



ATC MIDDLE EAST FZCO



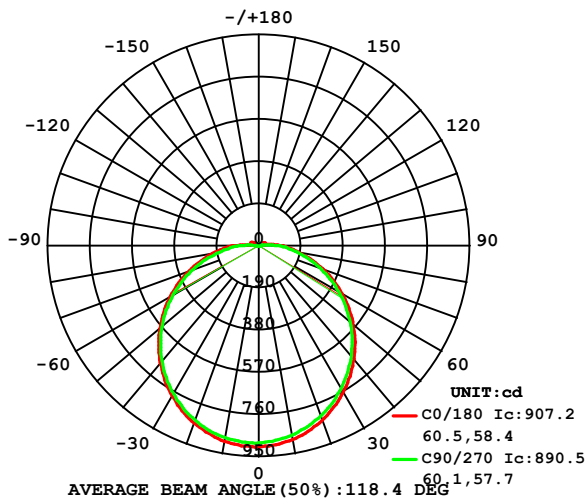
 rafeed[®]
LED
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2022
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LUMINAIRE PHOTOMETRIC TEST REPORT

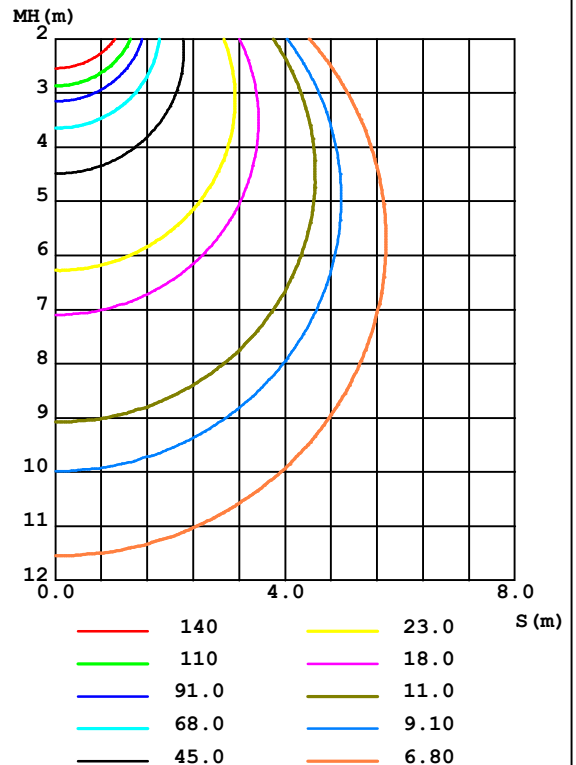
Test:U:230.28V I:0.1353A P:29.983W PF:0.9622 Freq:49.99Hz Lamp Flux:2982.28x1 lm		
NAME: Round Bulkhead 30W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ATC	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	Round Bulkhead 30W	Imax (cd)	907.2	S/MH (C0/180)	1.25
NOMINAL POWER (W)	30	LOR (%)	100.0	S/MH (C90/270)	1.24
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	2982.3	η UP, DN (C0-180)	1.9, 49.1
NOMINAL FLUX (lm)	2982.28	CIE CLASS	DIRECT	η UP, DN (C180-360)	2.1, 46.9
LAMPS INSIDE	1	η up (%)	4.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	230	η down (%)	96.0	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: ATC
Test Date: 2020-04-13

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity: 60%
Test Distance: 7.630m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

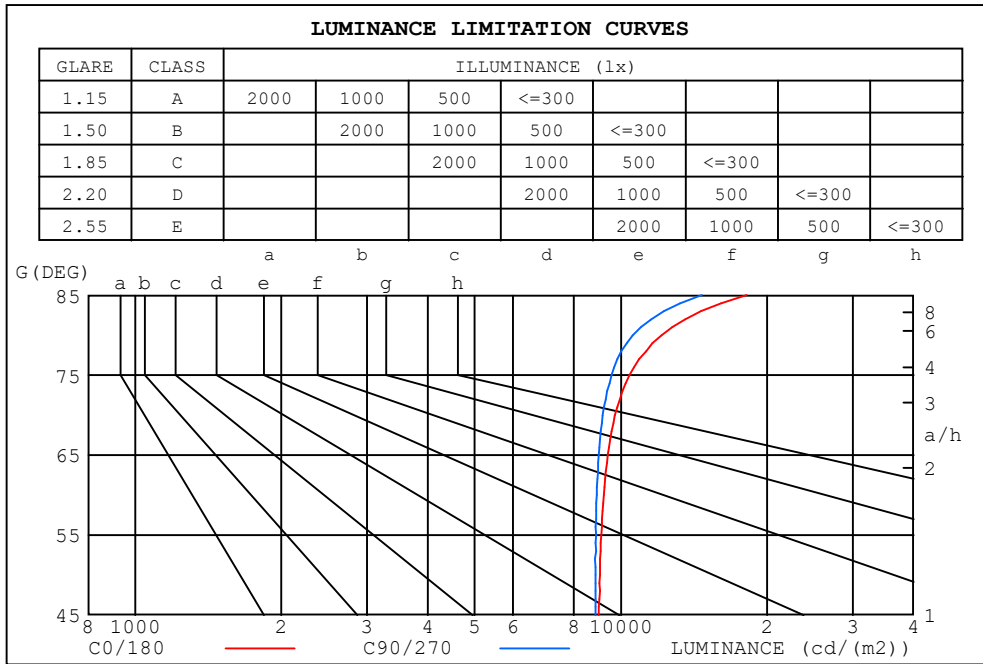
ZONAL FLUX DIAGRAM:

θ	C0	C90	C180	C270				γ	Φ zone	Φ total	lum, lamp
10	894.8	878.0	886.0	866.9				0- 10	84.86	84.86	2.85,2.85
20	850.6	836.7	837.5	817.3				10- 20	243.4	328.2	11,11
30	781.2	769.8	762.4	743.6				20- 30	370.2	698.5	23.4,23.4
40	690.7	679.7	667.7	650.1				30- 40	450.8	1149	38.5,38.5
50	581.7	569.0	556.1	539.4				40- 50	477.2	1626	54.5,54.5
60	460.4	446.5	434.6	417.0				50- 60	448.6	2075	69.6,69.6
70	332.5	313.9	306.9	292.1				60- 70	371.9	2447	82,82
80	210.5	183.7	186.7	176.9				70- 80	262.9	2710	90.9,90.9
90	107.9	82.23	103.4	89.28				80- 90	152.9	2863	96,96
100	11.95	5.637	37.02	10.83				90-100	56.36	2919	97.9,97.9
110	36.89	4.451	25.08	4.782				100-110	17.06	2936	98.5,98.5
120	27.99	5.307	23.96	5.922				110-120	18.33	2954	99.1,99.1
130	13.07	6.162	10.60	7.111				120-130	11.08	2965	99.4,99.4
140	7.199	6.916	6.612	5.979				130-140	5.849	2971	99.6,99.6
150	7.850	7.277	7.371	7.365				140-150	4.412	2976	99.8,99.8
160	8.158	7.647	7.846	7.305				150-160	3.500	2979	99.9,99.9
170	8.101	8.009	8.262	7.932				160-170	2.257	2982	100,100
180	8.424	8.355	8.559	8.255				170-180	0.7785	2982	100,100
DEG	LUMINOUS INTENSITY:cd Less than 35% Percent = 17.4 %								UNIT:lm		

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Test Date:2020-04-13

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:60%
Test Distance:7.630m [K=1.0000]
Remarks:

LUMINANCE LIMITATION CURVES



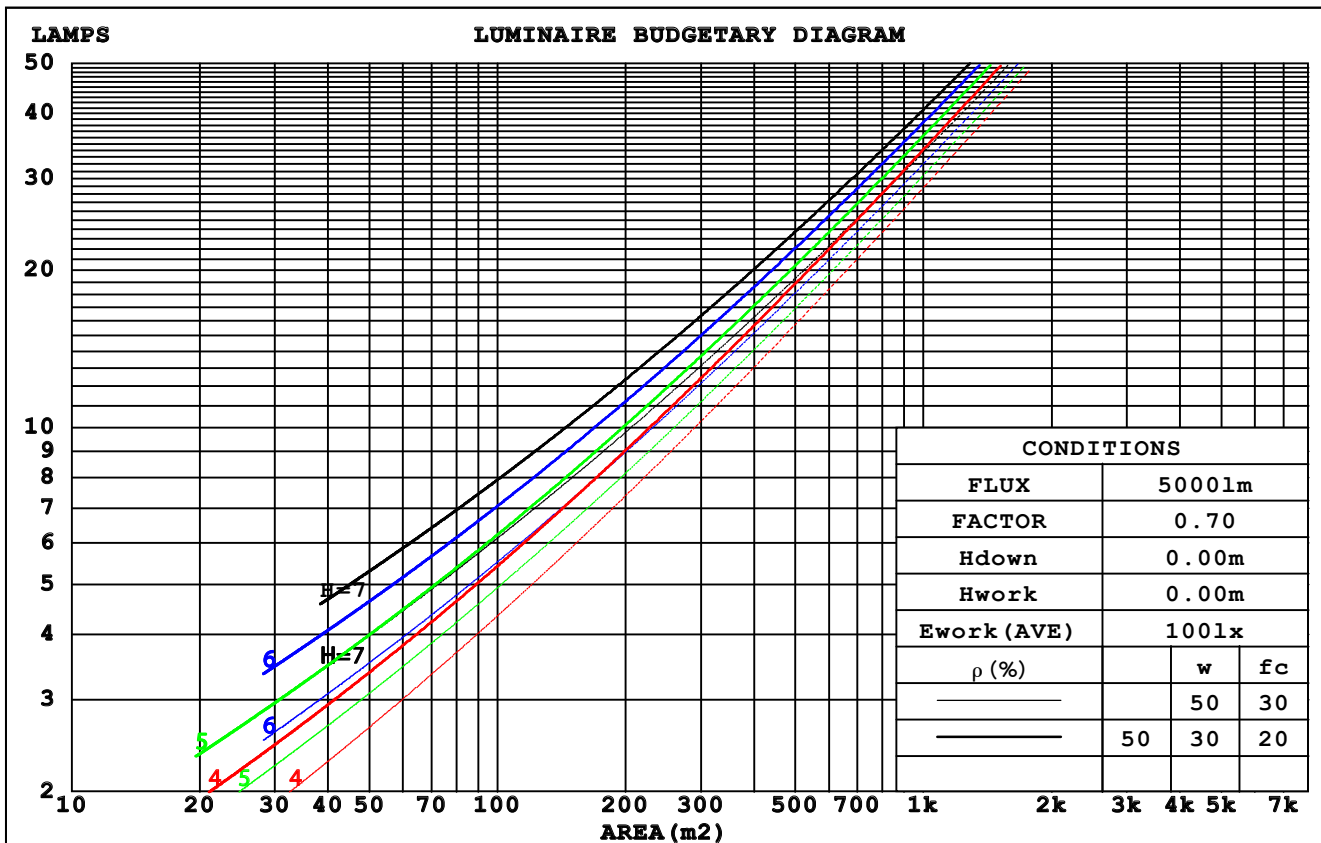
LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	18135	14651
80	12124	10576
75	10424	9566
70	9721	9179
65	9395	9013
60	9207	8930
55	9102	8891
50	9050	8853
45	8998	8852

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Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

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	RCR:Room Cavity Ratio						Coefficients of Utilization(CU)									
0.0	1.18	1.18	1.18	1.15	1.15	1.15	1.09	1.09	1.09	1.03	1.03	1.03	.98	.98	.98	.96
1.0	1.01	.96	.91	.98	.93	.89	.93	.89	.86	.88	.85	.82	.84	.81	.79	.77
2.0	.87	.79	.73	.84	.78	.72	.80	.74	.69	.76	.71	.67	.73	.69	.65	.63
3.0	.76	.67	.60	.74	.66	.59	.70	.63	.58	.67	.61	.56	.64	.59	.55	.52
4.0	.67	.57	.50	.65	.56	.50	.62	.55	.49	.59	.53	.48	.57	.51	.46	.44
5.0	.59	.50	.43	.58	.49	.43	.55	.48	.42	.53	.46	.41	.51	.45	.40	.38
6.0	.53	.44	.37	.52	.43	.37	.50	.42	.36	.48	.41	.36	.46	.40	.35	.33
7.0	.48	.39	.33	.47	.39	.33	.45	.38	.32	.44	.37	.32	.42	.36	.31	.29
8.0	.44	.35	.29	.43	.35	.29	.41	.34	.29	.40	.33	.28	.38	.32	.28	.26
9.0	.40	.32	.26	.40	.32	.26	.38	.31	.26	.37	.30	.25	.35	.29	.25	.23
10.0	.37	.29	.24	.36	.29	.24	.35	.28	.23	.34	.28	.23	.33	.27	.23	.21



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 Remarks:

WEC AND CCEC

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	RCR:Room Cavity Ratio						Wall Exitance Coefficients (WEC)									
0.0																
1.0	.355	.202	.064	.346	.198	.063	.331	.190	.061	.316	.182	.059	.303	.176	.057	
2.0	.318	.174	.053	.311	.171	.053	.297	.165	.051	.284	.159	.050	.272	.154	.048	
3.0	.287	.153	.046	.281	.150	.045	.268	.145	.044	.257	.141	.043	.246	.136	.042	
4.0	.261	.136	.040	.256	.134	.040	.244	.130	.039	.234	.126	.038	.224	.122	.037	
5.0	.239	.122	.035	.234	.120	.035	.224	.117	.034	.215	.113	.034	.206	.110	.033	
6.0	.220	.111	.032	.216	.109	.031	.207	.106	.031	.198	.103	.030	.190	.100	.030	
7.0	.204	.101	.029	.200	.100	.028	.192	.097	.028	.184	.094	.027	.177	.092	.027	
8.0	.190	.093	.026	.186	.092	.026	.179	.089	.025	.172	.087	.025	.165	.085	.025	
9.0	.177	.086	.024	.174	.085	.024	.167	.083	.023	.161	.081	.023	.155	.079	.023	
10.0	.166	.080	.022	.163	.079	.022	.157	.077	.022	.151	.075	.021	.146	.073	.021	

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	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients (CCEC)									
0.0	.221	.221	.221	.189	.189	.189	.129	.129	.129	.074	.074	.074	.024	.024	.024	
1.0	.214	.187	.162	.183	.160	.139	.125	.110	.096	.072	.064	.056	.023	.021	.018	
2.0	.207	.163	.126	.177	.140	.109	.121	.097	.076	.070	.056	.044	.022	.018	.014	
3.0	.199	.146	.103	.171	.126	.089	.117	.087	.063	.068	.051	.037	.022	.017	.012	
4.0	.191	.133	.088	.164	.115	.076	.113	.080	.054	.065	.047	.032	.021	.015	.010	
5.0	.184	.122	.077	.158	.106	.067	.109	.074	.047	.063	.043	.028	.020	.014	.009	
6.0	.176	.114	.070	.151	.099	.061	.104	.069	.043	.061	.041	.026	.020	.013	.008	
7.0	.169	.107	.064	.145	.093	.056	.100	.065	.040	.058	.038	.024	.019	.013	.008	
8.0	.162	.102	.060	.140	.088	.052	.097	.062	.037	.056	.036	.022	.018	.012	.007	
9.0	.156	.097	.057	.134	.084	.049	.093	.059	.035	.054	.035	.021	.018	.011	.007	
10.0	.150	.092	.054	.129	.080	.047	.090	.056	.033	.052	.033	.020	.017	.011	.007	

C Range: 0 - 360DEG
C Interval: 90.0DEG
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Operators: ATC
Test Date: 2020-04-13

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity: 60%
Test Distance: 7.630m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

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	20.4	21.9	20.7	22.2	22.5	20.3	21.8	20.6	22.1	22.4
3H	22.3	23.7	22.7	24.0	24.4	22.1	23.5	22.5	23.9	24.2
4H	23.3	24.6	23.6	24.9	25.3	23.0	24.4	23.4	24.7	25.0
6H	24.2	25.5	24.6	25.8	26.2	23.8	25.1	24.2	25.4	25.8
8H	24.7	25.9	25.1	26.2	26.6	24.2	25.4	24.6	25.8	26.2
12H	25.2	26.4	25.6	26.7	27.1	24.6	25.8	25.0	26.2	26.6
4H 2H	21.1	22.4	21.4	22.7	23.1	21.0	22.3	21.4	22.7	23.0
3H	23.2	24.4	23.6	24.8	25.2	23.0	24.2	23.5	24.6	25.0
4H	24.3	25.4	24.7	25.8	26.2	24.1	25.2	24.5	25.6	26.0
6H	25.4	26.4	25.9	26.8	27.3	25.1	26.0	25.5	26.5	26.9
8H	26.0	26.9	26.4	27.3	27.8	25.5	26.5	26.0	26.9	27.4
12H	26.6	27.4	27.1	27.9	28.4	26.0	26.9	26.5	27.3	27.8
8H 4H	24.7	25.6	25.2	26.1	26.5	24.5	25.4	25.0	25.9	26.3
6H	26.0	26.8	26.5	27.3	27.8	25.7	26.5	26.2	27.0	27.5
8H	26.8	27.5	27.3	28.0	28.5	26.4	27.1	26.9	27.6	28.1
12H	27.6	28.2	28.1	28.7	29.3	27.1	27.7	27.6	28.2	28.7
12H 4H	24.8	25.6	25.3	26.1	26.6	24.6	25.4	25.1	25.9	26.4
6H	26.2	26.9	26.7	27.4	27.9	25.9	26.6	26.4	27.1	27.6
8H	27.0	27.6	27.5	28.1	28.7	26.6	27.2	27.2	27.7	28.3
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				

CIE Pub.117, 2982 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = 3.8)

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 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.366
 Humidity: 60%
 Test Distance: 7.630m [K=1.0000]
 Remarks:

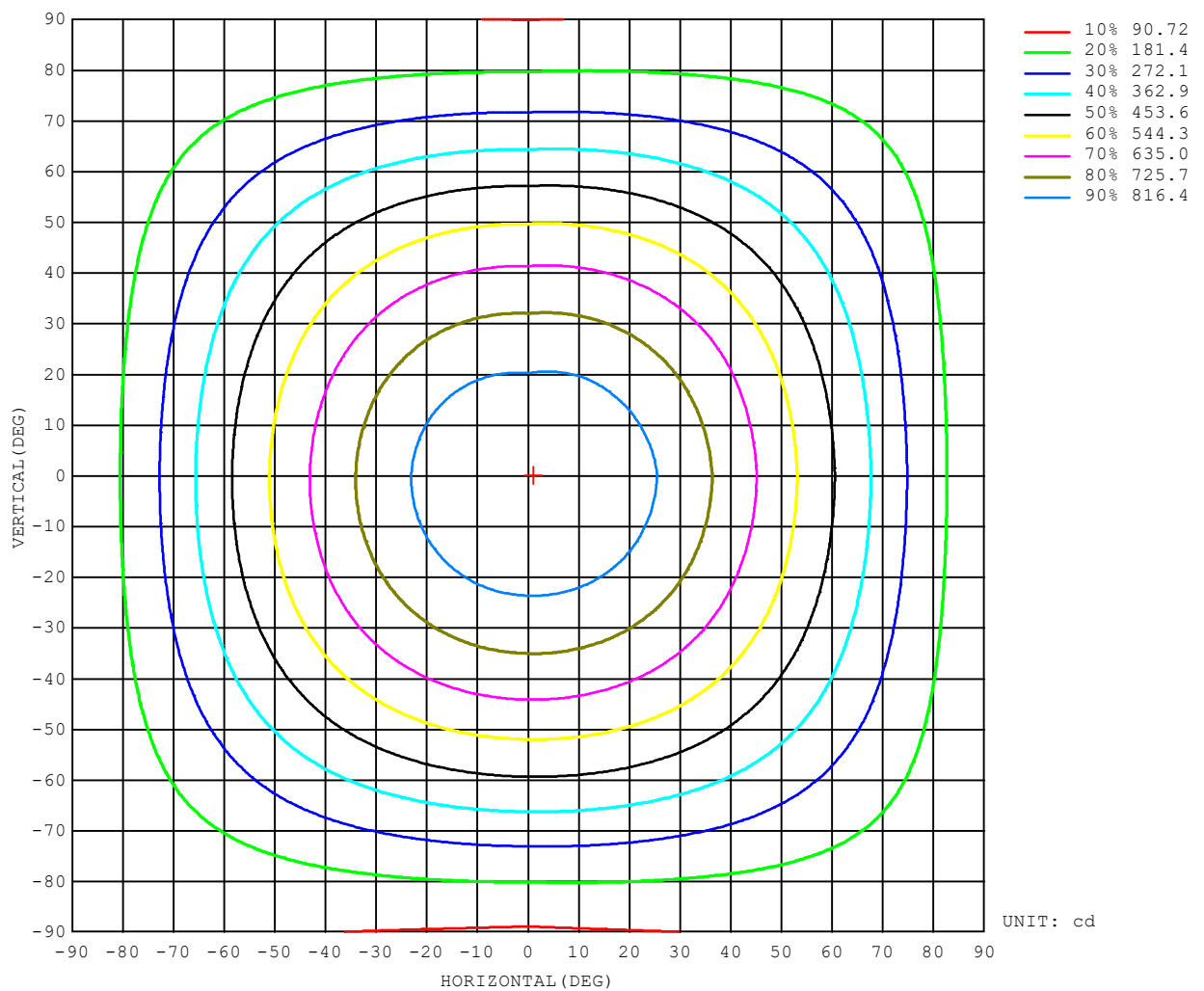
UTILIZATION FACTORS TABLE

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	54	42	35	53	42	35	52	41	34	28
0.80	64	51	44	62	51	43	60	50	43	36
1.00	72	60	52	70	59	52	68	60	51	43
1.25	79	67	60	77	66	59	74	65	58	50
1.50	84	73	65	82	72	65	78	70	63	55
2.00	91	81	74	89	80	73	85	77	71	62
2.50	95	86	79	93	85	78	88	81	76	66
3.00	99	91	84	96	89	83	91	85	80	71
4.00	103	96	91	100	94	89	95	90	86	76
5.00	106	100	95	103	97	93	97	93	90	79
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SERNOM = 1.25			

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Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity: 60%
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Remarks:

ISOCANDELA DIAGRAM

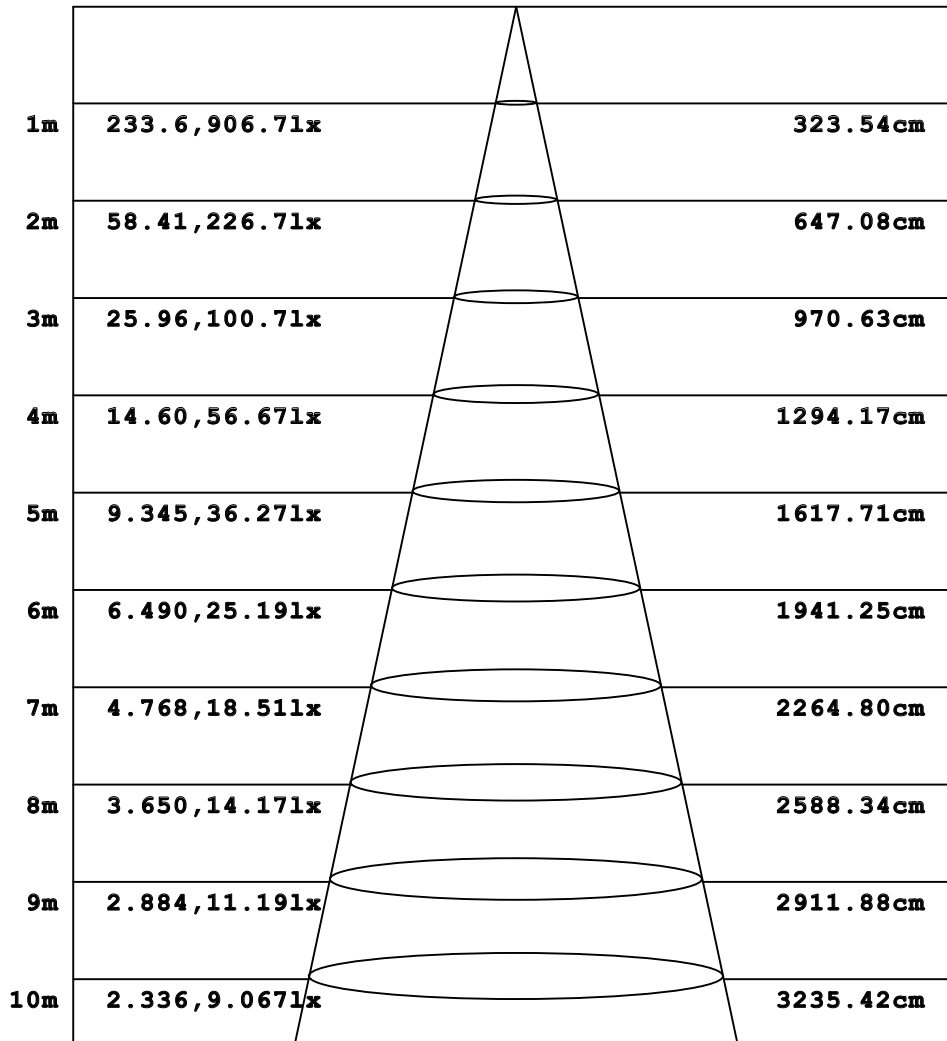


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Remarks:

AAI Figure

Flux out:2033 lm



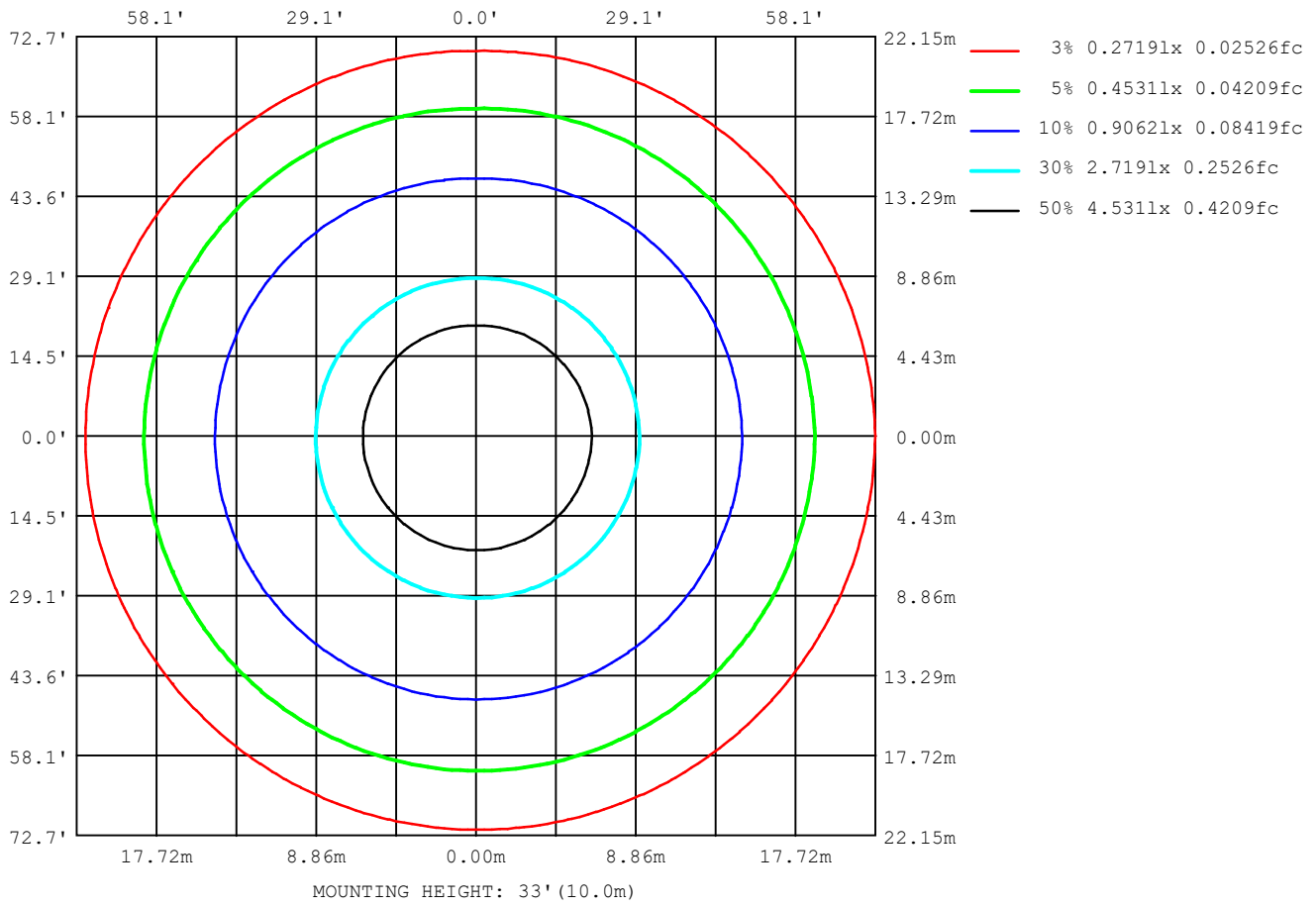
Height Eavg, Emax Angle:116.55deg Diameter

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

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ISOLUX DIAGRAM



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Remarks:

LED Avg.L Report

Test:U:230.28V I:0.1353A P:29.983W PF:0.9622 Freq:49.99Hz Lamp Flux:2982.28x1 lm		
NAME: MPL7 30W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ATC	SUR.:	Shielding Angle:

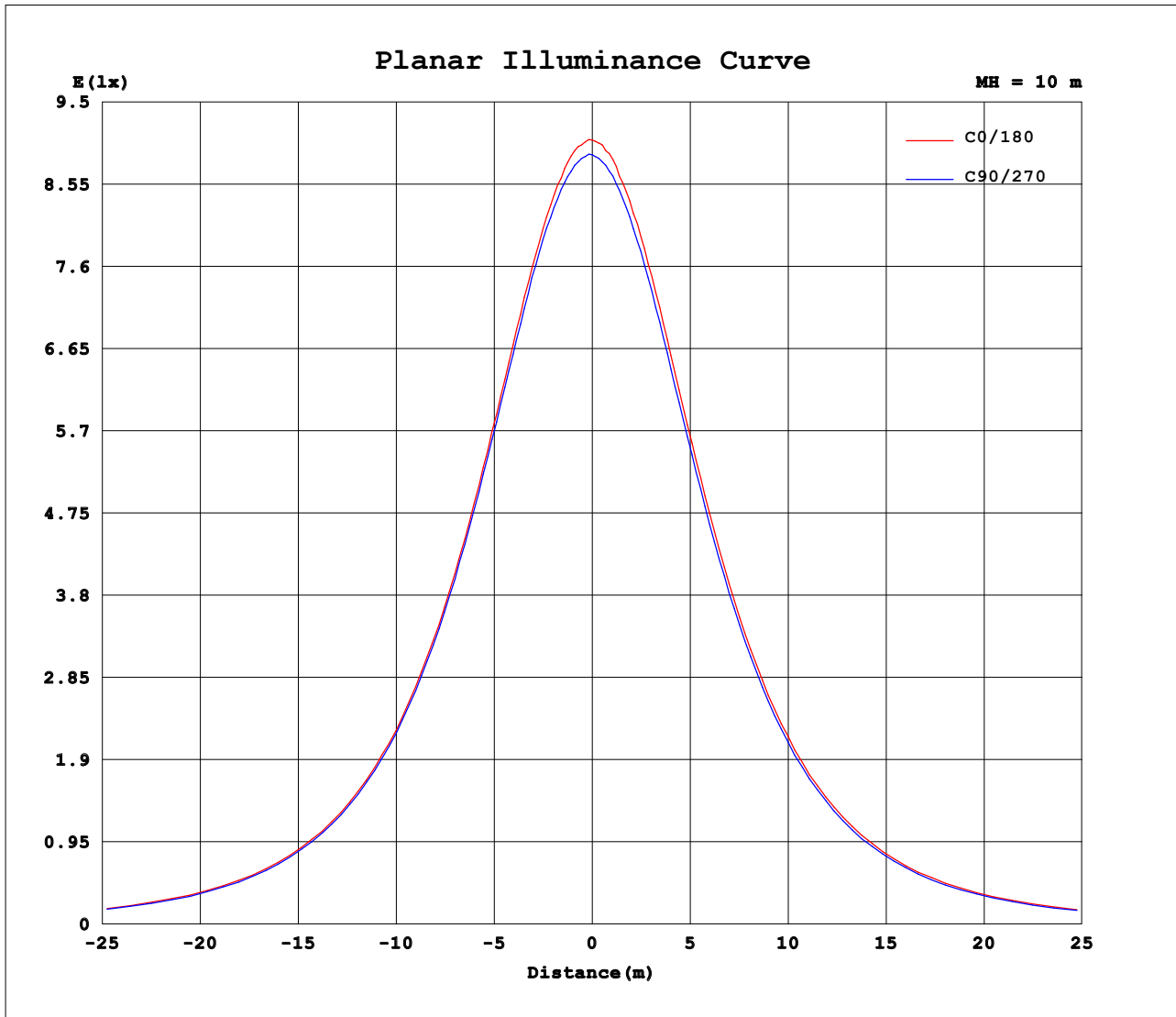
AvgL	cd/m2
L 0~180 (65) av	9082
L 0~180 (75) av	9932
L 0~180 (85) av	17123
L 90~270 (65) av	8698
L 90~270 (75) av	9259
L 90~270 (85) av	14715
L 45 (65) av	8822
L 45 (75) av	9481
L 45 (85) av	15555

Standard: GB/T 29293-2012

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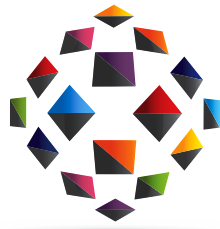
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Planar Illuminance Curve



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ATC MIDDLE EAST FZCO

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Website www.rafeed.co