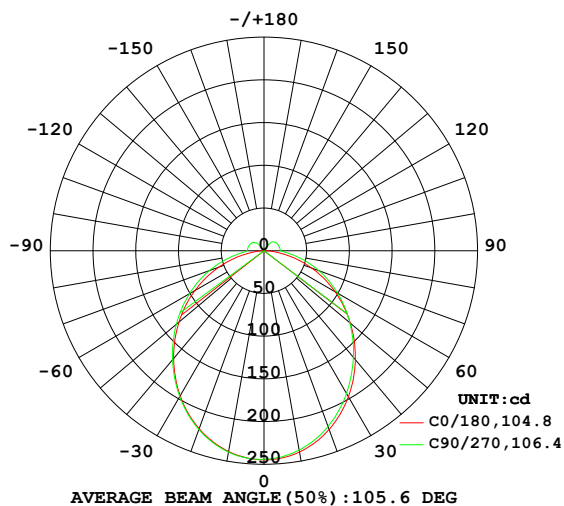


## LUMINAIRE PHOTOMETRIC TEST REPORT

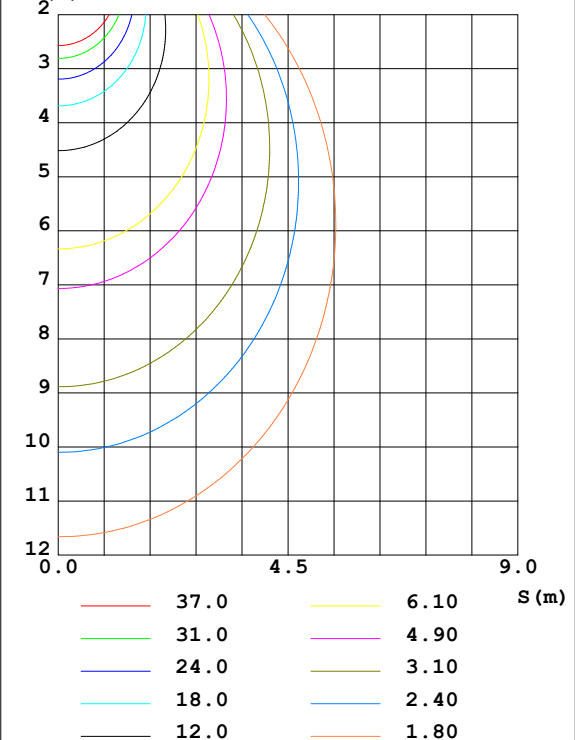
Test:U:24.001V I:0.3412A P:8.1891W PF:1.0000 Freq:0Hz Lamp Flux:709.191x1 lm		
NAME: RIBDC-23-40K-AM	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: RAYHIL	SUR.: 0.01*0.6	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 86.60 lm/W			
MODEL		I <sub>max</sub> (cd)	244.7	S/MH (C0/180)	1.20
NOMINAL POWER (W)		LOR (%)	100.0	S/MH (C90/270)	1.21
RATED VOLTAGE (V)		TOTAL FLUX (lm)	709.20	η UP, DN (C0-180)	3.3, 46.9
NOMINAL FLUX (lm)	709.191	CIE CLASS	DIRECT	η UP, DN (C180-360)	3.2, 46.6
LAMPS INSIDE	1	η up (%)	6.5	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)		η down (%)	93.5	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
 C Interval: 90.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: JZ  
 Test Date: 2023-08-08

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.00.444  
 Humidity: 65.0%  
 Test Distance: 8.700m [K=1.0000]  
 Remarks:

## ZONAL FLUX DIAGRAM

### ZONAL FLUX DIAGRAM:

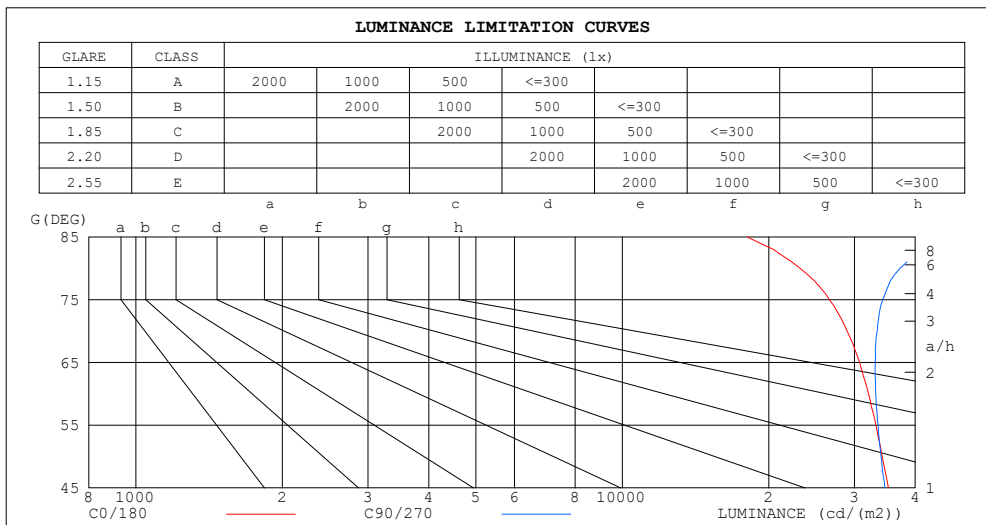
$\gamma$	C0	C90	C180	C270					$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	239.3	237.0	238.6	239.3					0- 10	23.05	23.05	3.25,3.25
20	222.7	219.0	221.7	222.8					10- 20	65.18	88.23	12.4,12.4
30	197.6	193.1	196.2	197.0					20- 30	96.54	184.8	26.1,26.1
40	166.4	162.8	164.6	166.6					30- 40	113.2	297.9	42,42
50	132.0	131.2	130.0	133.8					40- 50	114.7	412.6	58.2,58.2
60	96.20	99.56	93.53	100.8					50- 60	102.6	515.2	72.6,72.6
70	59.48	68.55	56.21	68.22					60- 70	79.46	594.6	83.8,83.8
80	24.19	38.77	20.55	37.57					70- 80	48.92	643.6	90.7,90.7
90	0.7123	19.42	0.3324	19.92					80- 90	19.66	663.2	93.5,93.5
100	0.1969	18.83	0.3079	19.25					90-100	10.64	673.9	95,95
110	0.4011	18.33	0.4313	18.72					100-110	10.13	684.0	96.4,96.4
120	0.4922	17.43	0.5667	17.48					110-120	9.189	693.2	97.7,97.7
130	0.6033	15.94	0.6777	15.15					120-130	7.731	700.9	98.8,98.8
140	0.7511	12.74	0.8377	10.21					130-140	5.688	706.6	99.6,99.6
150	0.9030	0.9608	0.9730	0.8869					140-150	1.742	708.3	99.9,99.9
160	0.9852	1.072	1.084	0.9666					150-160	0.4506	708.8	99.9,99.9
170	1.148	1.182	1.141	1.145					160-170	0.3059	709.1	100,100
180	1.182	1.195	1.182	1.182					170-180	0.1120	709.2	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG  
C Interval: 90.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JZ  
Test Date:2023-08-08

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.00.444  
Humidity:65.0%  
Test Distance:8.700m [K=1.0000]  
Remarks:

## LUMINANCE LIMITATION CURVES

Test:U:24.001V I:0.3412A P:8.1891W PF:1.0000 Freq:0Hz Lamp Flux:709.191x1 lm		
NAME: RIBDC-23-40K-AM	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: RAYHIL	SUR.: 0.01*0.6	Shielding Angle:



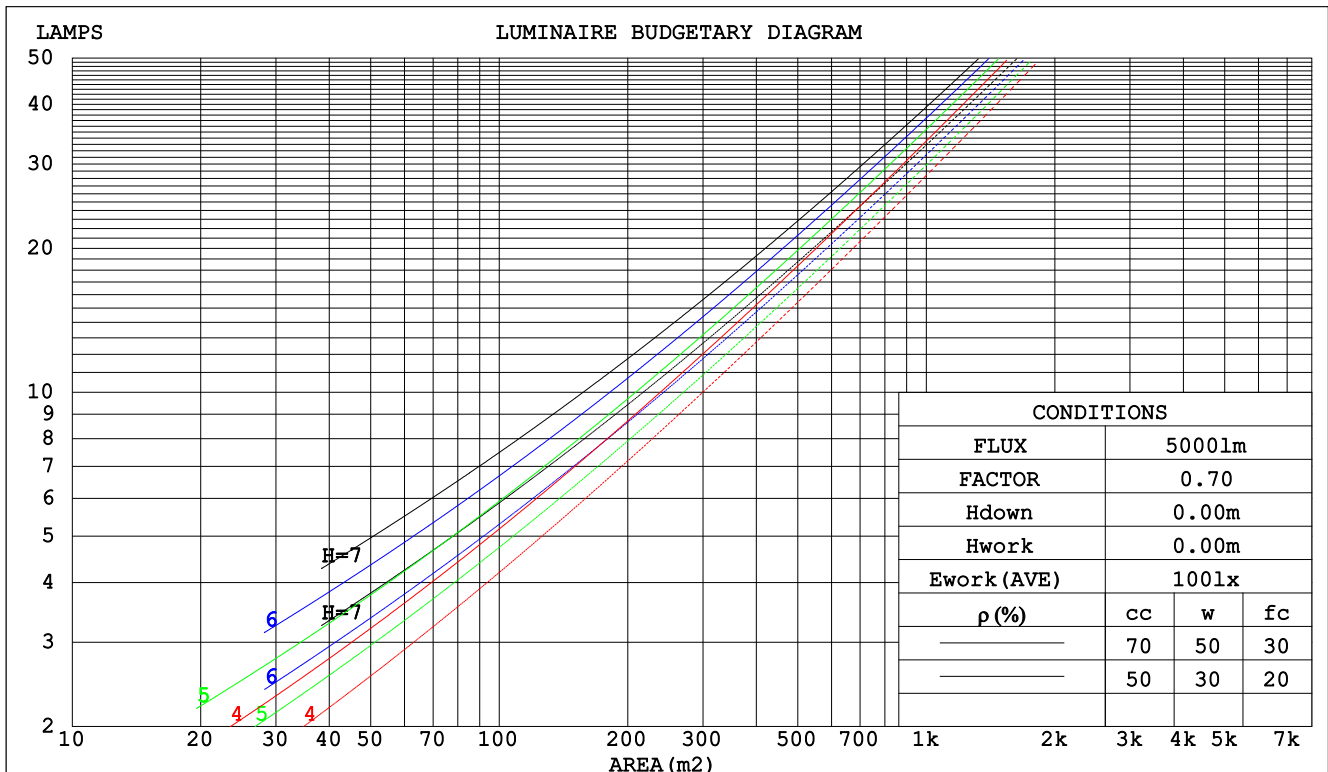
C Range: 0 - 360DEG  
C Interval: 90.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JZ  
Test Date:2023-08-08

