2	22.7	23.1
8H	23.3	23.7	23.8	24.2	24.7	21.8	22.3	22.3	22.7	23.2
Variations with the observer position at spacings:										
S = 1.0H	+ 0.5 / - 0.3					+ 0.2 / - 0.3				
1.5H	+ 0.7 / - 0.8					+ 0.2 / - 0.5				
2.0H	+ 1.4 / - 1.2					+ 0.3 / - 0.6				

CIE Pub.117 Corrected 2586 lm Total Lamp Luminous Flux. (8log(F/F0) = 3.3)

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JEFF  
Test Date:29 January 2024

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity:65.0%  
Test Distance:7.890m [K=1.0000]  
Remarks:

**UTILIZATION FACTORS TABLE**

Test:U:239.9V I:0.1127A P:25.36W PF:0.9380 Lamp Flux:2585.87x1 lm		
NAME: HIP_1160_NA_WHT_NARROW_HE_500mA_4000K CRI90	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:

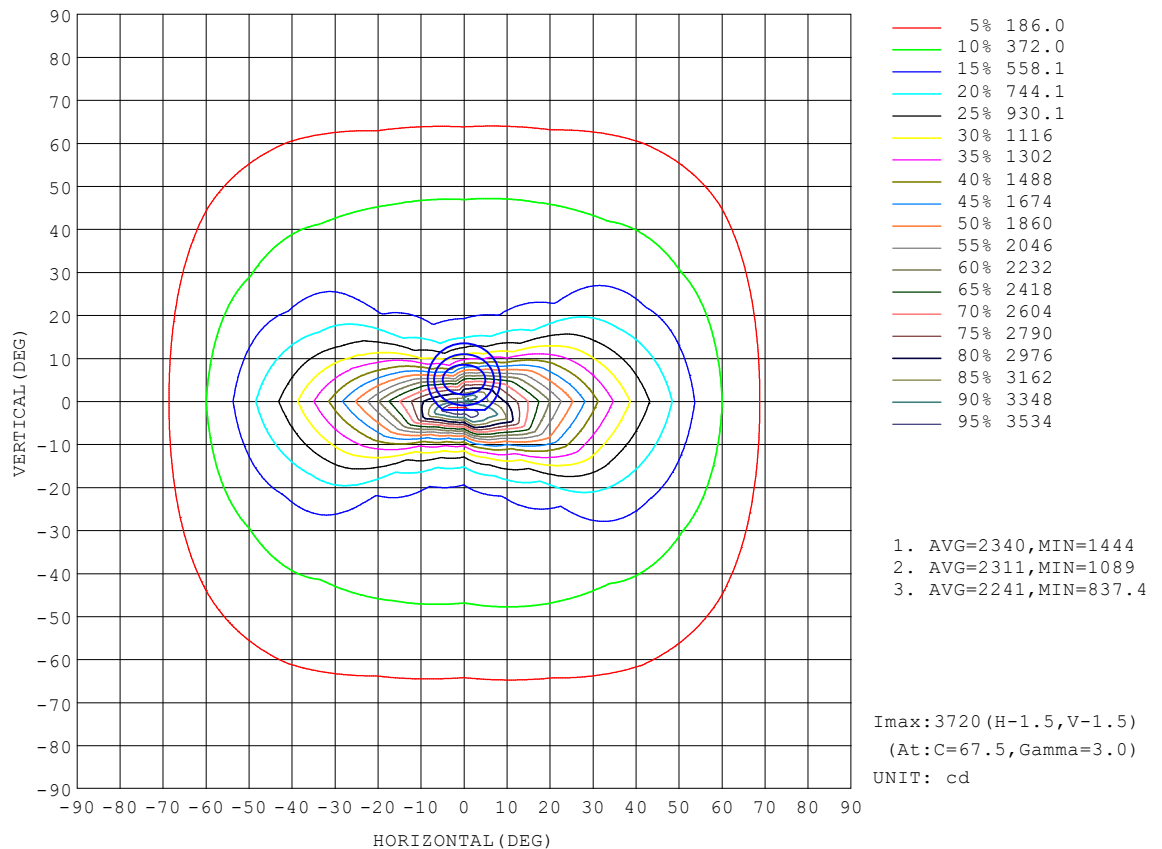
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	66	56	50	66	56	50	65	56	50	44
0.80	76	66	60	75	66	60	73	65	59	53
1.00	83	74	68	82	73	68	80	74	67	61
1.25	90	81	75	88	80	75	86	79	74	67
1.50	94	86	80	92	85	80	90	83	78	72
2.00	100	93	87	98	91	87	95	89	85	78
2.50	103	96	91	101	95	91	97	93	89	81
3.00	106	100	95	104	98	94	100	96	92	84
4.00	109	104	101	107	103	99	103	99	96	88
5.00	111	107	104	109	105	102	104	102	99	91
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHR NOM = 1.25		

