

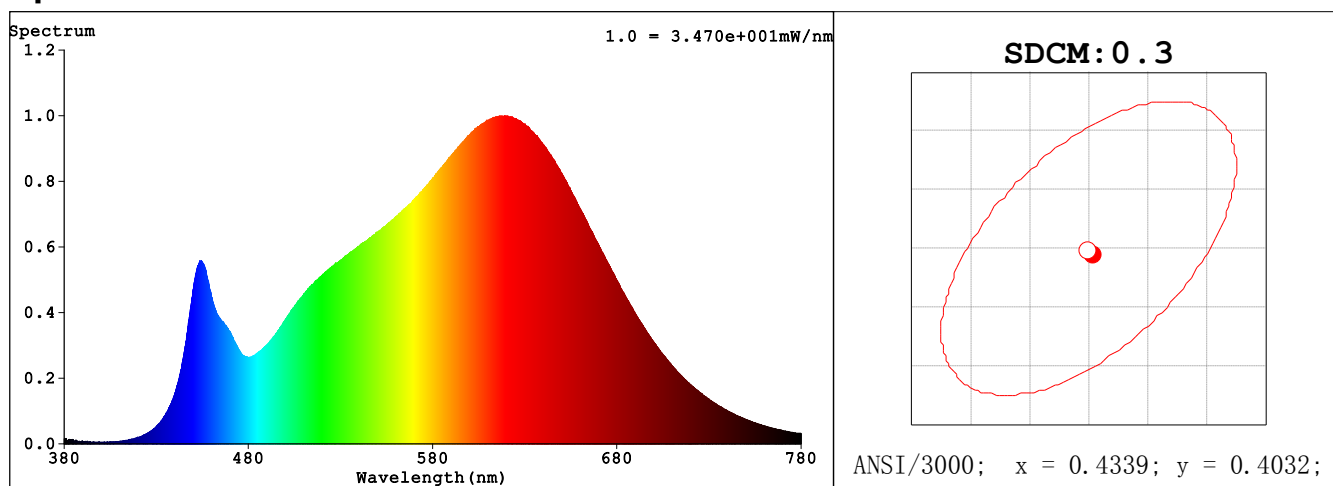
Spectrum Test Report

Sample	:		Date	:	2019-12-16
Specification	:	WFR8R24930UNVWS	Sam. Status	:	
Sample No.	:	1	Standard	:	
Manufacturer	:	RAB LIGHTING INC.	Instrument	:	HaasSuite(EVERFINE)
Assessor	:	damin			
Remark	:	---	Test by	:	DAMIN
Device SN	:	9#			

Test Condition

Temperature	:	25.9Deg	RH	:	65.0%
WL Range	:	380nm-780nm	IP	:	50554 (77%)
Test Mode	:	Fast Test	T	:	107 ms
Sensitivity	:	High			

Spectrum



Colorimetric Parameters

Chromaticity Coordinate: $x = 0.4342$ $y = 0.4030$ / $u' = 0.2493$ $v' = 0.5205$ ($duv = -6.74e-05$)

CCT= 3037K Prcp WL: $L_d = 582.7nm$ Purity=51.3%

Peak WL: $L_p = 619nm$ FWHM: $= 162.5nm$ Ratio: R=24.0% G=72.9% B=3.1%

Render Index: $R_a = 92.6$

EEL: 0.17808 A

R1 =93 R2 =97 R3 =99 R4 =92 R5 =92 R6 =96 R7 =91
R8 =81 R9 =58 R10=92 R11=93 R12=80 R13=94 R14=99 R15=89
LEVEL:OUT WHITE:ANSI_3000K

Photometric & Radiometric Parameters

Flux = 1788.7 lm Eff. : 76.50 lm/W $F_e = 6.1344 W$ Scotopic:2583.5 S/P:1.4443

Flux of emitted photons($\mu mol/s$):30.276 Fluo. and blue light ratio:9.570 Fluorescent eff.:234.9

Electrical parameters

V = 119.92 V I = 0.1972 A P = 23.38 W PF = 0.9887 F=59.98 Hz

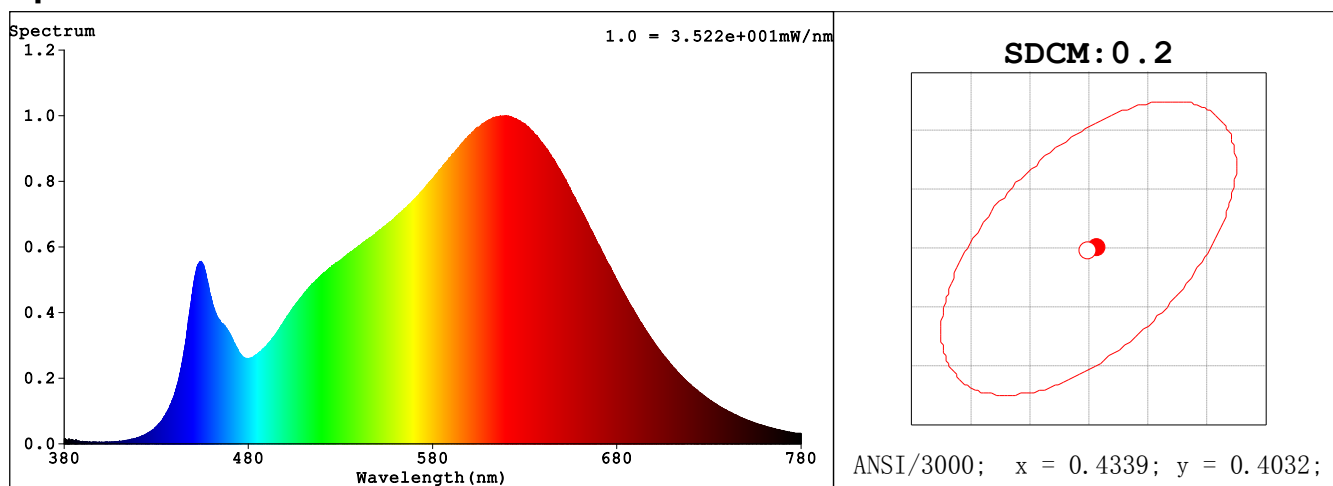
Spectrum Test Report

Sample	:		Date	:	2019-12-16
Specification	:	WFR8R24930UNVWS	Sam. Status	:	
Sample No.	:	277 1	Standard	:	
Manufacturer	:	RAB LIGHTING INC.	Instrument	:	HaasSuite(EVERFINE)
Assessor	:	damin			
Remark	:	---	Test by	:	DAMIN
Device SN	:	9#			

Test Condition

Temperature	:	25.9Deg	RH	:	65.0%
WL Range	:	380nm-780nm	IP	:	51346 (78%)
Test Mode	:	Fast Test	T	:	107 ms
Sensitivity	:	High			

Spectrum



Colorimetric Parameters

Chromaticity Coordinate: $x = 0.4344$ $y = 0.4034$ / $u' = 0.2492$ $v' = 0.5207$ ($duv=8.65e-05$)

CCT= 3038K Prcp WL: Ld=582.6nm Purity=51.5%

Peak WL: Lp=620nm FWHM: =162.8nm Ratio:R=24.0% G=73.0% B=3.0%

Render Index: Ra = 92.6

EEL: 0.17696 A

R1 =93 R2 =97 R3 =99 R4 =92 R5 =92 R6 =96 R7 =91
R8 =81 R9 =58 R10=92 R11=93 R12=80 R13=94 R14=99 R15=89
LEVEL:OUT WHITE:ANSI_3000K

Photometric & Radiometric Parameters

Flux = 1816.6 lm Eff. : 76.98 lm/W Fe = 6.2247 W Scotopic:2620.3 S/P:1.4424

Flux of emitted photons($\mu\text{mol/s}$):30.725 Fluo. and blue light ratio:9.901 Fluorescent eff.:217.4

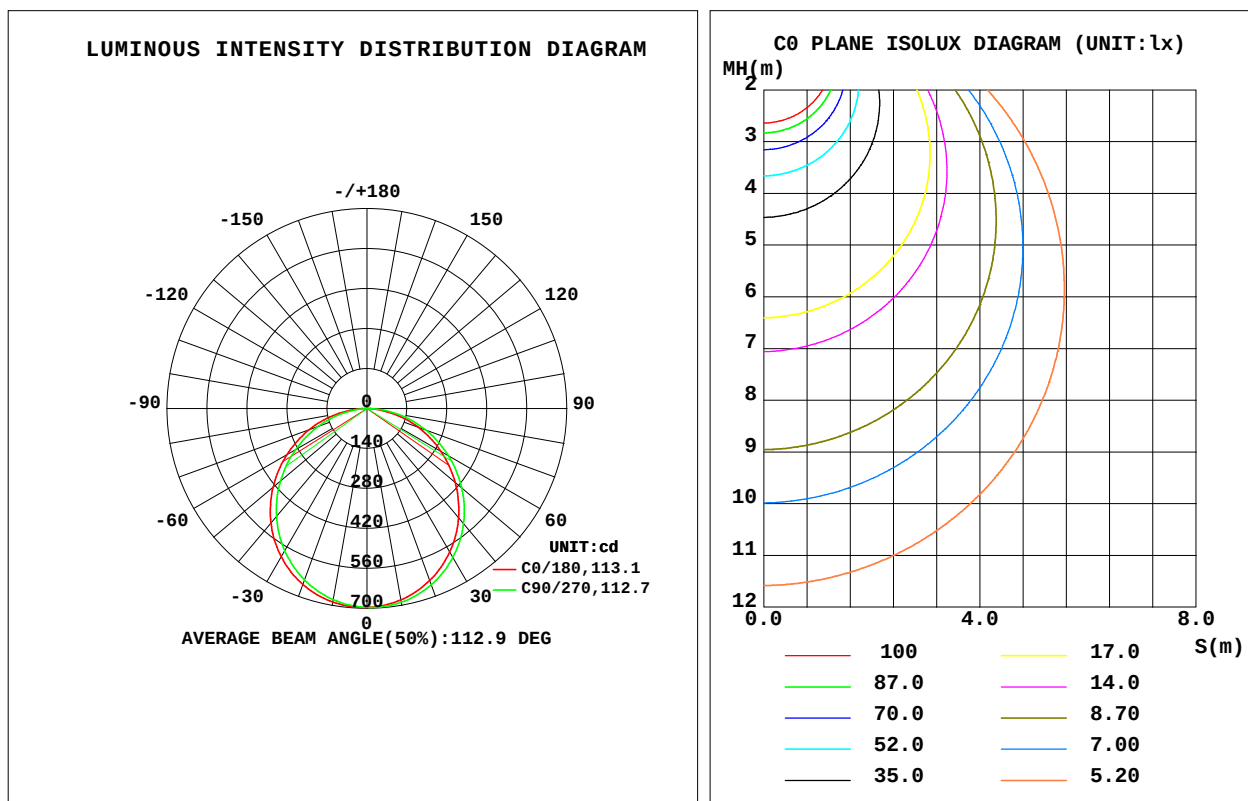
Electrical parameters

V = 277.08 V I = 0.09386 A P = 23.60 W PF = 0.9073 F=59.98 Hz

LUMINAIRE PHOTOMETRIC TEST REPORT

NAME:	TYPE:WFR8R24930UNVWS	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: RAB LIGHTING INC.	SUR.:21cm*16cm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 86.23 lm/W
MODEL		I _{max} (cd)	697.1	S/MH(C0/180)	1.28	
NOMINAL POWER(W)		LOR(%)	100.0	S/MH(C90/270)	1.24	
RATED VOLTAGE(V)	120	TOTAL FLUX(lm)	2015.0	h UP, DN(C0-180)	0.0,50.4	
NOMINAL FLUX(lm)	2014.96	CIE CLASS	DIRECT	h UP, DN(C180-360)	0.0,49.6	
LAMPS INSIDE	1	h up(%)	0.0	CIBSE SHR NOM	1.25	
TEST VOLTAGE(V)	120	h down(%)	100.0	CIBSE SHR MAX	1.35	



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2019-12-16

Range: 0 - 90DEG
Interval: 1.0DEG
Test System:EVERFINE G0-SPEX500_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:3.200m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

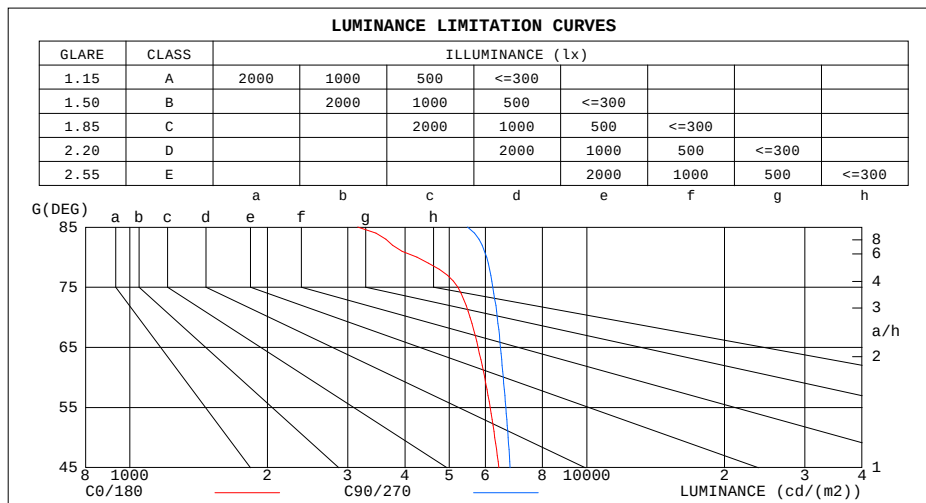
g	C0	C90	C180	C270					g	F zone	F total	%lum, lamp
10	680.8	689.1	688.4	679.6					0- 10	65.92	65.92	3.27, 3.27
20	641.5	657.3	656.1	638.9					10- 20	188.9	254.8	12.6, 12.6
30	580.1	602.1	600.2	575.8					20- 30	286.5	541.4	26.9, 26.9
40	499.4	526.2	523.5	493.1					30- 40	345.5	886.9	44, 44
50	403.6	433.3	429.5	395.8					40- 50	358.4	1245	61.8, 61.8
60	298.3	328.8	324.1	289.4					50- 60	325.1	1570	77.9, 77.9
70	189.7	218.4	213.4	179.9					60- 70	252.8	1823	90.5, 90.5
80	73.64	105.0	100.2	69.35					70- 80	152.2	1975	98, 98
90	0.8528	0.8856	2.473	0.2881					80- 90	39.59	2015	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: 90.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2019-12-16

Range: 0 - 90DEG
Interval: 1.0DEG
Test System: EVERFINE G0-SPEX500_V1 SYSTEM V2.0.366
Humidity: 65.0%
Test Distance: 3.200m [K=1.0000]
Remarks:

LUMINANCE LIMITATION CURVES

NAME:	TYPE:WFR8R24930UNVWS	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: RAB LIGHTING INC.	SUR.:21cm*16cm	Shielding Angle:



LUMINANCE cd/(m2)		
G(180)	C0/180	C90/270
85	3153	5486
80	4249	6036
75	5224	6227
70	5555	6373
65	5785	6475
60	5976	6564
55	6144	6651
50	6291	6729
45	6417	6798

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
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Operators:DAMIN
Test Date:2019-12-16

Range: 0 - 90DEG
Interval: 1.0DEG
Test System:EVERFINE G0-SPEX500_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:3.200m [K=1.0000]
Remarks:

WEC AND CCEC

NAME:	TYPE:WFR8R24930UNVWS	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: RAB LIGHTING INC.	SUR.:21cm*16cm	Shielding Angle:

r CC	80%			70%			50%			30%			10%			0
r W	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
r fc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio Wall Exitance Coefficients(WEC)															
0.0																
1.0	.314	.179	.057	.307	.175	.056	.294	.168	.054	.281	.162	.052	.270	.157	.050	
2.0	.295	.162	.050	.289	.159	.049	.277	.154	.048	.266	.149	.047	.256	.145	.046	
3.0	.273	.145	.043	.267	.143	.043	.257	.139	.042	.247	.135	.042	.238	.132	.041	
4.0	.251	.130	.038	.246	.129	.038	.237	.126	.038	.228	.123	.037	.221	.120	.036	
5.0	.232	.118	.034	.228	.117	.034	.219	.114	.034	.212	.112	.033	.205	.109	.033	
6.0	.215	.108	.031	.211	.107	.031	.204	.104	.030	.197	.102	.030	.191	.100	.030	
7.0	.200	.099	.028	.196	.098	.028	.190	.096	.028	.184	.094	.027	.178	.093	.027	
8.0	.186	.091	.026	.183	.090	.026	.178	.089	.025	.172	.087	.025	.167	.086	.025	
9.0	.175	.085	.024	.172	.084	.024	.167	.082	.023	.162	.081	.023	.157	.080	.023	
10.0	.164	.079	.022	.162	.078	.022	.157	.077	.022	.153	.076	.022	.148	.075	.021	

r CC	80%			70%			50%			30%			10%			0
r W	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
r 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	.181	.156	.134	.155	.134	.115	.106	.092	.080	.061	.053	.046	.019	.017	.015	
2.0	.173	.132	.098	.148	.114	.084	.101	.079	.059	.058	.046	.035	.019	.015	.011	
3.0	.165	.114	.074	.141	.099	.064	.097	.069	.045	.056	.040	.027	.018	.013	.009	
4.0	.157	.101	.058	.135	.087	.050	.093	.061	.035	.054	.036	.021	.017	.012	.007	
5.0	.150	.091	.047	.129	.078	.041	.089	.055	.029	.051	.032	.017	.017	.010	.006	
6.0	.143	.082	.039	.123	.071	.034	.085	.050	.024	.049	.029	.014	.016	.010	.005	
7.0	.136	.075	.033	.117	.065	.029	.081	.046	.020	.047	.027	.012	.015	.009	.004	
8.0	.129	.070	.029	.111	.060	.025	.077	.042	.018	.045	.025	.011	.014	.008	.003	
9.0	.123	.065	.025	.106	.056	.022	.074	.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: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-12-16

Range: 0 - 90DEG
 Interval: 1.0DEG
 Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.0.366
 Humidity:65.0%
 Test Distance:3.200m [K=1.0000]
 Remarks:

UGR(Unified Glare Rating) Table

NAME:						TYPE:WFR8R24930UNVWS			WEIGHT:		
SPEC.:						DIM.:			SERIAL No.:		
MFR.: RAB LIGHTING INC.						SUR.:21cm*16cm			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	2H	16.8	18.3	17.0	18.5	18.7	17.1	18.6	17.4	18.8	19.0
	3H	18.3	19.7	18.6	20.0	20.2	18.8	20.2	19.1	20.4	20.7
	4H	18.9	20.3	19.3	20.5	20.8	19.5	20.9	19.8	21.1	21.4
	6H	19.4	20.6	19.7	20.9	21.2	20.1	21.4	20.4	21.6	21.9
	8H	19.5	20.7	19.8	21.0	21.3	20.3	21.5	20.7	21.8	22.1
	12H	19.5	20.7	19.8	21.0	21.3	20.4	21.6	20.8	21.9	22.2
4H	2H	17.4	18.8	17.8	19.0	19.3	17.7	19.0	18.0	19.3	19.6
	3H	19.2	20.4	19.5	20.7	21.0	19.6	20.8	19.9	21.1	21.4
	4H	20.0	21.0	20.3	21.4	21.7	20.4	21.5	20.8	21.9	22.2
	6H	20.5	21.4	20.9	21.8	22.2	21.2	22.1	21.6	22.5	22.8
	8H	20.6	21.5	21.0	21.9	22.3	21.4	22.3	21.8	22.7	23.1
	12H	20.7	21.5	21.1	21.9	22.3	21.6	22.5	22.1	22.8	23.2
8H	4H	20.3	21.2	20.7	21.6	21.9	20.7	21.6	21.1	22.0	22.4
	6H	21.0	21.7	21.4	22.1	22.5	21.6	22.3	22.0	22.7	23.2
	8H	21.2	21.9	21.7	22.3	22.7	22.0	22.6	22.4	23.0	23.5
	12H	21.3	21.9	21.8	22.4	22.8	22.2	22.8	22.7	23.3	23.7
12H	4H	20.3	21.1	20.7	21.5	21.9	20.7	21.6	21.2	21.9	22.3
	6H	21.0	21.7	21.5	22.1	22.6	21.6	22.3	22.1	22.7	23.2
	8H	21.3	21.9	21.8	22.3	22.8	22.0	22.6	22.5	23.1	23.5
Variations with the observer position at spacings:											
S = 1.0H	+ 0.1 / - 0.2					+ 0.1 / - 0.2					
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3					
2.0H	+ 0.2 / - 0.3					+ 0.1 / - 0.2					

CIE Pub.117, 2015 lm Total Lamp Luminous Flux Correct ($8\log(F/F_0) = 2.4$)

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-12-16

Range: 0 - 90DEG
 Interval: 1.0DEG
 Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.0.366
 Humidity:65.0%
 Test Distance:3.200m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

NAME:	TYPE:WFR8R24930UNVWS	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: RAB LIGHTING INC.	SUR.:21cm*16cm	Shielding Angle:

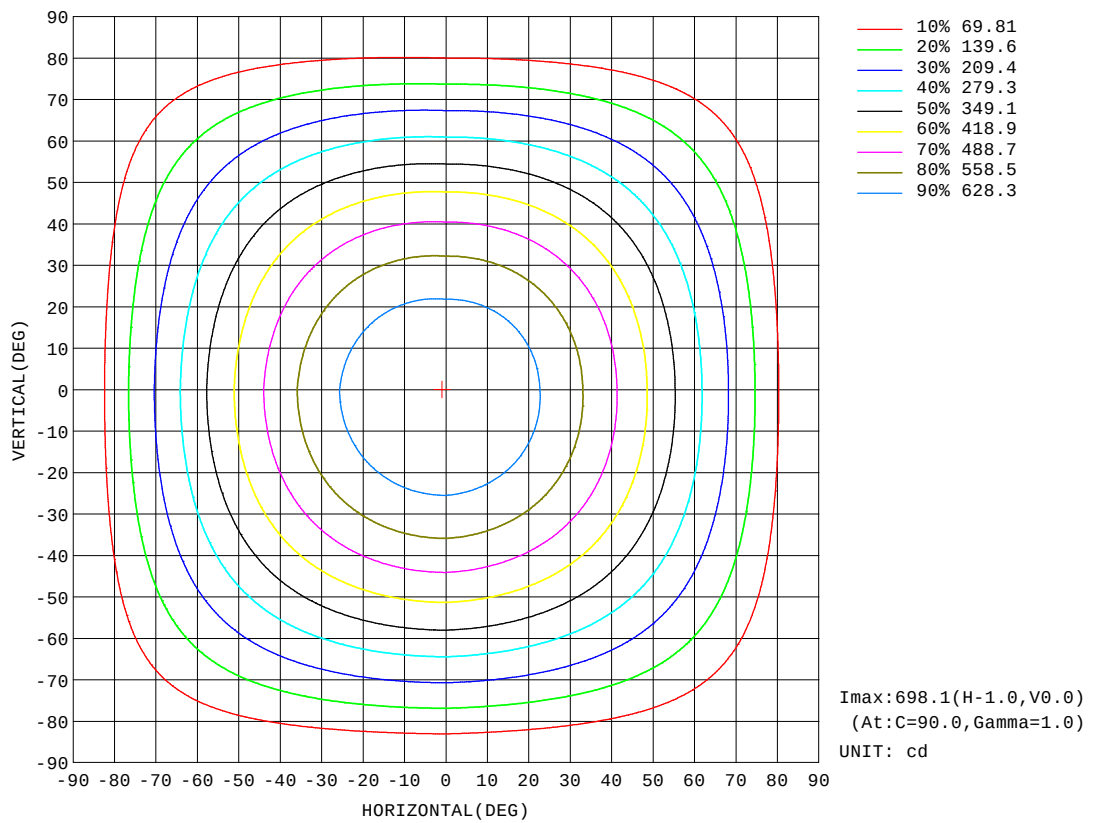
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	57	46	39	56	45	38	55	45	38	32
0.80	67	55	48	66	55	48	64	54	48	41
1.00	76	64	57	74	64	57	72	65	56	49
1.25	83	72	65	81	71	64	79	70	64	56
1.50	88	78	71	86	77	70	83	75	69	61
2.00	95	86	79	93	85	79	89	83	77	69
2.50	99	91	85	97	89	84	93	87	82	73
3.00	102	95	89	100	93	88	96	91	86	78
4.00	106	100	96	104	98	94	99	95	91	83
5.00	109	104	99	106	102	98	102	98	95	86
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2019-12-16

Range: 0 - 90DEG
Interval: 1.0DEG
Test System:EVERFINE G0-SPEX500_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:3.200m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

NAME:	TYPE:WFR8R24930UNVWS	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: RAB LIGHTING INC.	SUR.:21cm*16cm	Shielding Angle:

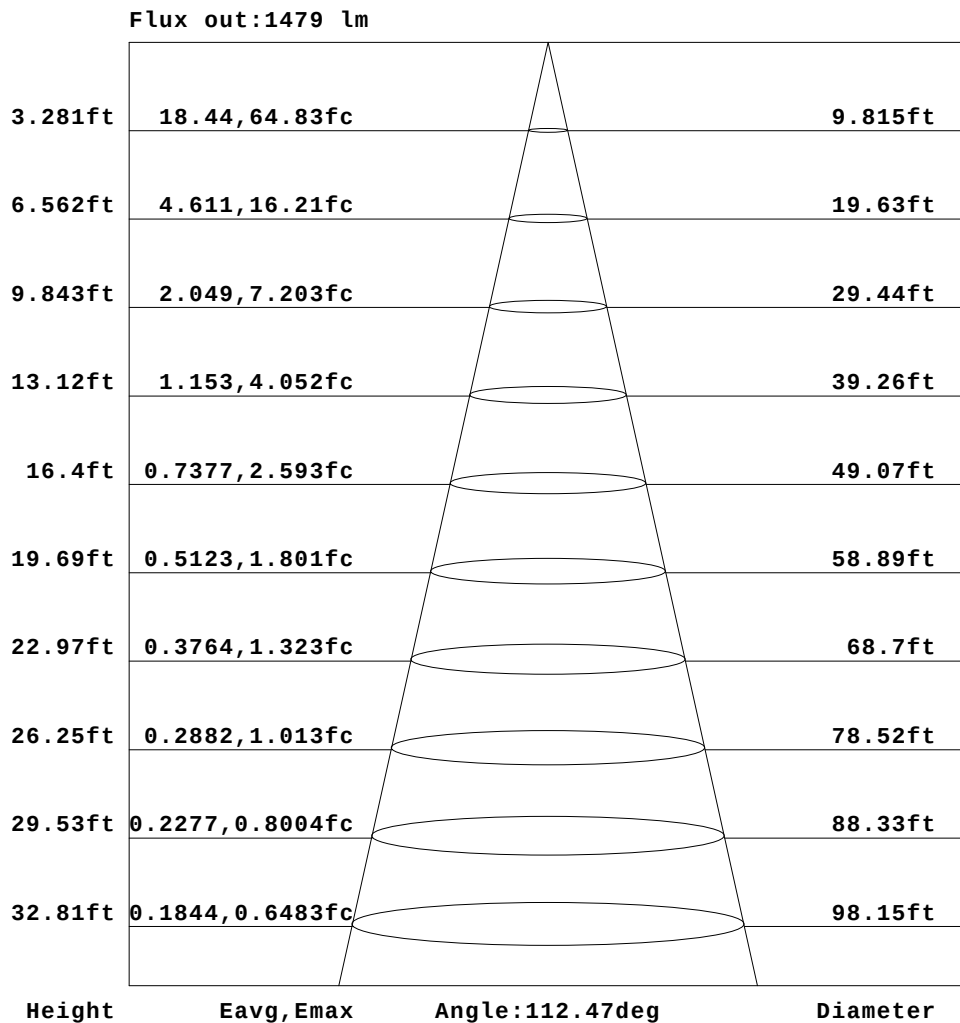


C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2019-12-16

Range: 0 - 90DEG
Interval: 1.0DEG
Test System: EVERFINE G0-SPEX500_V1 SYSTEM V2.0.366
Humidity: 65.0%
Test Distance: 3.200m [K=1.0000]
Remarks:

AAI Figure

NAME:	TYPE:WFR8R24930UNVWS	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: RAB LIGHTING INC.	SUR.:21cm*16cm	Shielding Angle:

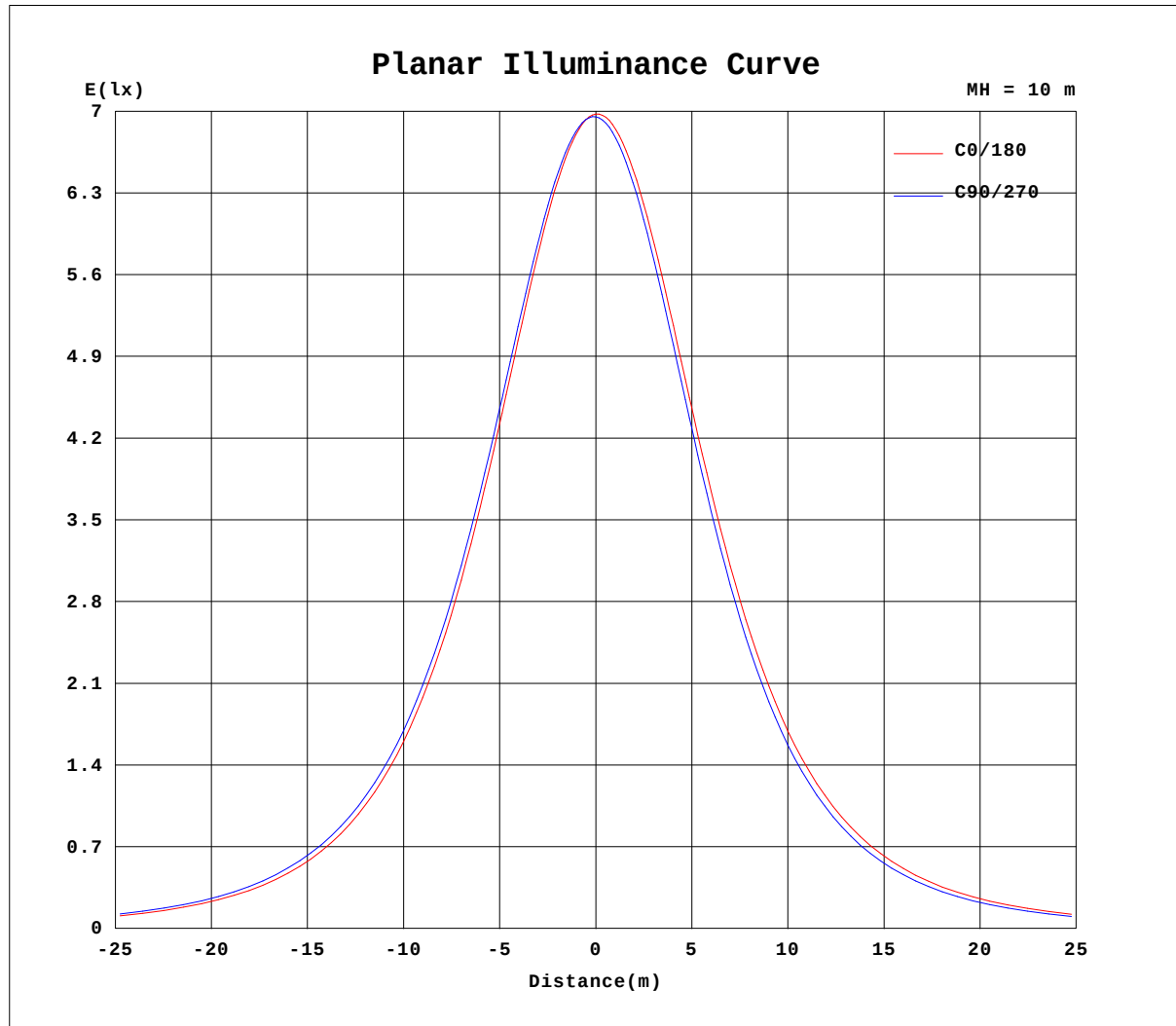


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-12-16

Range: 0 - 90DEG
 Interval: 1.0DEG
 Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.0.366
 Humidity:65.0%
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 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
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 Operators: DAMIN
 Test Date: 2019-12-16

Range: 0 - 90DEG
 Interval: 1.0DEG
 Test System: EVERFINE G0-SPEX500_V1 SYSTEM V2.0.366
 Humidity: 65.0%
 Test Distance: 3.200m [K=1.0000]
 Remarks:

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Range: 0 - 90DEG
Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:3.200m [K=1.0000]
Remarks:

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