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.00.444  
Humidity:65.0%  
Test Distance:8.700m [K=1.0000]  
Remarks:

## CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:24.001V I:0.3412A P:8.1891W PF:1.0000 Freq:0Hz Lamp Flux:709.19lx1 lm		
NAME: RIBDC-23-40K-AM	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: RAYHIL	SUR.: 0.01*0.6	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						Coefficients of Utilization(CU)									
0.0	1.18	1.18	1.18	1.14	1.14	1.14	1.08	1.08	1.08	1.02	1.02	1.02	.96	.96	.96	.94
1.0	1.02	.98	.94	.99	.95	.91	.94	.90	.87	.89	.86	.84	.84	.82	.80	.77
2.0	.89	.82	.76	.86	.80	.75	.82	.76	.72	.77	.73	.69	.74	.70	.67	.64
3.0	.78	.70	.63	.76	.68	.62	.72	.66	.60	.68	.63	.58	.65	.61	.57	.54
4.0	.69	.60	.54	.67	.59	.53	.64	.57	.51	.61	.55	.50	.58	.53	.49	.46
5.0	.62	.53	.46	.60	.52	.46	.57	.50	.45	.55	.48	.43	.52	.47	.42	.40
6.0	.56	.47	.40	.54	.46	.40	.52	.45	.39	.50	.43	.38	.47	.42	.37	.35
7.0	.50	.42	.36	.49	.41	.35	.47	.40	.35	.45	.39	.34	.43	.38	.33	.31
8.0	.46	.38	.32	.45	.37	.32	.43	.36	.31	.41	.35	.30	.40	.34	.30	.28
9.0	.42	.34	.29	.41	.34	.28	.40	.33	.28	.38	.32	.27	.37	.31	.27	.25
10.0	.39	.31	.26	.38	.31	.26	.37	.30	.25	.35	.29	.25	.34	.29	.25	.23



C Range: 0 - 360DEG  
C Interval: 90.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JZ  
Test Date:2023-08-08

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.00.444  
Humidity:65.0%  
Test Distance:8.700m [K=1.0000]  
Remarks:

### WEC AND CCEC

Test:U:24.001V I:0.3412A P:8.1891W PF:1.0000 Freq:0Hz		
Lamp Flux:709.191x1 lm		
NAME: RIBDC-23-40K-AM	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: RAYHIL	SUR.: 0.01*0.6	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	.316	.180	.057	.307	.175	.056	.290	.167	.053	.275	.159	.051	.260	.151	.049		
2.0	.293	.160	.049	.285	.157	.048	.270	.150	.047	.256	.143	.045	.243	.137	.043		
3.0	.269	.143	.043	.262	.140	.042	.248	.135	.041	.236	.129	.040	.224	.124	.038		
4.0	.247	.128	.038	.241	.126	.037	.229	.121	.036	.217	.117	.035	.207	.112	.034		
5.0	.228	.116	.034	.222	.114	.033	.211	.110	.032	.201	.106	.032	.192	.103	.031		
6.0	.211	.106	.030	.206	.104	.030	.196	.101	.029	.187	.097	.029	.179	.094	.028		
7.0	.196	.097	.028	.192	.096	.027	.183	.092	.027	.175	.090	.026	.167	.087	.025		
8.0	.183	.090	.025	.179	.088	.025	.171	.085	.024	.164	.083	.024	.156	.080	.023		
9.0	.172	.083	.023	.168	.082	.023	.161	.079	.023	.154	.077	.022	.147	.075	.022		
10.0	.162	.077	.021	.158	.076	.021	.151	.074	.021	.145	.072	.020	.139	.070	.020		

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	.240	.240	.240	.205	.205	.205	.140	.140	.140	.080	.080	.080	.026	.026	.026	
1.0	.231	.206	.184	.197	.177	.158	.135	.122	.109	.078	.070	.064	.025	.023	.021	
2.0	.223	.182	.148	.191	.157	.128	.131	.108	.089	.075	.063	.052	.024	.020	.017	
3.0	.215	.165	.125	.184	.142	.108	.126	.099	.076	.073	.058	.045	.023	.019	.015	
4.0	.207	.152	.109	.178	.131	.095	.122	.091	.067	.071	.053	.040	.023	.017	.013	
5.0	.200	.141	.098	.171	.122	.086	.118	.085	.060	.068	.050	.036	.022	.016	.012	
6.0	.192	.133	.090	.165	.115	.079	.114	.081	.056	.066	.047	.033	.021	.016	.011	
7.0	.186	.126	.085	.160	.109	.074	.110	.077	.052	.064	.045	.031	.021	.015	.010	
8.0	.179	.120	.080	.154	.105	.070	.107	.073	.050	.062	.043	.030	.020	.014	.010	
9.0	.173	.116	.077	.149	.100	.067	.103	.071	.048	.060	.042	.028	.020	.014	.009	
10.0	.168	.111	.074	.144	.097	.065	.100	.068	.046	.058	.040	.027	.019	.013	.009	

C Range: 0 - 360DEG  
C Interval: 90.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JZ  
Test Date:2023-08-08

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.00.444  
Humidity:65.0%  
Test Distance:8.700m [K=1.0000]  
Remarks:

### UGR(Unified Glare Rating) Table

Test:U:24.001V I:0.3412A P:8.1891W PF:1.0000 Freq:0Hz										
Lamp Flux:709.191x1 lm										
NAME: RIBDC-23-40K-AM					TYPE:			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:		
MFR.: RAYHIL					SUR.: 0.01*0.6			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	25.7	27.2	26.1	27.5	27.8	25.8	27.3	26.2	27.6	27.9
3H	27.2	28.6	27.6	28.9	29.3	27.5	28.9	27.9	29.2	29.6
4H	27.8	29.1	28.2	29.4	29.8	28.3	29.6	28.7	29.9	30.3
6H	28.2	29.4	28.7	29.8	30.2	29.1	30.2	29.5	30.6	31.0
8H	28.4	29.5	28.8	29.9	30.3	29.4	30.5	29.8	30.9	31.4
12H	28.4	29.5	28.9	29.9	30.3	29.8	30.8	30.2	31.3	31.7
4H 2H	26.4	27.6	26.8	28.0	28.4	26.4	27.7	26.8	28.0	28.4
3H	28.1	29.1	28.5	29.5	30.0	28.3	29.4	28.8	29.8	30.3
4H	28.8	29.8	29.2	30.2	30.7	29.3	30.2	29.7	30.7	31.2
6H	29.3	30.2	29.8	30.7	31.2	30.1	31.0	30.6	31.5	32.0
8H	29.5	30.3	30.0	30.8	31.3	30.6	31.4	31.1	31.9	32.4
12H	29.6	30.4	30.1	30.8	31.4	31.0	31.8	31.5	32.3	32.8
8H 4H	29.1	29.9	29.6	30.4	30.9	29.5	30.3	30.0	30.8	31.4
6H	29.8	30.5	30.4	31.0	31.6	30.6	31.3	31.1	31.8	32.4
8H	30.1	30.7	30.7	31.2	31.8	31.1	31.7	31.7	32.3	32.9
12H	30.3	30.8	30.9	31.4	32.0	31.7	32.3	32.3	32.8	33.4
12H 4H	29.1	29.9	29.7	30.4	30.9	29.5	30.3	30.1	30.8	31.3
6H	29.9	30.5	30.5	31.1	31.7	30.7	31.3	31.2	31.8	32.4
8H	30.3	30.8	30.8	31.4	32.0	31.3	31.8	31.8	32.3	33.0
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 0.1 / - 0.2					+ 0.1 / - 0.2				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.1 / - 0.3					+ 0.1 / - 0.3				

CIE Pub.117, 709.2 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -1.2)  
Area: 0.006 m2

C Range: 0 - 360DEG  
C Interval: 90.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JZ  
Test Date:2023-08-08

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.00.444  
Humidity:65.0%  
Test Distance:8.700m [K=1.0000]  
Remarks:

### UTILIZATION FACTORS TABLE

Test:U:24.001V I:0.3412A P:8.1891W PF:1.0000 Freq:0Hz Lamp Flux:709.191x1 lm		
NAME: RIBDC-23-40K-AM	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: RAYHIL	SUR.: 0.01*0.6	Shielding Angle:

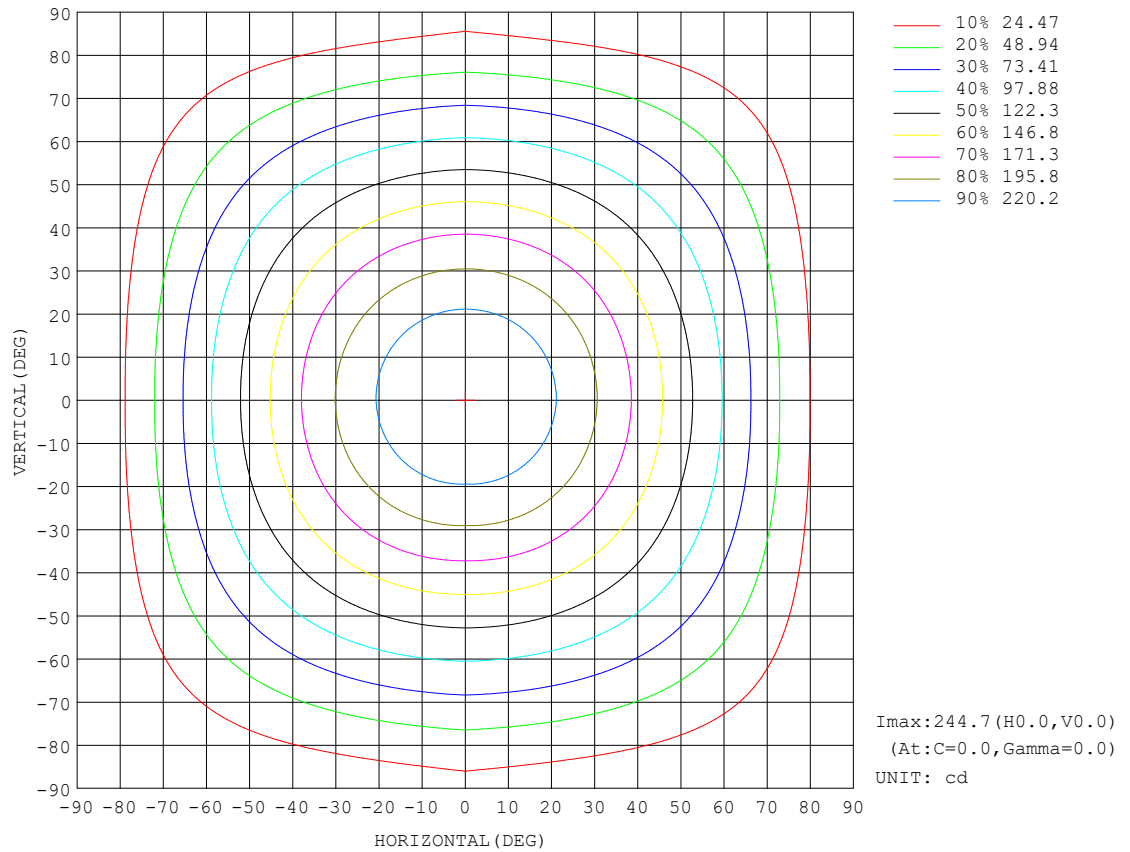
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT)    k(RI) x RCR = 5									
k = 0.60	56	44	37	55	44	37	53	43	37	30
0.80	66	54	47	64	53	46	62	52	46	39
1.00	74	62	55	72	62	55	70	63	54	46
1.25	81	70	63	79	69	62	76	67	61	53
1.50	86	75	68	84	74	67	80	72	66	58
2.00	92	84	77	90	82	76	86	79	74	65
2.50	96	88	82	94	86	81	89	83	78	68
3.00	100	93	87	97	91	85	92	87	82	72
4.00	104	98	93	101	96	91	96	91	88	77
5.00	106	101	97	103	99	95	98	94	91	80
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004										

C Range: 0 - 360DEG  
C Interval: 90.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JZ  
Test Date:2023-08-08

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.00.444  
Humidity:65.0%  
Test Distance:8.700m [K=1.0000]  
Remarks:

# ISOCANDELA DIAGRAM

Test:U:24.001V I:0.3412A P:8.1891W PF:1.0000 Freq:0Hz Lamp Flux:709.19lx1 lm		
NAME: RIBDC-23-40K-AM	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: RAYHIL	SUR.: 0.01*0.6	Shielding Angle:



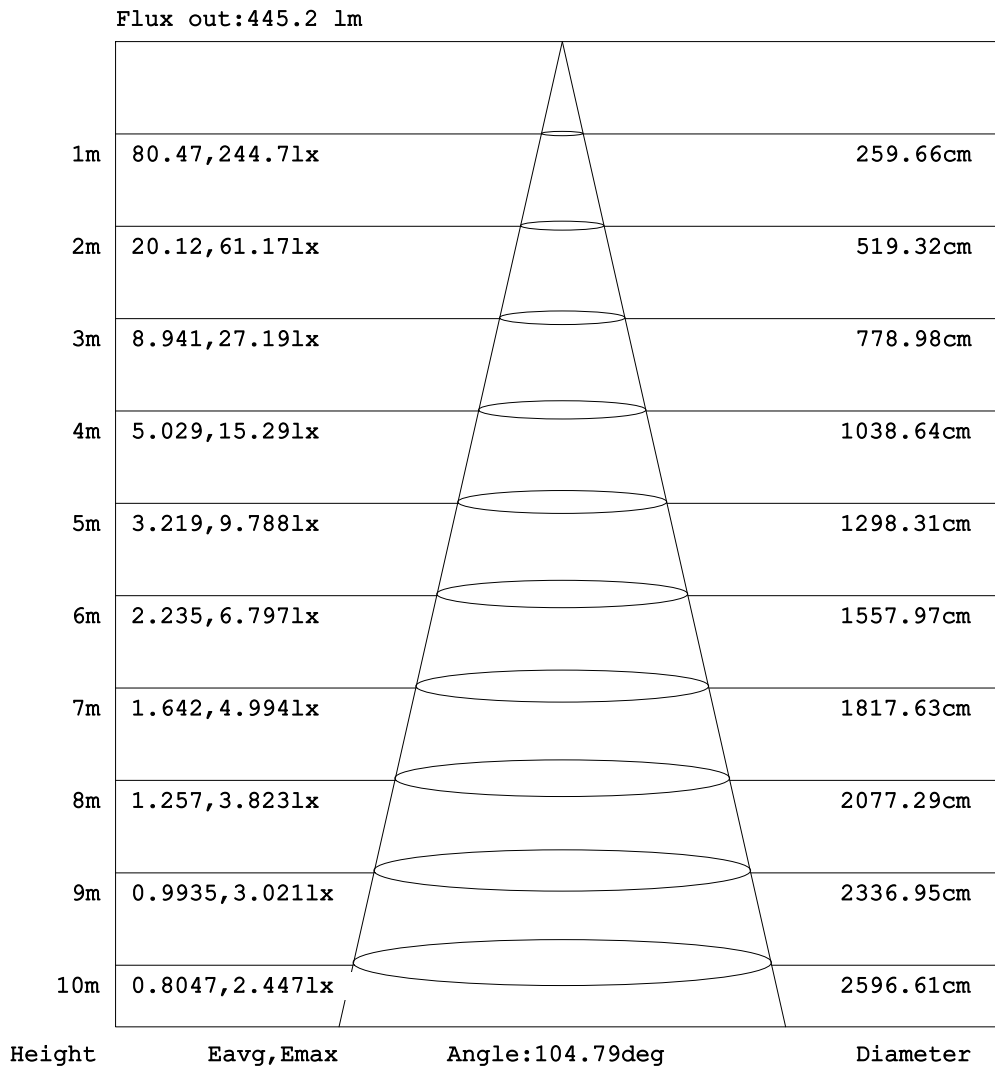
C Range: 0 - 360DEG  
C Interval: 90.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JZ  
Test Date:2023-08-08

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.00.444  
Humidity:65.0%  
Test Distance:8.700m [K=1.0000]  
Remarks:



**AAI Figure**

Test:U:24.001V I:0.3412A P:8.1891W PF:1.0000 Freq:0Hz Lamp Flux:709.191x1 lm		
NAME: RIBDC-23-40K-AM	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: RAYHIL	SUR.: 0.01*0.6	Shielding Angle:



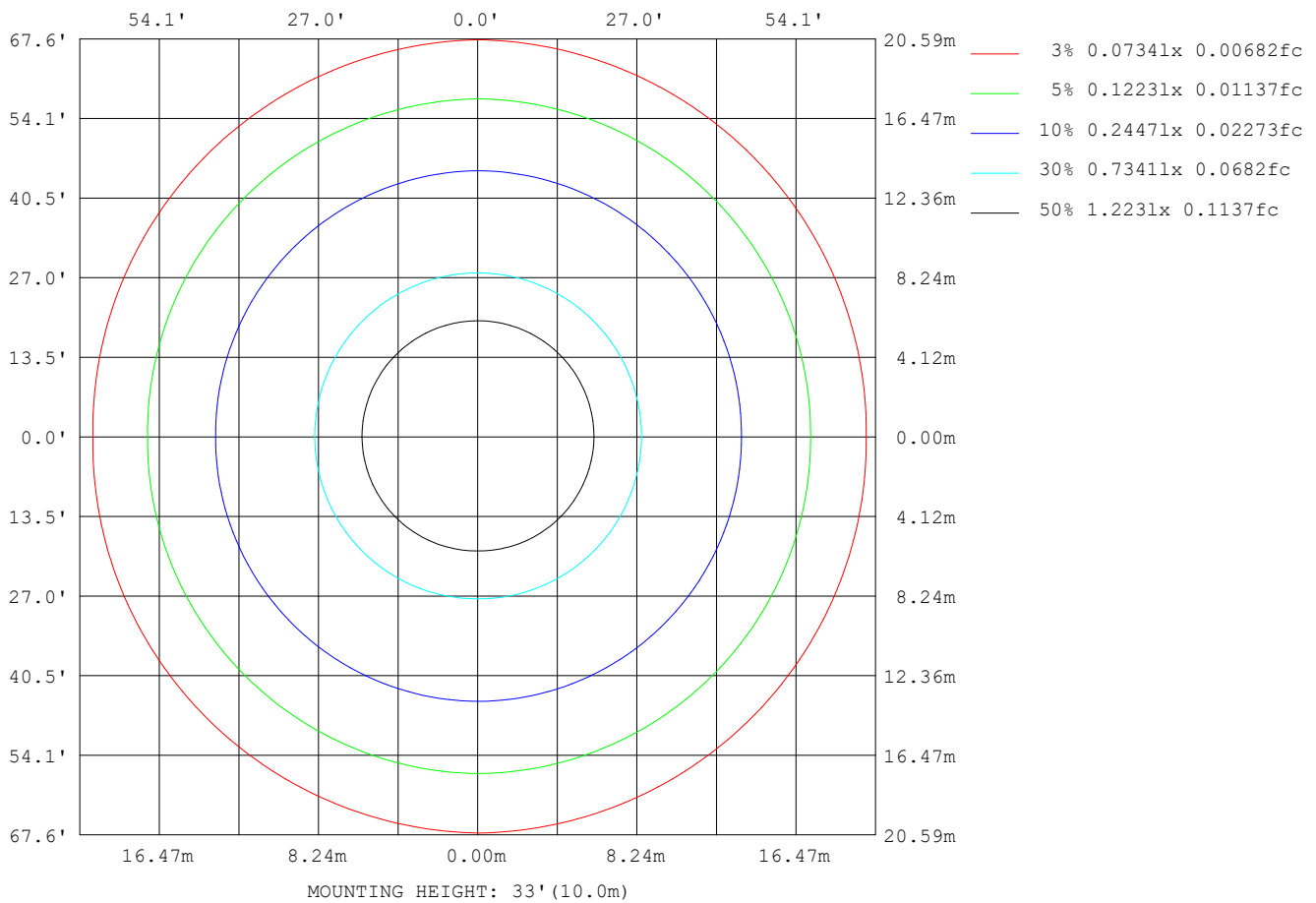
**Note:**The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 90.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JZ  
Test Date:2023-08-08

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.00.444  
Humidity:65.0%  
Test Distance:8.700m [K=1.0000]  
Remarks:

### ISOLUX DIAGRAM

Test:U:24.001V I:0.3412A P:8.1891W PF:1.0000 Freq:0Hz Lamp Flux:709.191x1 lm		
NAME: RIBDC-23-40K-AM	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: RAYHIL	SUR.: 0.01*0.6	Shielding Angle:



C Range: 0 - 360DEG  
C Interval: 90.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JZ  
Test Date:2023-08-08

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.00.444  
Humidity:65.0%  
Test Distance:8.700m [K=1.0000]  
Remarks:

### LED Avg.L Report

Test:U:24.001V I:0.3412A P:8.1891W PF:1.0000 Freq:0Hz Lamp Flux:709.191x1 lm		
NAME: RIBDC-23-40K-AM	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: RAYHIL	SUR.: 0.01*0.6	Shielding Angle:

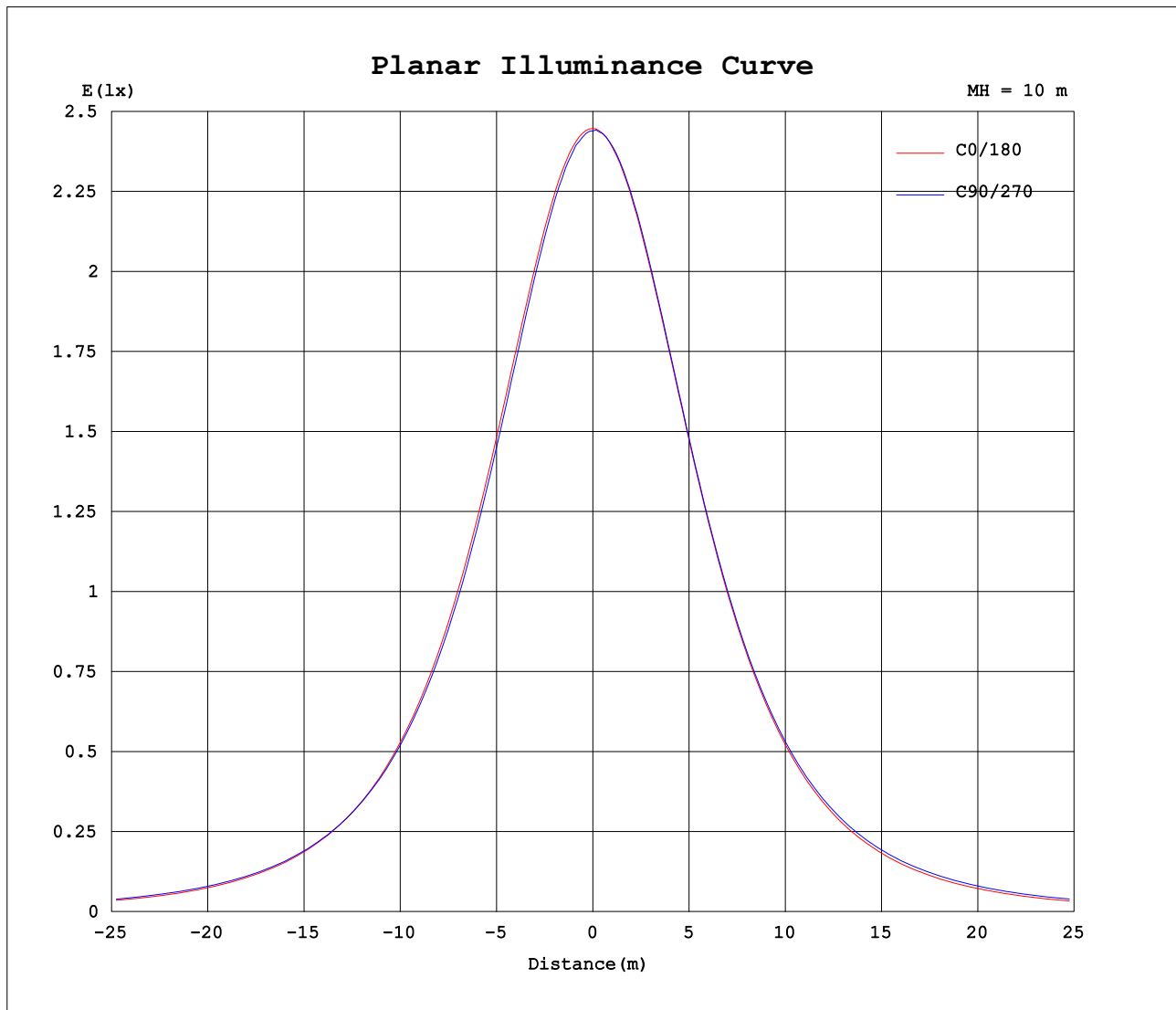
AvgL	cd/m2
L_0~180 (65) av	30132
L_0~180 (75) av	25508
L_0~180 (85) av	15267
L_90~270 (65) av	33199
L_90~270 (75) av	34007
L_90~270 (85) av	49823
L_45 (65) av	32012
L_45 (75) av	30748
L_45 (85) av	36690

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 90.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JZ  
Test Date:2023-08-08

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.00.444  
Humidity:65.0%  
Test Distance:8.700m [K=1.0000]  
Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 90.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: JZ  
Test Date: 2023-08-08

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.00.444  
Humidity: 65.0%  
Test Distance: 8.700m [K=1.0000]  
Remarks:

### LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:24.001V I:0.3412A P:8.1891W PF:1.0000 Freq:0Hz Lamp Flux:709.191x1 lm		
NAME: RIBDC-23-40K-AM	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: RAYHIL	SUR.: 0.01*0.6	Shielding Angle:

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	90	180	270														
0	245	244	245	244														
5	243	242	243	243														
10	239	237	239	239														
15	232	229	231	232														
20	223	219	222	223														
25	211	207	210	211														
30	198	193	196	197														
35	183	178	181	182														
40	166	163	165	167														
45	149	147	148	150														
50	132	131	130	134														
55	114	115	112	117														
60	96.2	99.6	93.5	101														
65	77.9	84.0	74.9	84.4														
70	59.5	68.5	56.2	68.2														
75	41.4	53.3	37.8	52.3														
80	24.2	38.8	20.5	37.6														
85	9.44	26.6	6.53	25.5														
90	0.71	19.4	0.33	19.9														
95	0.23	19.0	0.29	19.4														
100	0.20	18.8	0.31	19.3														
105	0.34	18.6	0.35	19.0														
110	0.40	18.3	0.43	18.7														
115	0.46	17.9	0.49	18.2														
120	0.49	17.4	0.57	17.5														
125	0.57	16.7	0.63	16.6														
130	0.60	15.9	0.68	15.2														
135	0.69	14.9	0.76	13.3														
140	0.75	12.7	0.84	10.2														
145	0.81	4.28	0.90	1.68														
150	0.90	0.96	0.97	0.89														
155	0.92	1.02	1.02	0.93														
160	0.99	1.07	1.08	0.97														
165	1.06	1.12	1.10	1.02														
170	1.15	1.18	1.14	1.15														
175	1.17	1.19	1.18	1.18														
180	1.18	1.19	1.18	1.18														

C Range: 0 - 360DEG  
C Interval: 90.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:JZ  
Test Date:2023-08-08

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
γ Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.00.444  
Humidity:65.0%  
Test Distance:8.700m [K=1.0000]  
Remarks: