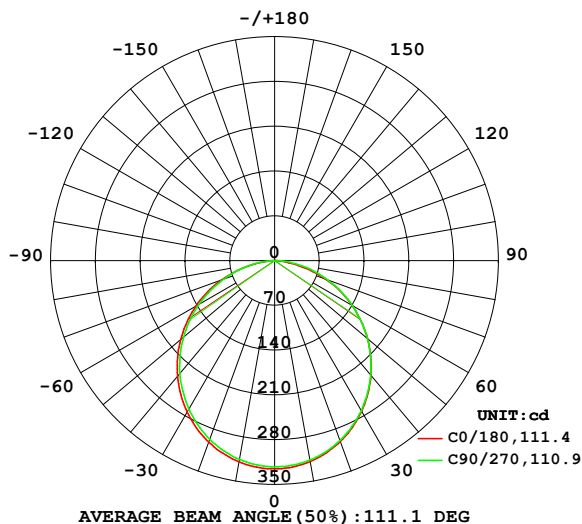


LUMINAIRE PHOTOMETRIC TEST REPORT

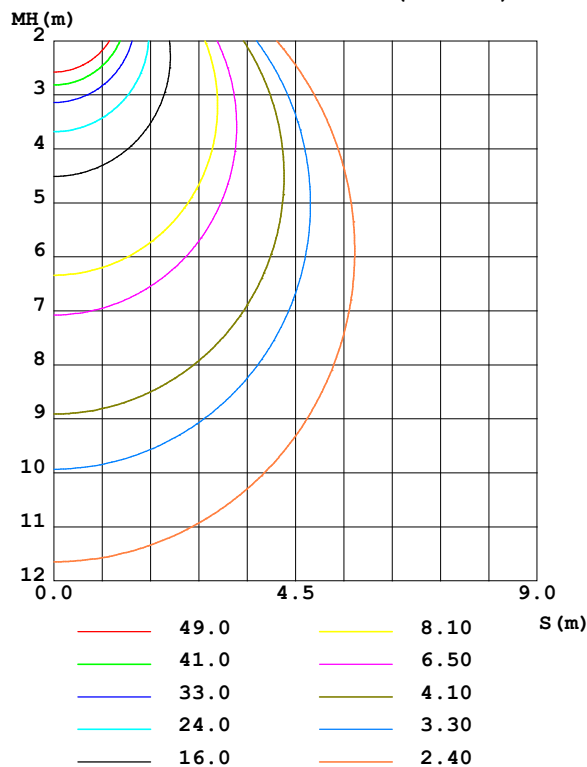
Test:U:119.82V I:0.1023A P:12.009W PF:0.9794 Freq:59.98Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:904.1lx1 lm		
NAME: RENO-4-S12W-MCCT-WH	TYPE:	WEIGHT:
SPEC.: 3000K	DIM.:	SERIAL No.:
MFR.: RENO	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 75.28 lm/W
MODEL	RENO-4-S12W-MCCT-WH	I _{max} (cd)	325.5	S/MH(C0/180)	1.25	
NOMINAL POWER(W)	12	LOR(%)	100.0	S/MH(C90/270)	1.24	
RATED VOLTAGE(V)	120.0	TOTAL FLUX(lm)	904.10	η UP,DN(C0-180)	0.0,50.4	
NOMINAL FLUX(lm)	904.1	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,49.6	
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25	
TEST VOLTAGE(V)	120	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:24.3℃
Operators:
Test Date:2023-08-24

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.460
Humidity:65.0%
Test Distance:3.080m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