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: JEFF  
Test Date: 29 January 2024

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity: 65.0%  
Test Distance: 7.890m [K=1.0000]  
Remarks:

### ISOCANDELA DIAGRAM

Test:U:239.9V I:0.1127A P:25.36W PF:0.9380 Lamp Flux:2585.87x1 lm		
NAME: HIP_1160_NA_WHT_NARROW_HE_500mA_4000K CRI90	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:



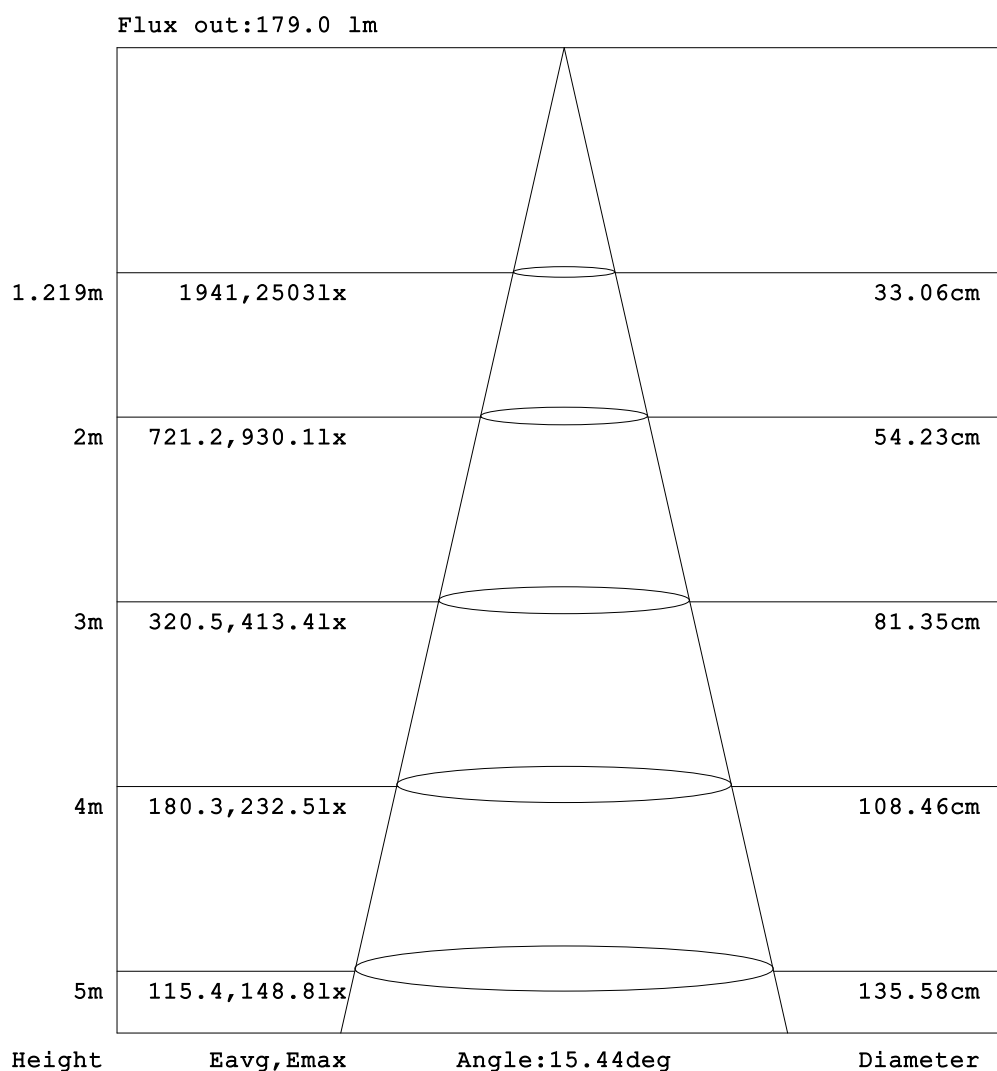
C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JEFF  
Test Date:29 January 2024

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity:65.0%  
Test Distance:7.890m [K=1.0000]  
Remarks:



**AAI Figure**

Test:U:239.9V I:0.1127A P:25.36W PF:0.9380 Lamp Flux:2585.87x1 lm		
NAME: HIP_1160_NA_WHT_NARROW_HE_500mA_4000K CRI90	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:



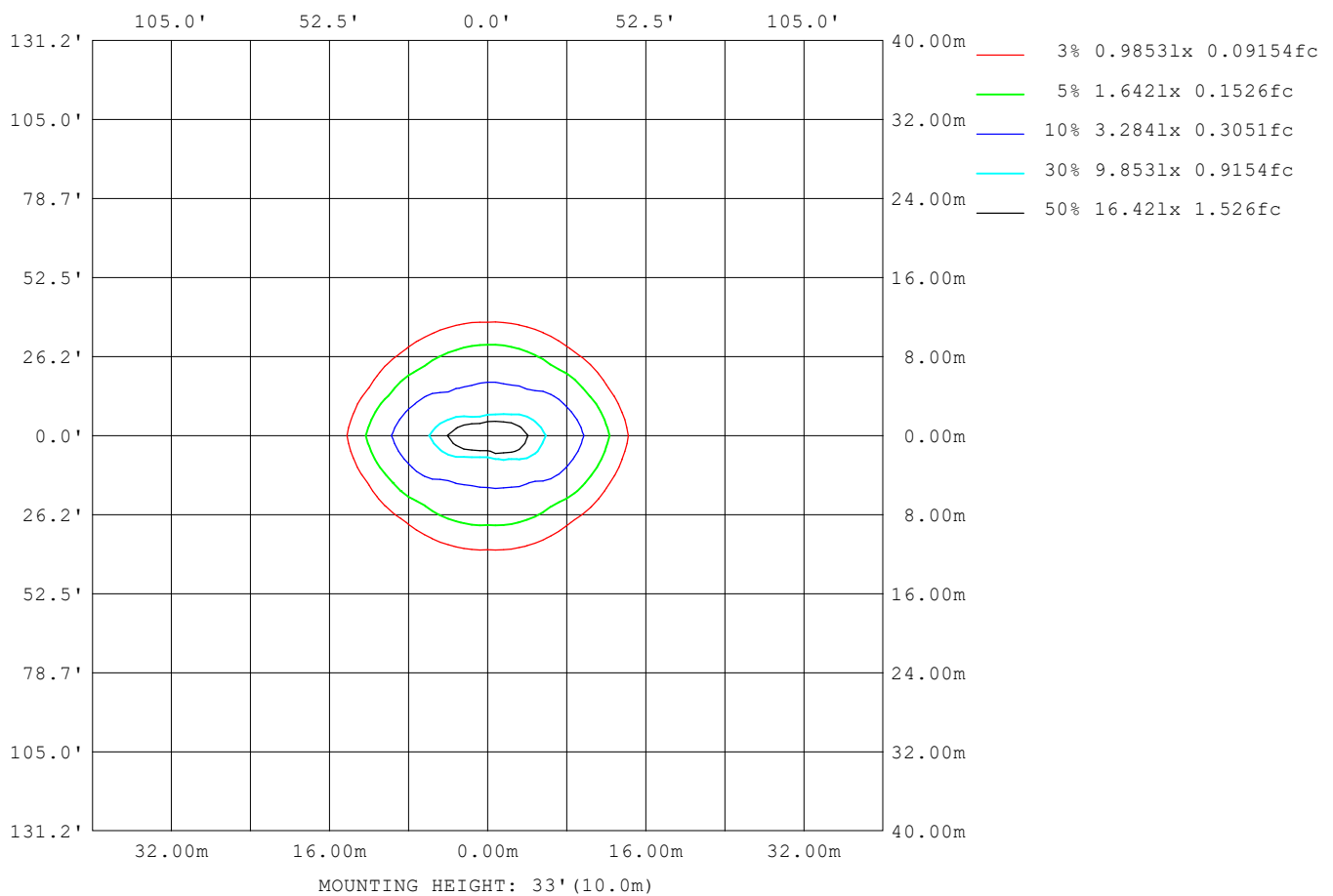
**Note:**The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JEFF  
Test Date:29 January 2024

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity:65.0%  
Test Distance:7.890m [K=1.0000]  
Remarks:

**ISOLUX DIAGRAM**

Test:U:239.9V I:0.1127A P:25.36W PF:0.9380 Lamp Flux:2585.87x1 lm		
NAME: HIP_1160_NA_WHT_NARROW_HE_500mA_4000K CRI90	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:29 January 2024

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity:65.0%  
Test Distance:7.890m [K=1.0000]  
Remarks:

### LED Avg.L Report

Test:U:239.9V I:0.1127A P:25.36W PF:0.9380 Lamp Flux:2585.87x1 lm		
NAME: HIP_1160_NA_WHT_NARROW_HE_500mA_4000K CRI90	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:1
MFR.: DARKON	SUR.:	Shielding Angle:

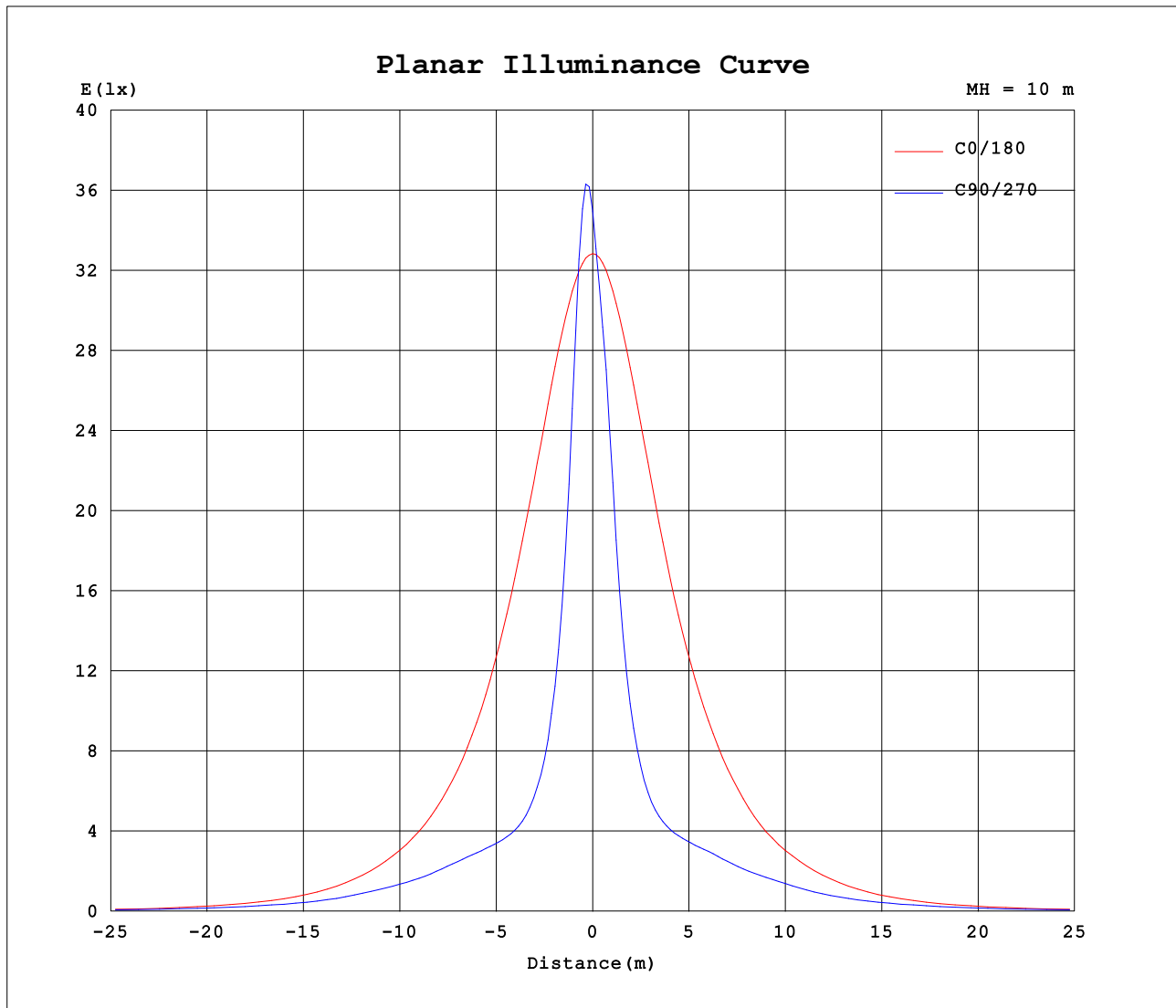
AvgL	cd/m2
L_0~180 (65) av	9269
L_0~180 (75) av	5420
L_0~180 (85) av	2069
L_90~270 (65) av	5938
L_90~270 (75) av	4314
L_90~270 (85) av	2075
L_45 (65) av	8116
L_45 (75) av	5493
L_45 (85) av	2472

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JEFF  
Test Date:29 January 2024

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity:65.0%  
Test Distance:7.890m [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: 29 January 2024

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity: 65.0%  
Test Distance: 7.890m [K=1.0000]  
Remarks:

