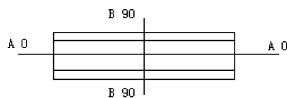
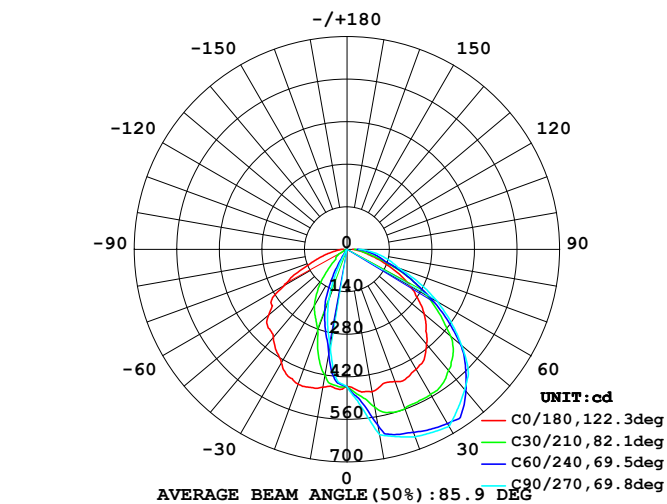


## LUMINAIRE PHOTOMETRIC TEST REPORT

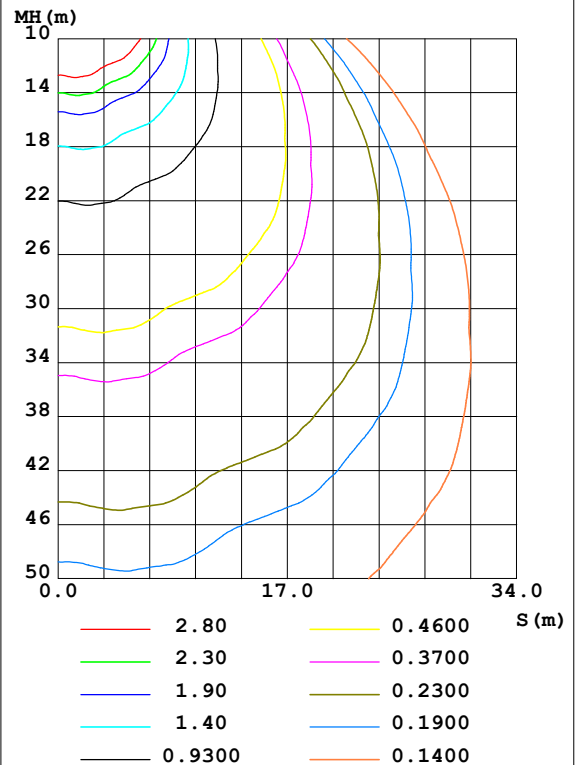
NAME: REL7LED AC mode		WEIGHT:
SPEC.:	DIM.:	SERIAL No.:2021081110
	SUR.:0.0001	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 85.65 lm/W
MODEL	REL7LED AC mode	I <sub>max</sub> (cd)	685.8	S/MH (C0/180)	1.40	
NOMINAL POWER (W)		LOR (%)	100.0	S/MH (C90/270)	0.54	
RATED VOLTAGE (V)	120	TOTAL FLUX (lm)	1227.0	η UP, DN (C0-180)	0.0, 79.9	
NOMINAL FLUX (lm)	1227.03	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 20.1	
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.00	
TEST VOLTAGE (V)	120	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: 5.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: WLM  
 Test Date: 2021-08-11

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000H\_V1 SYSTEM V2.0.287  
 Humidity: 65.0%  
 Test Distance: 13.693m [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
5	468.8	489.2	516.6	501.5	459.0	444.1	424.2	453.5	0- 5	11.11	11.11	0.91,0.91
10	475.8	559.1	619.9	563.6	460.7	387.6	322.4	380.6	5- 10	33.79	44.90	3.66,3.66
15	457.9	606.1	638.3	618.1	470.7	295.2	249.4	298.4	10- 15	55.42	100.3	8.18,8.18
20	463.1	607.0	656.6	616.4	472.3	245.0	176.4	247.0	15- 20	73.65	174.0	14.2,14.2
25	466.3	609.6	664.5	614.3	461.0	203.2	92.68	194.4	20- 25	88.62	262.6	21.4,21.4
30	455.4	615.1	672.5	612.0	431.6	141.9	8.926	139.4	25- 30	99.84	362.4	29.5,29.5
35	442.8	613.5	637.6	599.3	407.3	71.24	6.843	71.11	30- 35	107.2	469.6	38.3,38.3
40	407.7	595.0	602.7	576.6	377.2	16.02	4.759	12.99	35- 40	112.3	581.9	47.4,47.4
45	368.3	528.3	563.8	513.8	366.3	14.81	2.849	12.42	40- 45	113.7	695.6	56.7,56.7
50	331.5	461.9	492.8	440.6	337.6	12.04	2.322	11.30	45- 50	111.1	806.7	65.7,65.7
55	285.4	392.4	417.8	368.9	306.1	6.485	1.968	6.814	50- 55	103.3	910.0	74.2,74.2
60	238.7	305.0	342.8	284.1	238.9	5.205	1.615	5.436	55- 60	90.51	1000	81.5,81.5
65	183.9	219.8	261.8	199.9	179.6	4.406	1.453	4.506	60- 65	73.55	1074	87.5,87.5
70	129.3	146.6	180.8	130.9	117.9	3.622	1.292	3.668	65- 70	55.17	1129	92,92
75	82.76	88.86	145.5	80.92	79.62	2.838	1.107	2.880	70- 75	38.82	1168	95.2,95.2
80	55.32	65.77	110.2	59.48	46.82	2.355	0.9227	2.290	75- 80	27.49	1196	97.4,97.4
85	31.73	47.59	74.87	43.15	26.12	1.771	0.7381	1.580	80- 85	19.20	1215	99,99
90	18.04	29.85	39.58	27.84	11.28	1.096	0.5536	0.7725	85- 90	12.33	1227	100,100
95									90- 95			
100									95-100			
105									100-105			
110									105-110			
115									110-115			
120									115-120			
125									120-125			
130									125-130			
135									130-135			
140									135-140			
145									140-145			
150									145-150			
155									150-155			
160									155-160			
165									160-165			
170									165-170			
175									170-175			
180									175-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

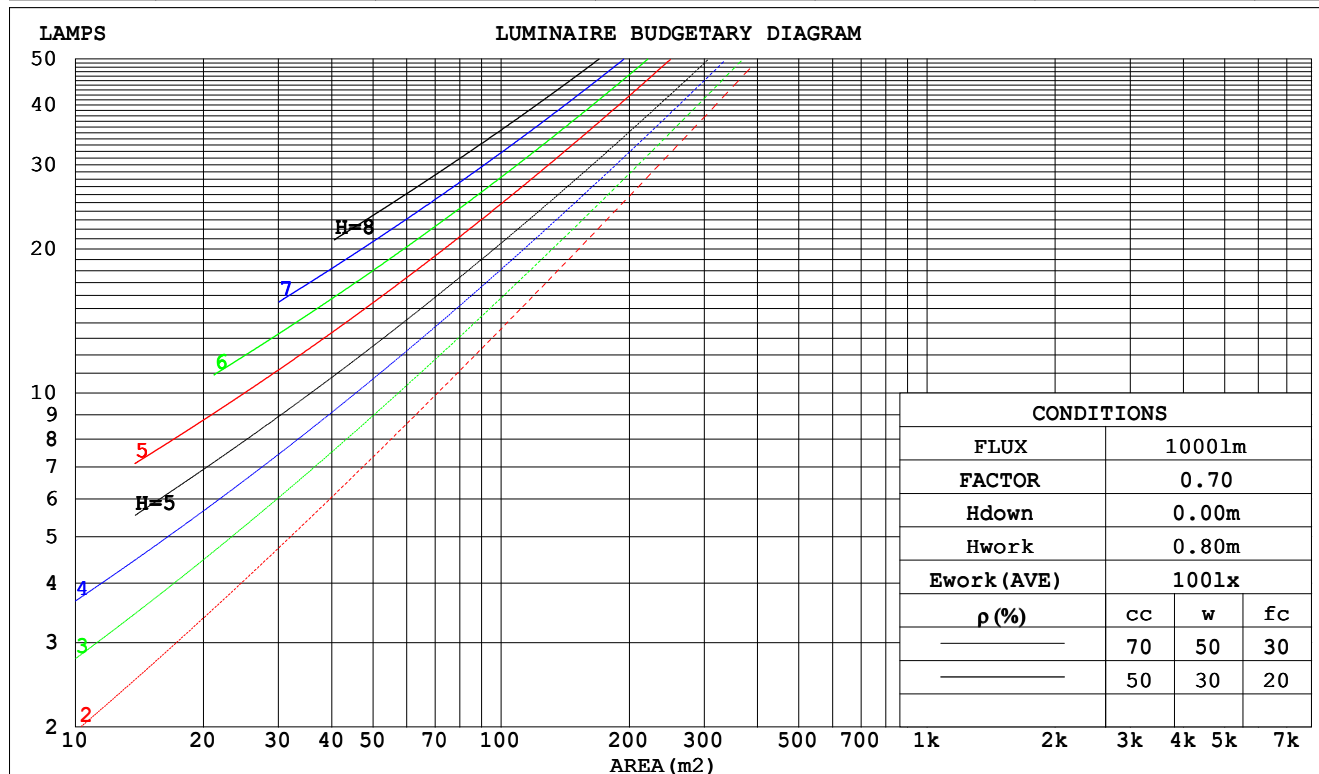
C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:WLM  
 Test Date:2021-08-11

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System:EVERFINE GO-2000H\_V1 SYSTEM V2.0.287  
 Humidity:65.0%  
 Test Distance:13.693m [K=1.0000]  
 Remarks:

## CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

NAME: REL7LED AC mode		WEIGHT:
SPEC.:	DIM.:	SERIAL No.:2021081110
	SUR.:0.0001	PROTECTION 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	1.00	.96	1.02	.98	.95	.98	.95	.92	.94	.91	.89	.90	.88	.86	.84
2.0	.91	.85	.79	.90	.83	.78	.86	.81	.76	.83	.78	.75	.80	.76	.73	.71
3.0	.81	.73	.66	.79	.72	.66	.76	.70	.65	.73	.68	.63	.71	.66	.62	.60
4.0	.72	.63	.57	.70	.62	.56	.68	.61	.55	.66	.60	.55	.63	.58	.54	.52
5.0	.64	.55	.49	.63	.55	.49	.61	.54	.48	.59	.53	.48	.57	.52	.47	.45
6.0	.58	.49	.43	.57	.49	.43	.55	.48	.42	.54	.47	.42	.52	.46	.42	.40
7.0	.53	.44	.38	.52	.44	.38	.50	.43	.38	.49	.42	.37	.48	.42	.37	.35
8.0	.48	.40	.34	.47	.39	.34	.46	.39	.34	.45	.38	.33	.44	.38	.33	.31
9.0	.44	.36	.31	.44	.36	.31	.43	.35	.30	.41	.35	.30	.40	.34	.30	.28
10.0	.41	.33	.28	.40	.33	.28	.39	.32	.28	.38	.32	.28	.38	.32	.27	.26



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:WLM  
 Test Date:2021-08-11

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000H\_V1 SYSTEM V2.0.287  
 Humidity:65.0%  
 Test Distance:13.693m [K=1.0000]  
 Remarks:

## WEC AND CCEC

NAME: REL7LED AC mode		WEIGHT:
SPEC.:	DIM.:	SERIAL No.:2021081110
	SUR.:0.0001	PROTECTION 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	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)										
0.0																	
1.0	.303	.172	.055	.296	.169	.054	.283	.162	.052	.270	.156	.050	.259	.150	.048		
2.0	.283	.155	.048	.277	.152	.047	.265	.147	.046	.254	.143	.045	.244	.138	.044		
3.0	.262	.139	.042	.256	.137	.041	.246	.133	.041	.237	.130	.040	.228	.126	.039		
4.0	.242	.126	.037	.237	.124	.037	.228	.121	.036	.220	.118	.036	.212	.115	.035		
5.0	.224	.114	.033	.220	.113	.033	.212	.110	.033	.205	.108	.032	.198	.106	.032		
6.0	.209	.105	.030	.205	.104	.030	.198	.101	.029	.191	.099	.029	.185	.097	.029		
7.0	.195	.096	.027	.191	.095	.027	.185	.093	.027	.179	.092	.027	.173	.090	.026		
8.0	.182	.089	.025	.179	.088	.025	.173	.087	.025	.168	.085	.025	.163	.084	.024		
9.0	.171	.083	.023	.168	.082	.023	.163	.081	.023	.158	.079	.023	.154	.078	.023		
10.0	.161	.077	.021	.159	.077	.021	.154	.075	.021	.150	.074	.021	.145	.073	.021		

$\rho_{cc}$	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	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	.146	.114	.086	.100	.079	.060	.058	.046	.035	.019	.015	.011	
3.0	.163	.114	.075	.140	.099	.065	.096	.068	.046	.055	.040	.027	.018	.013	.009	
4.0	.155	.101	.059	.133	.087	.052	.092	.061	.036	.053	.036	.021	.017	.012	.007	
5.0	.148	.090	.048	.127	.078	.042	.087	.055	.030	.051	.032	.018	.016	.010	.006	
6.0	.141	.082	.040	.121	.071	.035	.083	.050	.025	.048	.029	.015	.016	.010	.005	
7.0	.134	.075	.034	.115	.065	.029	.080	.046	.021	.046	.027	.012	.015	.009	.004	
8.0	.127	.069	.029	.110	.060	.025	.076	.042	.018	.044	.025	.011	.014	.008	.004	
9.0	.122	.064	.026	.105	.056	.022	.073	.039	.016	.042	.023	.009	.014	.008	.003	
10.0	.116	.060	.023	.100	.052	.020	.069	.037	.014	.040	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:WLM  
 Test Date:2021-08-11

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System:EVERFINE GO-2000H\_V1 SYSTEM V2.0.287  
 Humidity:65.0%  
 Test Distance:13.693m [K=1.0000]  
 Remarks:

UGR(Unified Glare Rating) Table

NAME: REL7LED AC mode									WEIGHT:		
SPEC.:						DIM.:			SERIAL No.:2021081110		
						SUR.:0.0001			PROTECTION 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	44.5	46.0	44.8	46.2	46.4	45.7	47.2	46.0	47.4	47.6	
	3H	45.7	47.0	46.0	47.3	47.5	47.0	48.4	47.3	48.6	48.9
	4H	46.1	47.4	46.4	47.6	47.9	47.7	49.0	48.0	49.3	49.5
	6H	46.4	47.6	46.7	47.9	48.1	48.4	49.6	48.7	49.9	50.2
	8H	46.5	47.7	46.8	48.0	48.2	48.7	49.9	49.1	50.2	50.5
	12H	46.6	47.7	47.0	48.0	48.3	49.0	50.2	49.4	50.5	50.8
4H	2H	45.2	46.5	45.5	46.7	47.0	46.1	47.4	46.4	47.6	47.9
	3H	46.4	47.6	46.8	47.9	48.2	47.5	48.7	47.9	49.0	49.3
	4H	46.9	48.0	47.3	48.3	48.6	48.3	49.4	48.7	49.7	50.0
	6H	47.4	48.3	47.8	48.6	49.0	49.2	50.1	49.6	50.5	50.9
	8H	47.6	48.4	48.0	48.8	49.2	49.7	50.6	50.1	50.9	51.3
	12H	47.8	48.5	48.2	48.9	49.3	50.2	51.0	50.6	51.4	51.8
8H	4H	47.1	48.0	47.5	48.3	48.7	48.4	49.3	48.8	49.6	50.0
	6H	47.7	48.4	48.1	48.8	49.2	49.5	50.2	49.9	50.6	51.0
	8H	48.0	48.6	48.4	49.0	49.5	50.1	50.7	50.6	51.2	51.6
	12H	48.3	48.9	48.8	49.3	49.8	50.8	51.3	51.3	51.8	52.3
12H	4H	47.2	47.9	47.6	48.3	48.7	48.4	49.2	48.8	49.6	50.0
	6H	47.8	48.4	48.2	48.8	49.3	49.5	50.1	50.0	50.6	51.0
	8H	48.1	48.7	48.6	49.1	49.6	50.2	50.7	50.6	51.2	51.6
Variations with the observer position at spacings:											
S = 1.0H	+ 0.3 / - 0.4					+ 0.2 / - 0.3					
1.5H	+ 0.5 / - 0.8					+ 0.2 / - 0.5					
2.0H	+ 0.4 / - 1.0					+ 0.2 / - 0.4					

CIE Pub.117 Corrected 1227 lm Total Lamp Luminous Flux.(8log(F/F0) = 0.7)

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:WLM  
 Test Date:2021-08-11

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000H\_V1 SYSTEM V2.0.287  
 Humidity:65.0%  
 Test Distance:13.693m [K=1.0000]  
 Remarks:

## UTILIZATION FACTORS TABLE

NAME: REL7LED AC mode		WEIGHT:
SPEC.:	DIM.:	SERIAL No.:2021081110
	SUR.:0.0001	PROTECTION 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	48	41	58	47	41	57	47	40	34
0.80	69	58	51	68	57	50	66	57	50	43
1.00	78	67	60	76	66	59	74	68	59	52
1.25	85	74	68	83	74	67	80	72	66	59
1.50	89	80	73	88	79	73	85	77	72	64
2.00	96	88	82	94	87	81	91	84	79	72
2.50	100	92	86	98	91	85	94	88	84	75
3.00	103	96	91	101	95	90	97	92	88	79
4.00	107	101	97	104	99	95	100	96	92	84
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				SHR <sub>NOM</sub> = 1.25			

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:WLM  
 Test Date:2021-08-11

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000H\_V1 SYSTEM V2.0.287  
 Humidity:65.0%  
 Test Distance:13.693m [K=1.0000]  
 Remarks:

## ISOCANDELA DIAGRAM

NAME: REL7LED AC mode		WEIGHT:
SPEC.:	DIM.:	SERIAL No.:2021081110
	SUR.:0.0001	PROTECTION ANGLE:

Conical surface Flux(90deg):

695.59 lm

%lum = 56.7%

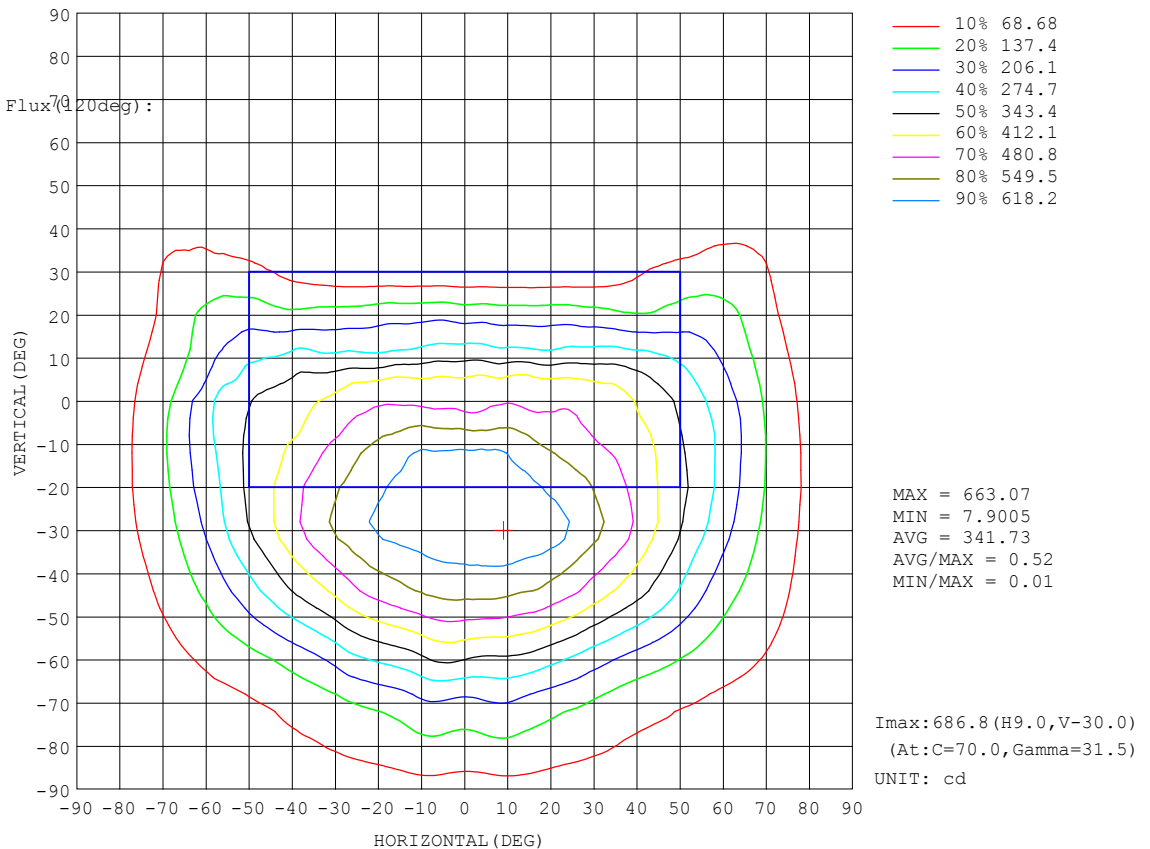
%lamp = 56.7%

Conical surface Flux(120deg):

1000.5 lm

%lum = 81.5%

%lamp = 81.5%

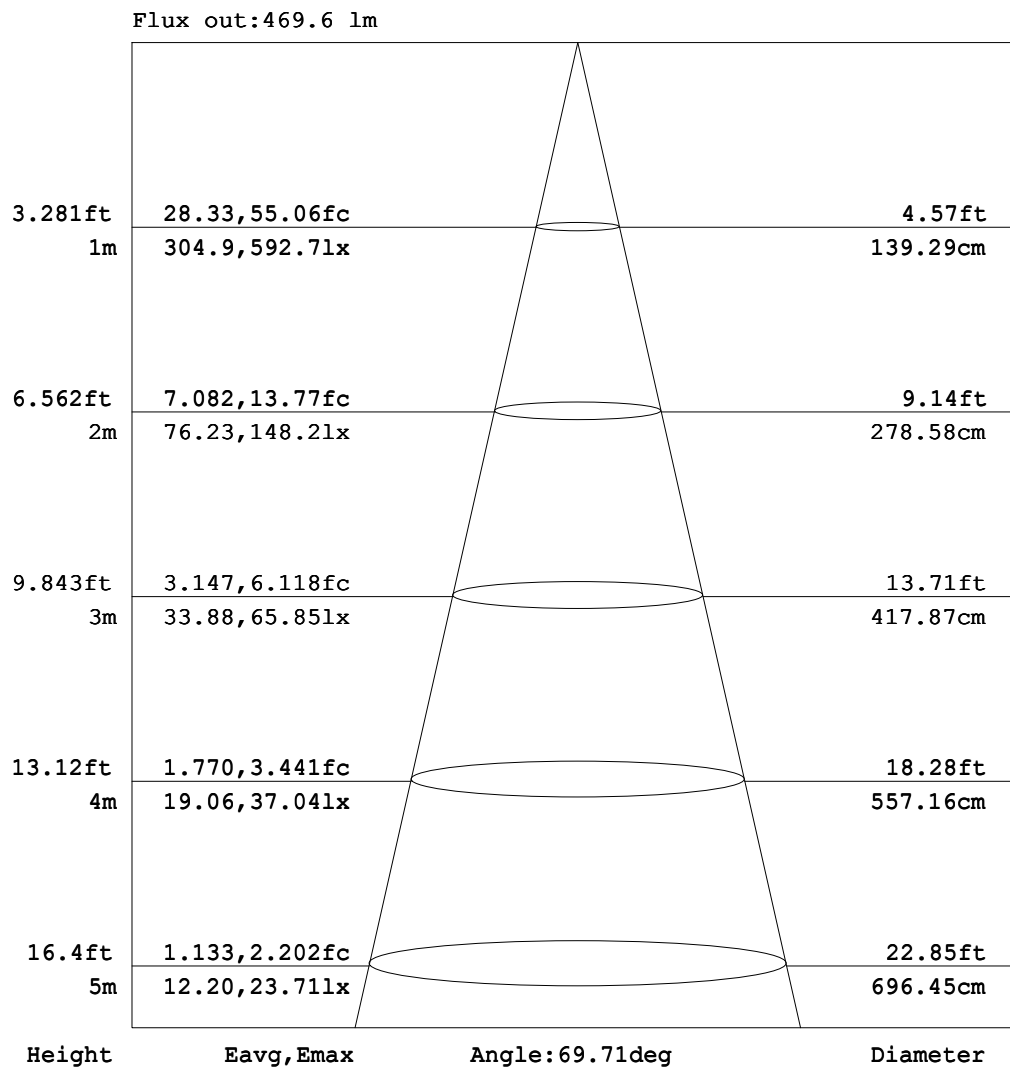


C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: WLM  
Test Date: 2021-08-11

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System: EVERFINE GO-2000H\_V1 SYSTEM V2.0.287  
Humidity: 65.0%  
Test Distance: 13.693m [K=1.0000]  
Remarks:

## AAI Figure

NAME: REL7LED AC mode		WEIGHT:
SPEC.:	DIM.:	SERIAL No.:2021081110
	SUR.:0.0001	PROTECTION ANGLE:



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

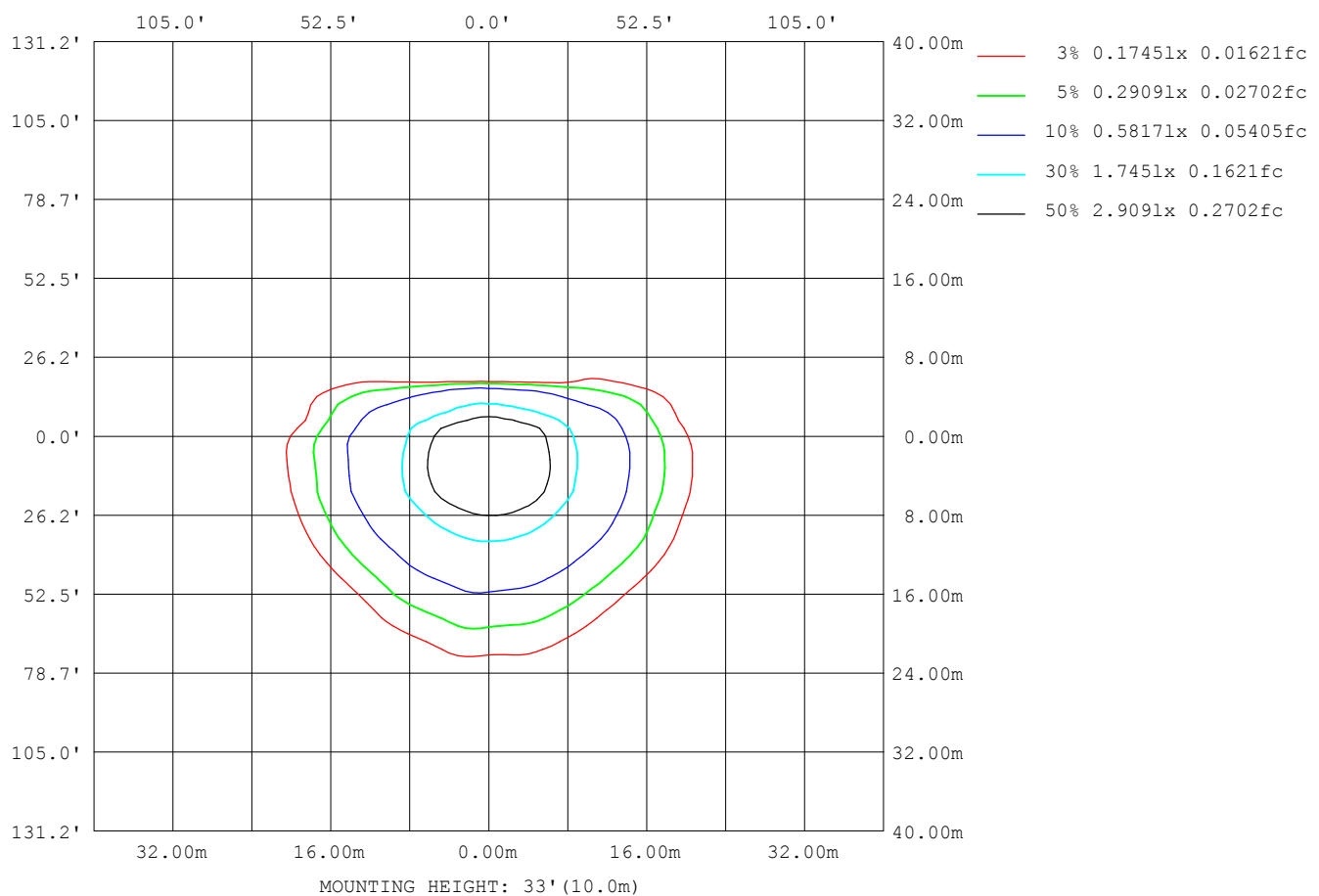
C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: WLM  
Test Date: 2021-08-11

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System: EVERFINE GO-2000H\_V1 SYSTEM V2.0.287  
Humidity: 65.0%  
Test Distance: 13.693m [K=1.0000]  
Remarks:



## ISOLUX DIAGRAM

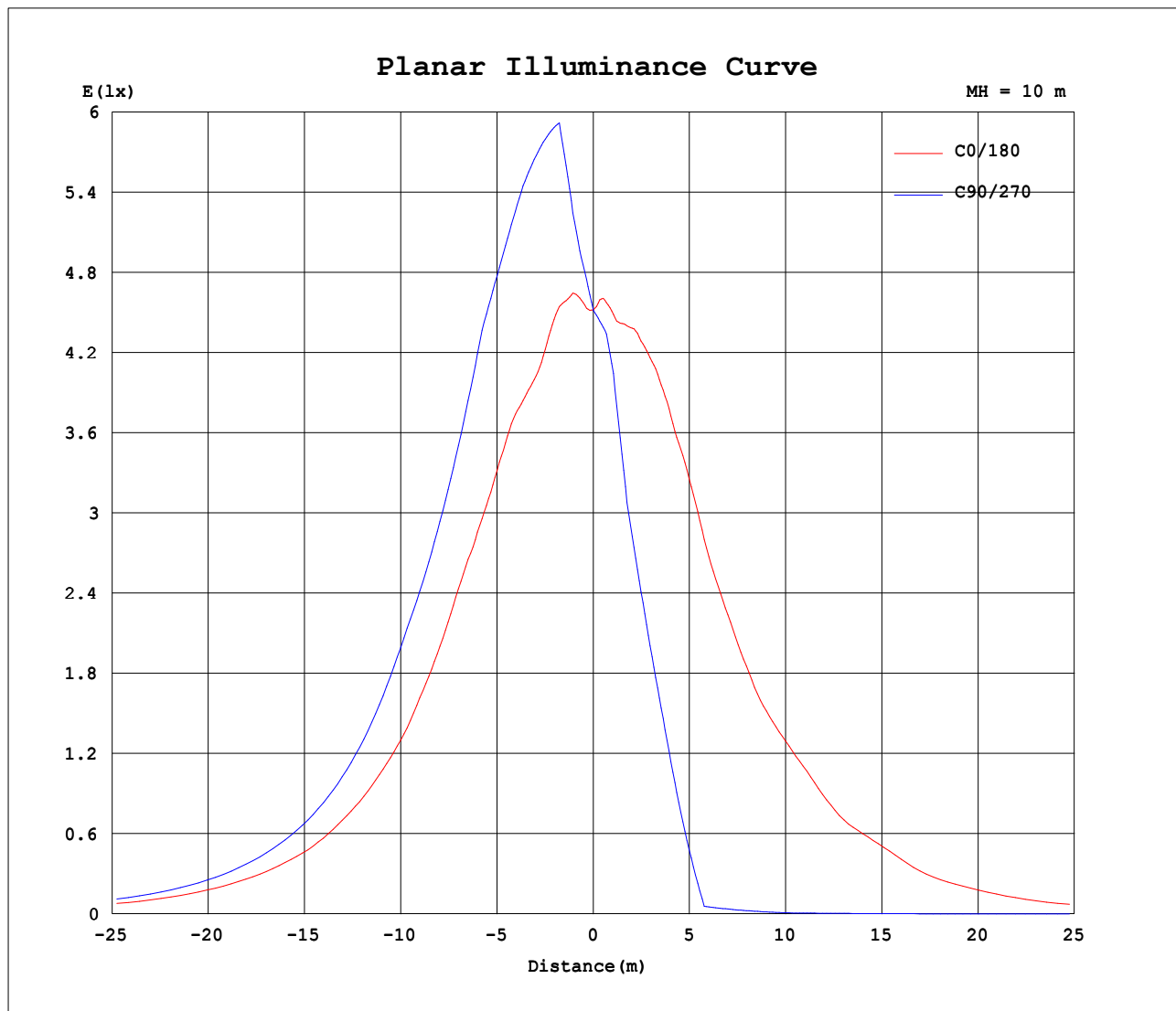
NAME: REL7LED AC mode		WEIGHT:
SPEC.:	DIM.:	SERIAL No.:2021081110
	SUR.:0.0001	PROTECTION ANGLE:



C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:WLM  
Test Date:2021-08-11

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000H\_V1 SYSTEM V2.0.287  
Humidity:65.0%  
Test Distance:13.693m [K=1.0000]  
Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: WLM  
Test Date: 2021-08-11

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-2000H\_V1 SYSTEM V2.0.287  
Humidity: 65.0%  
Test Distance: 13.693m [K=1.0000]  
Remarks:

NAME: REL7LED AC mode		WEIGHT:
SPEC. :	DIM. :	SERIAL No.:2021081110
	SUR.:0.0001	PROTECTION ANGLE:

UNIT: cd

C Range: 0 - 360DEG	γ Range: 0 - 90DEG
C Interval: 5.0DEG	γ Interval: 0.5DEG
Test Speed: HIGH	Test System: EVERFINE GO-2000H_V1 SYSTEM V2.0.287
Temperature: 25.3DEG	Humidity: 65.0%
Operators: WLM	Test Distance: 13.693m [K=1.0000]
Test Date: 2021-08-11	Remarks:

UNIT: cd

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.287
Humidity:65.0%
Test Distance:13.693m [K=1.0000]
Remarks:

```

UNIT: cd

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.287
Humidity:65.0%
Test Distance:13.693m [K=1.0000]
Remarks:

```

UNIT: cd

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.287
Humidity:65.0%
Test Distance:13.693m [K=1.0000]
Remarks:

```