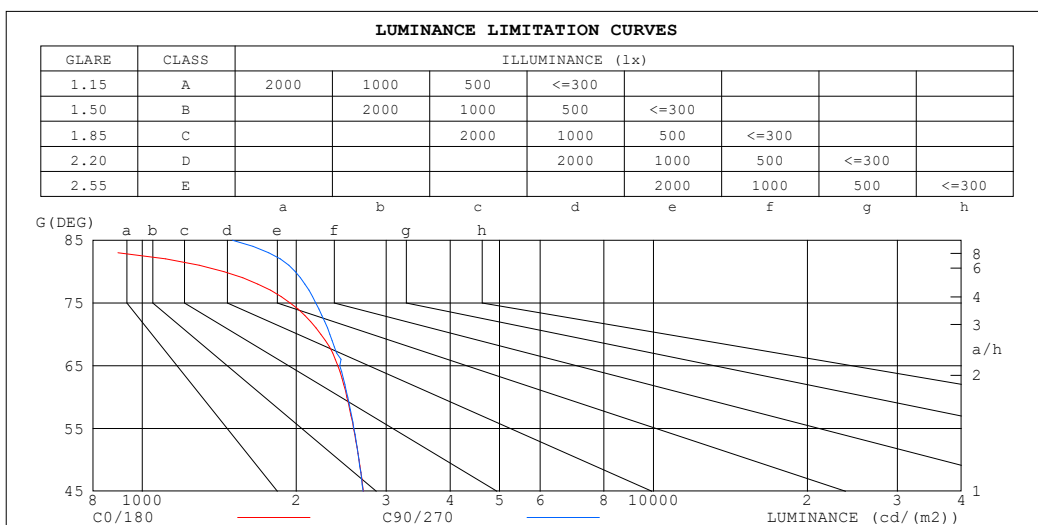
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	319.0	317.7	316.7	316.1	319.5	317.0	315.7	315.1	0- 10	30.54	30.54	3.38,3.38
20	300.9	299.9	299.3	298.4	301.7	298.7	297.2	296.9	10- 20	87.24	117.8	13,13
30	272.0	271.7	271.0	270.2	273.4	269.7	268.1	268.2	20- 30	131.7	249.5	27.6,27.6
40	234.3	234.5	233.8	233.3	236.2	232.4	230.5	231.0	30- 40	158.0	407.4	45.1,45.1
50	189.6	190.0	189.4	189.3	191.7	187.7	185.8	186.5	40- 50	163.1	570.6	63.1,63.1
60	139.6	140.4	140.1	140.1	141.8	138.0	136.3	137.1	50- 60	146.8	717.4	79.3,79.3
70	84.95	88.29	88.47	88.11	88.19	86.00	84.48	84.14	60- 70	111.8	829.2	91.7,91.7
80	27.86	34.10	38.41	33.51	30.97	32.88	35.29	29.67	70- 80	62.69	891.9	98.7,98.7
90	0.3390	0.3665	0.4194	0.3610	0.2204	0.2289	0.2529	0.2170	80- 90	12.17	904.1	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		

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:24.3℃
Operators:
Test Date:2023-08-24

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.460
Humidity:65.0%
Test Distance:3.080m [K=1.0000]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:119.82V I:0.1023A P:12.009W PF:0.9794 Freq:59.98Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:904.1x1 lm		
NAME: RENO-4-S12W-MCCT-WH	TYPE:	WEIGHT:
SPEC.: 3000K	DIM.:	SERIAL No.:
MFR.: RENO	SUR.:	Shielding Angle:



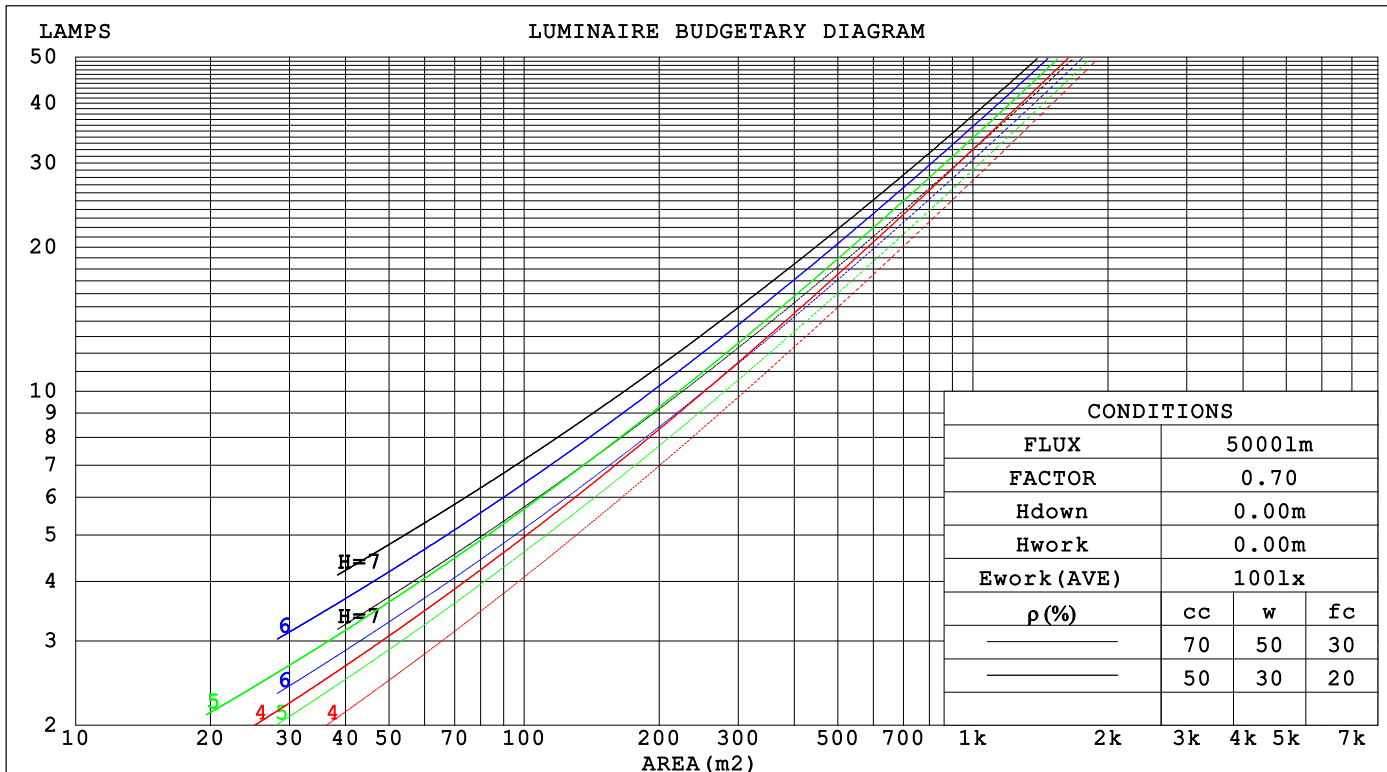
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 24.3°C
Operators:
Test Date: 2023-08-24

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-SPEX500_V1 SYSTEM V2.00.460
Humidity: 65.0%
Test Distance: 3.080m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:119.82V I:0.1023A P:12.009W PF:0.9794 Freq:59.98Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:904.1x1 lm		
NAME: RENO-4-S12W-MCCT-WH	TYPE:	WEIGHT:
SPEC.: 3000K	DIM.:	SERIAL No.:
MFR.: RENO	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			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	1.04	.00	.96	1.02	.98	.95	.98	.94	.92	.94	.91	.89	.90	.88	.86	.84
2.0	.91	.84	.78	.89	.83	.77	.85	.80	.76	.82	.78	.74	.79	.75	.72	.70
3.0	.80	.72	.65	.78	.71	.64	.75	.69	.63	.72	.67	.62	.70	.65	.61	.59
4.0	.71	.62	.55	.69	.61	.55	.67	.60	.54	.64	.58	.53	.62	.57	.52	.50
5.0	.63	.54	.47	.62	.53	.47	.60	.52	.47	.58	.51	.46	.56	.50	.46	.43
6.0	.57	.48	.41	.56	.47	.41	.54	.46	.41	.52	.46	.40	.51	.45	.40	.38
7.0	.51	.43	.36	.51	.42	.36	.49	.42	.36	.48	.41	.36	.46	.40	.36	.34
8.0	.47	.38	.33	.46	.38	.32	.45	.37	.32	.44	.37	.32	.42	.36	.32	.30
9.0	.43	.35	.29	.42	.35	.29	.41	.34	.29	.40	.34	.29	.39	.33	.29	.27
10.0	.40	.32	.27	.39	.32	.26	.38	.31	.26	.37	.31	.26	.36	.30	.26	.24



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:24.3℃
Operators:
Test Date:2023-08-24

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.460
Humidity:65.0%
Test Distance:3.080m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:119.82V I:0.1023A P:12.009W PF:0.9794 Freq:59.98Hz			UTHDi:0.00% ITHDi:0.00% KDisp:0			Lamp Flux:904.1x1 lm		
NAME: RENO-4-S12W-MCCT-WH			TYPE:			WEIGHT:		
SPEC.: 3000K			DIM.:			SERIAL No.:		
MFR.: RENO			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	.304	.173	.055	.297	.169	.054	.283	.163	.052	.271	.156	.050	.260	.151	.049															
2.0	.288	.158	.048	.282	.155	.048	.271	.150	.047	.260	.146	.046	.250	.141	.045															
3.0	.268	.143	.043	.262	.141	.042	.252	.137	.042	.243	.133	.041	.234	.129	.040															
4.0	.248	.129	.038	.243	.127	.038	.234	.124	.037	.225	.121	.036	.217	.118	.036															
5.0	.229	.117	.034	.225	.115	.034	.217	.113	.033	.209	.110	.033	.202	.108	.032															
6.0	.213	.107	.031	.209	.106	.030	.202	.103	.030	.195	.101	.030	.189	.099	.029															
7.0	.198	.098	.028	.195	.097	.028	.188	.095	.027	.182	.093	.027	.177	.092	.027															
8.0	.185	.090	.025	.182	.090	.025	.176	.088	.025	.171	.087	.025	.166	.085	.025															
9.0	.174	.084	.023	.171	.083	.023	.166	.082	.023	.161	.081	.023	.156	.079	.023															
10.0	.163	.078	.022	.161	.078	.022	.156	.076	.022	.152	.075	.021	.147	.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	.172	.132	.098	.147	.114	.085	.101	.079	.059	.058	.046	.035	.019	.015	.011	
3.0	.164	.114	.075	.141	.099	.065	.097	.068	.045	.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	.149	.091	.047	.128	.078	.041	.088	.055	.029	.051	.032	.017	.016	.010	.006	
6.0	.142	.082	.039	.122	.071	.034	.084	.050	.024	.049	.029	.014	.016	.010	.005	
7.0	.135	.075	.033	.116	.065	.029	.080	.046	.021	.047	.027	.012	.015	.009	.004	
8.0	.129	.069	.029	.111	.060	.025	.077	.042	.018	.045	.025	.011	.014	.008	.004	
9.0	.123	.065	.025	.106	.056	.022	.073	.039	.016	.043	.023	.009	.014	.008	.003	
10.0	.117	.060	.022	.101	.052	.020	.070	.037	.014	.041	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:24.3℃
Operators:
Test Date:2023-08-24

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.460
Humidity:65.0%
Test Distance:3.080m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:119.82V I:0.1023A P:12.009W PF:0.9794 Freq:59.98Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:904.1x1 lm										
NAME: RENO-4-S12W-MCCT-WH					TYPE:			WEIGHT:		
SPEC.: 3000K					DIM.:			SERIAL No.:		
MFR.: RENO					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	16.6	18.1	16.9	18.3	18.5	16.6	18.1	16.9	18.3	18.5
3H	18.1	19.5	18.4	19.7	20.0	18.2	19.6	18.5	19.8	20.0
4H	18.6	19.9	18.9	20.2	20.5	18.8	20.1	19.1	20.4	20.6
6H	18.9	20.2	19.2	20.4	20.7	19.2	20.5	19.6	20.8	21.0
8H	18.9	20.2	19.3	20.4	20.7	19.4	20.6	19.7	20.9	21.2
12H	18.9	20.1	19.3	20.4	20.7	19.4	20.6	19.8	20.9	21.2
4H 2H	17.2	18.5	17.5	18.8	19.1	17.2	18.6	17.5	18.8	19.1
3H	18.9	20.1	19.2	20.3	20.7	19.0	20.1	19.3	20.4	20.7
4H	19.5	20.6	19.9	20.9	21.3	19.7	20.8	20.1	21.1	21.4
6H	19.9	20.9	20.3	21.2	21.6	20.3	21.2	20.7	21.6	22.0
8H	20.0	20.9	20.4	21.3	21.6	20.5	21.4	20.9	21.7	22.1
12H	20.0	20.8	20.4	21.2	21.6	20.6	21.4	21.0	21.8	22.2
8H 4H	19.8	20.7	20.2	21.1	21.4	20.0	20.8	20.4	21.2	21.6
6H	20.3	21.1	20.8	21.5	21.9	20.7	21.4	21.1	21.8	22.3
8H	20.4	21.1	20.9	21.5	22.0	21.0	21.6	21.4	22.0	22.5
12H	20.4	21.0	20.9	21.5	21.9	21.1	21.7	21.6	22.1	22.6
12H 4H	19.8	20.6	20.2	21.0	21.4	20.0	20.8	20.4	21.2	21.6
6H	20.4	21.0	20.8	21.4	21.9	20.7	21.4	21.2	21.8	22.3
8H	20.5	21.1	21.0	21.5	22.0	21.0	21.6	21.5	22.0	22.5
Variations with the observer position at spacings(CIE Pub.117):										
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, 904.1 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -0.4)
Area: 0.111111 m2

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:24.3℃
Operators:
Test Date:2023-08-24

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.460
Humidity:65.0%
Test Distance:3.080m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:119.82V I:0.1023A P:12.009W PF:0.9794 Freq:59.98Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:904.1x1 lm		
NAME: RENO-4-S12W-MCCT-WH	TYPE:	WEIGHT:
SPEC.: 3000K	DIM.:	SERIAL No.:
MFR.: RENO	SUR.:	Shielding Angle:

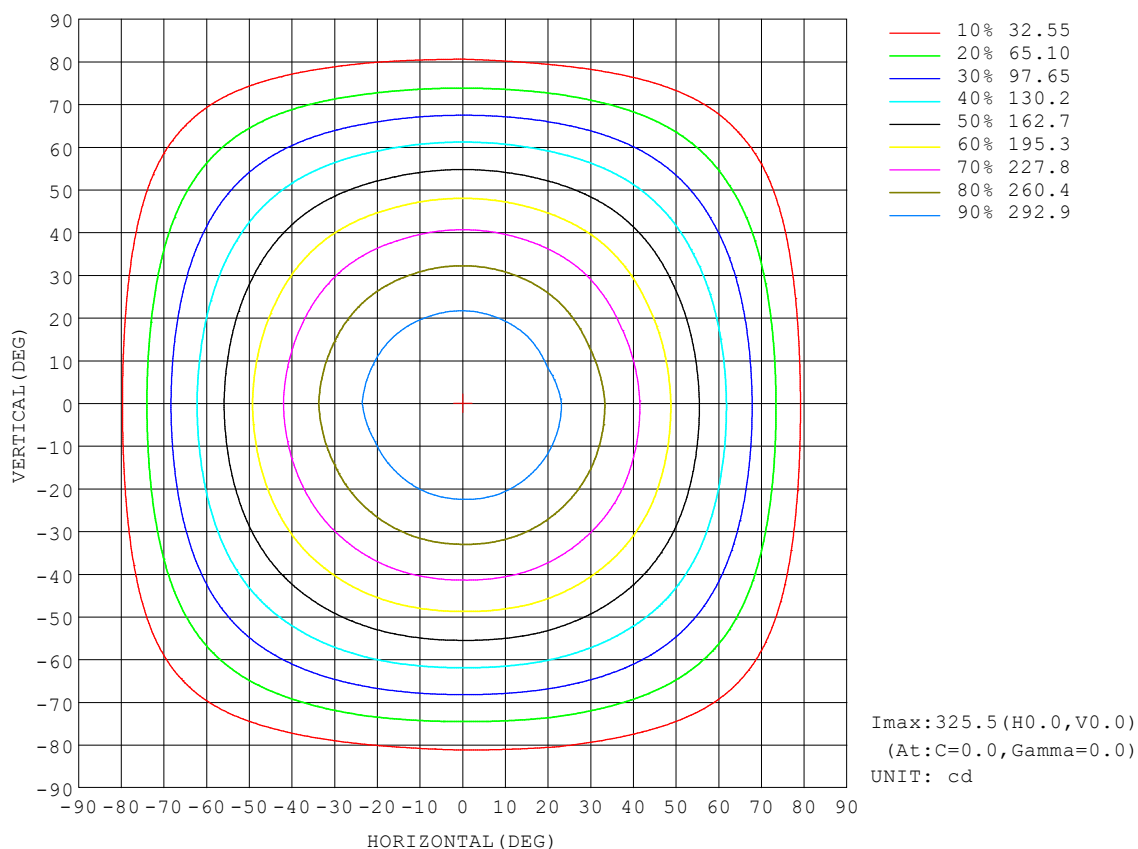
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	58	46	39	57	46	39	56	45	39	33
0.80	68	56	49	67	56	49	65	55	48	41
1.00	76	65	58	75	65	58	73	66	57	50
1.25	83	73	66	82	72	65	79	71	65	57
1.50	88	79	72	87	78	71	84	76	70	63
2.00	95	87	80	93	86	80	90	83	78	70
2.50	99	91	85	97	90	85	93	87	83	74
3.00	103	96	90	100	94	89	96	91	87	79
4.00	106	101	96	104	99	95	100	96	92	83
5.00	109	104	100	106	102	99	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: 22.5DEG
Test Speed: HIGH
Temperature: 24.3°C
Operators:
Test Date: 2023-08-24

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-SPEX500_V1 SYSTEM V2.00.460
Humidity: 65.0%
Test Distance: 3.080m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:119.82V I:0.1023A P:12.009W PF:0.9794 Freq:59.98Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:904.1x1 lm		
NAME: RENO-4-S12W-MCCT-WH	TYPE:	WEIGHT:
SPEC.: 3000K	DIM.:	SERIAL No.:
MFR.: RENO	SUR.:	Shielding Angle:

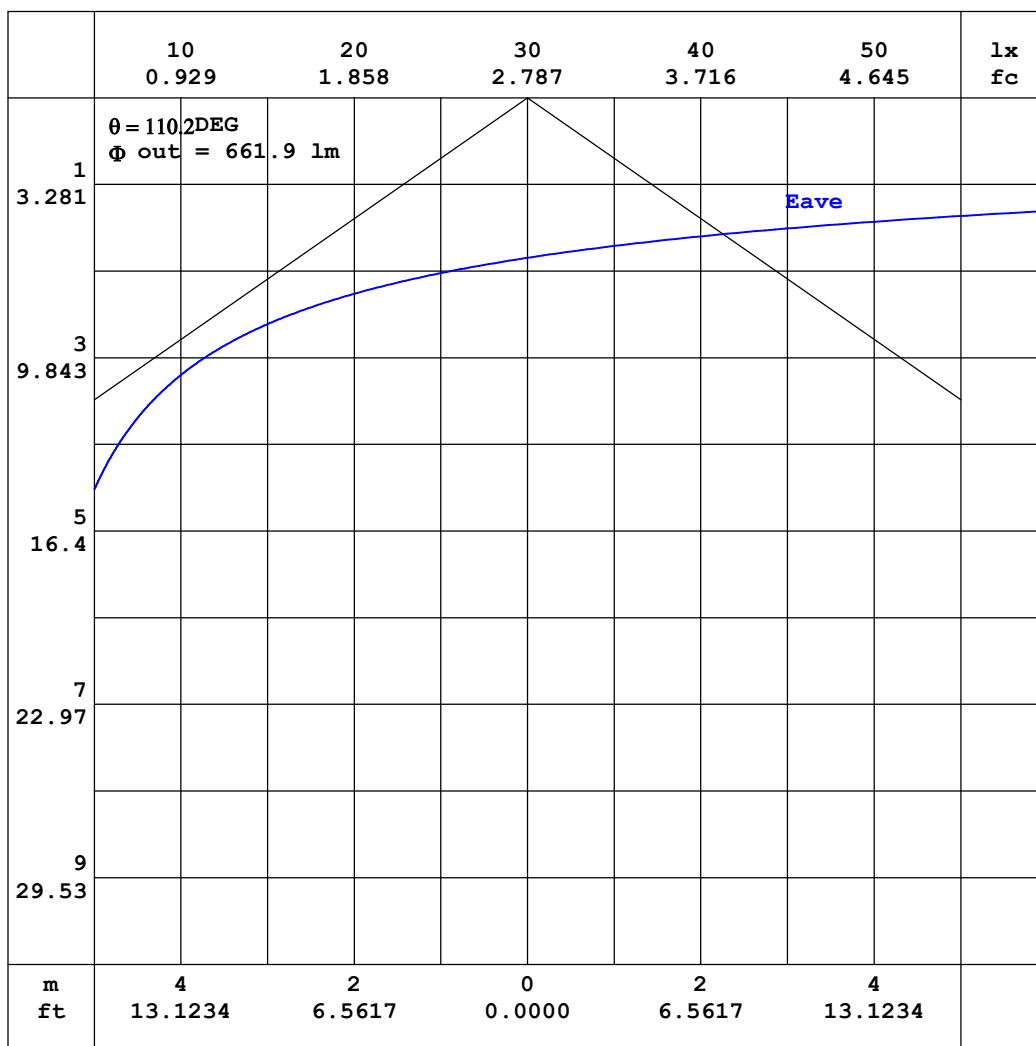


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:24.3℃
Operators:
Test Date:2023-08-24

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.460
Humidity:65.0%
Test Distance:3.080m [K=1.0000]
Remarks:

AAI CURVES

Test:U:119.82V I:0.1023A P:12.009W PF:0.9794 Freq:59.98Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:904.1x1 lm		
NAME: RENO-4-S12W-MCCT-WH	TYPE:	WEIGHT:
SPEC.: 3000K	DIM.:	SERIAL No.:
MFR.: RENO	SUR.:	Shielding Angle:



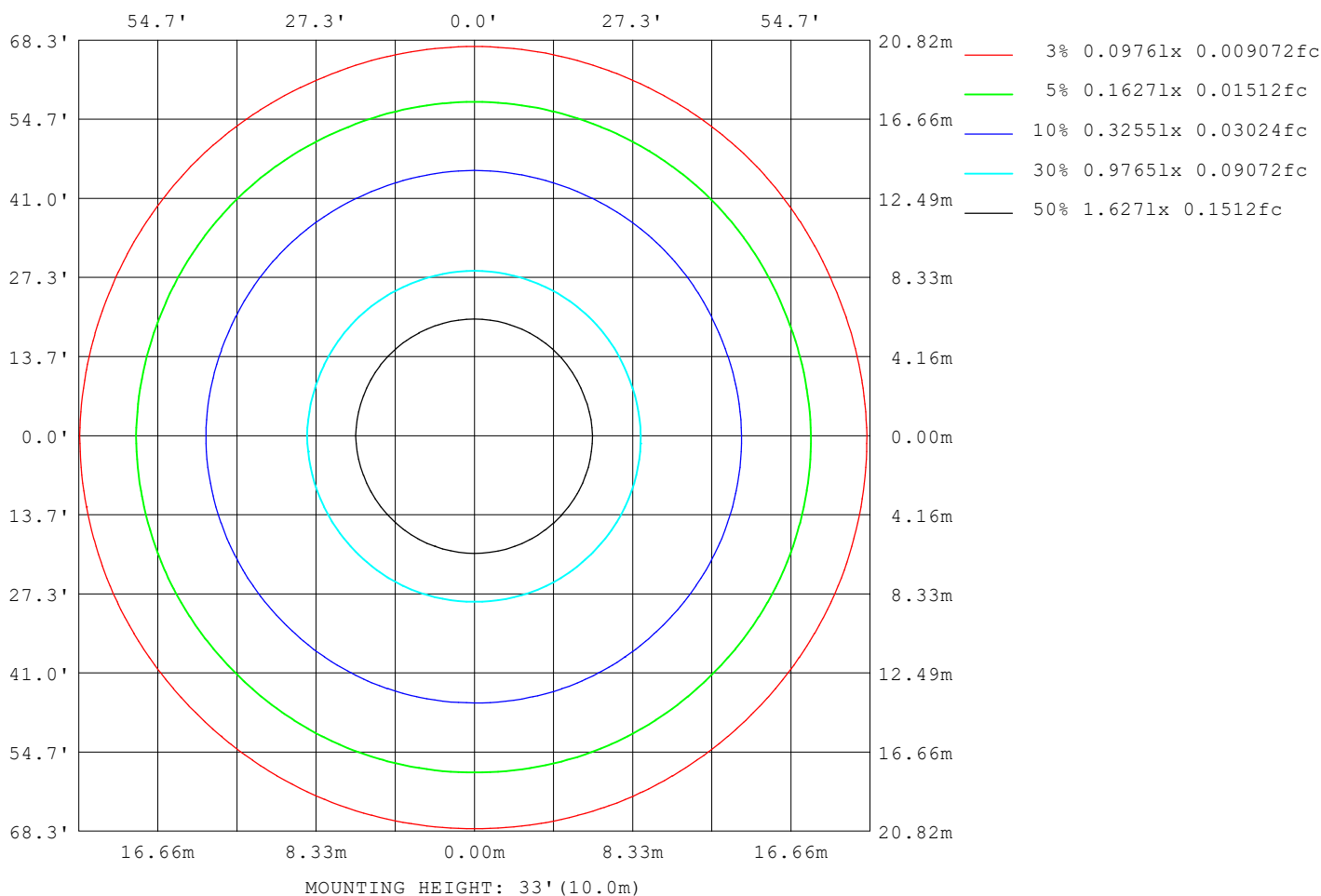
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 24.3°C
Operators:
Test Date: 2023-08-24

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-SPEX500_V1 SYSTEM V2.00.460
Humidity: 65.0%
Test Distance: 3.080m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

Test: U:119.82V I:0.1023A P:12.009W PF:0.9794 Freq:59.98Hz UTHDi: 0.00% ITHDi: 0.00% KDisp: 0 Lamp Flux: 904.1x1 lm		
NAME: RENO-4-S12W-MCCT-WH	TYPE:	WEIGHT:
SPEC.: 3000K	DIM.:	SERIAL No.:
MFR.: RENO	SUR.:	Shielding Angle:



C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 24.3°C
 Operators:
 Test Date: 2023-08-24

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-SPEX500_V1 SYSTEM V2.00.460
 Humidity: 65.0%
 Test Distance: 3.080m [K=1.0000]
 Remarks:

LED Avg.L Report

Test:U:119.82V I:0.1023A P:12.009W PF:0.9794 Freq:59.98Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:904.1x1 lm		
NAME: RENO-4-S12W-MCCT-WH	TYPE:	WEIGHT:
SPEC.: 3000K	DIM.:	SERIAL No.:
MFR.: RENO	SUR.:	Shielding Angle:

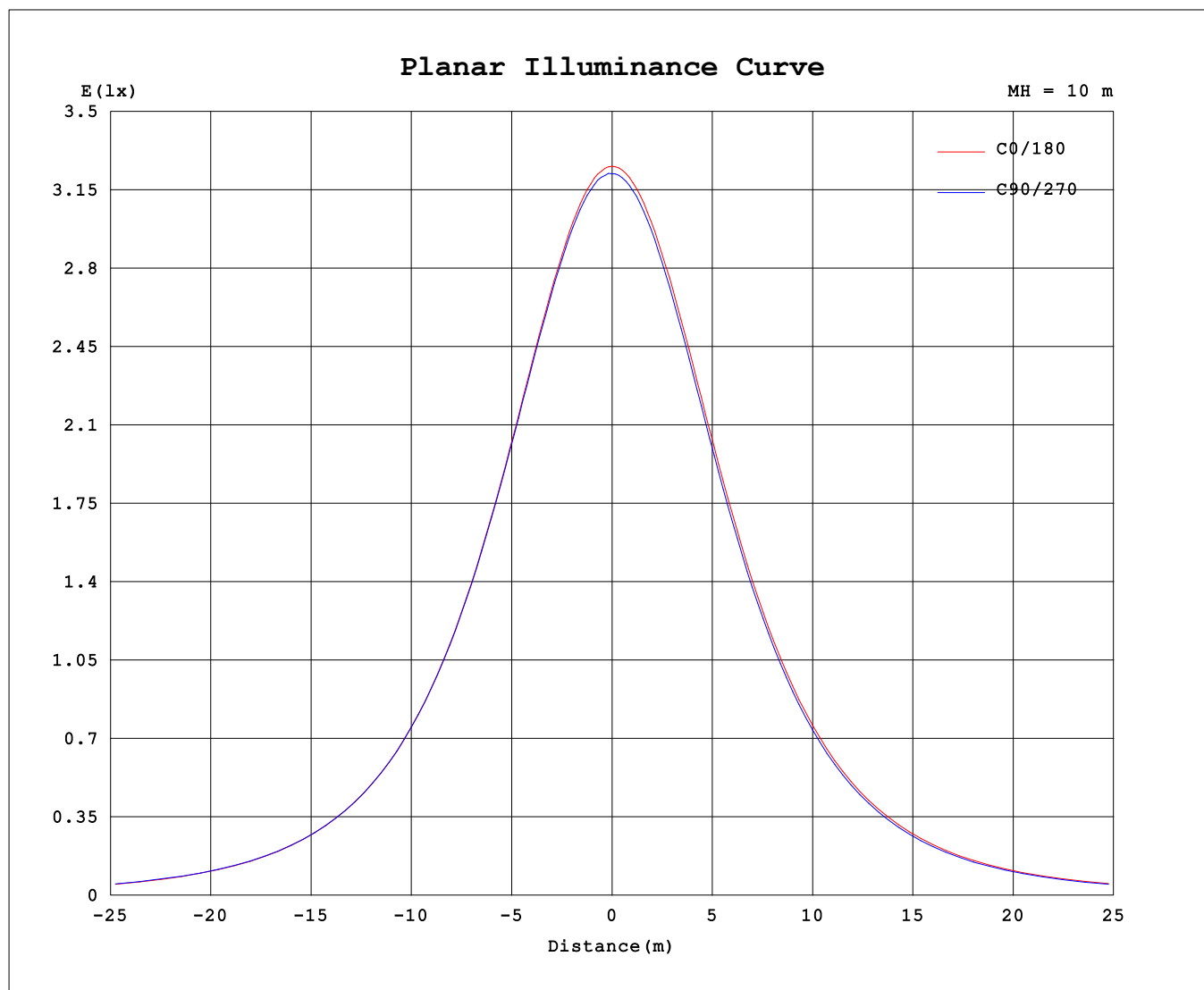
AvgL	cd/m2
L_0~180 (65) av	2438
L_0~180 (75) av	2003
L_0~180 (85) av	447
L_90~270 (65) av	2392
L_90~270 (75) av	2120
L_90~270 (85) av	1381
L_45 (65) av	2406
L_45 (75) av	2066
L_45 (85) av	748

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:24.3℃
Operators:
Test Date:2023-08-24

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.460
Humidity:65.0%
Test Distance:3.080m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 24.3 °C
Operators:
Test Date: 2023-08-24

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-SPEX500_V1 SYSTEM V2.00.460
Humidity: 65.0%
Test Distance: 3.080m [K=1.0000]
Remarks:

Test:U:119.82V I:0.1023A P:12.009W PF:0.9794 Freq:59.98Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:904.1x1 lm		
NAME: RENO-4-S12W-MCCT-WH	TYPE:	WEIGHT:
SPEC.: 3000K	DIM.:	SERIAL No.:
MFR.: RENO	SUR.:	Shielding Angle:

UNIT: cd

[illegible]

```

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.460
Humidity:65.0%
Test Distance:3.080m [K=1.0000]
Remarks:

```