

Light Measurement Report

Print date: 2024-07-16
Measurement date and time: 2024-07-15 1:18:56 PM – Measurement no. TR-0080-240715
Operator - NC
SKU: I24VRGBADW276012605050 - 2700k



Laboratory and Equipment

Laboratory Owner and Location	Moss LED, Toronto, Ontario, Canada
Goniospectrometer System and Type	BaseSpion – Type C, horizontal
Sensor Name, Calibr. Date and Serial No.	BaseSensor – 2023-06-27 – 2807073281
Spectrometer Manufacturer and Model	Ibsen Photonics, Denmark – Freedom VIS (Custom Viso)

Measurement Conditions

Number of C-planes and Resolution	12 planes – 30°
γ (gamma)-Resolution	5°
Test Distance	4.50 m
Input Power per 1 meter	11.3 W
Input RMS Voltage and Current per 1 meter	24.0 V – 0.469 A
Frequency of Input Power	0 Hz

Tested Light Source

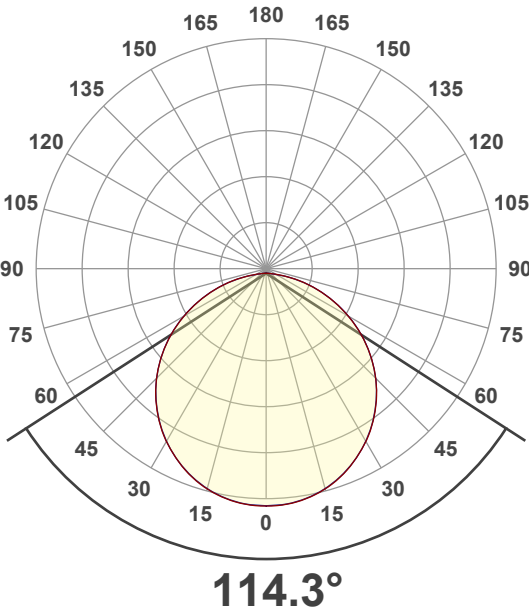
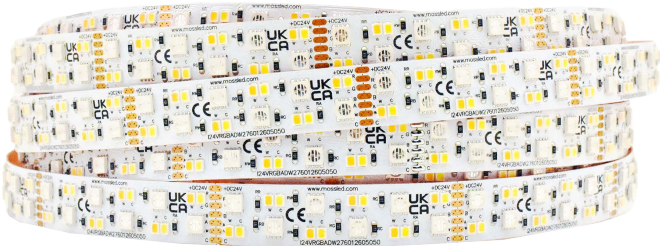
Product Name (-type of measurement if applicable)	I24VRGBADW276012605050-WW
Manufacturer	MossLED Inc.
Description and colour tested	24V RGBA+WW+CW 252 leds/m. 2700K test

Main Light Measurement Results

Total Lumen Output per 1 meter	1082 lm
Efficiency (tested at 1 meter)	96 lm/W
Peak Intensity and Beam Angle	371 cd – 114.3°
Correlated Color Temperature, Straight-on / Average	CCT = 2725 K / 2677 K
Color Rendering Index	CRI 95.5
Color Rendering TM30-18	R _f 92.9 – R _g 100.0
Color Shift, CIE duv and MacAdam Steps	Duv -0.0013 – SDCM 2.3
Flicker	SVM n/a – PstLM n/a

Product picture

50% Beam angle (absolute values)



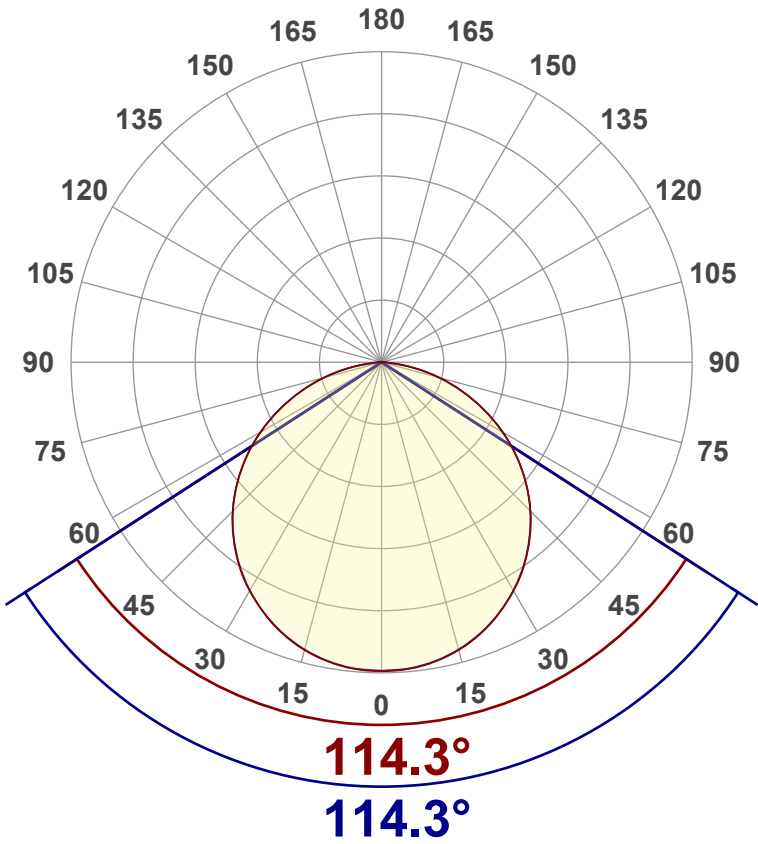
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Luminous Intensity diagram

Unit: 0-100% of peak intensity



Main Values

Output/m (total Lumen) 1082 lm
Lumen Up% / Down% 0.56% / 99.44%
Peak Intensity 371 cd
Beam Angle (50%) 114.3°
Beam Angle (90%) 114.3°
Beam Angle (10%) 114.3°

Cut-off Angle

Average 2,5% 173°

Field Angle

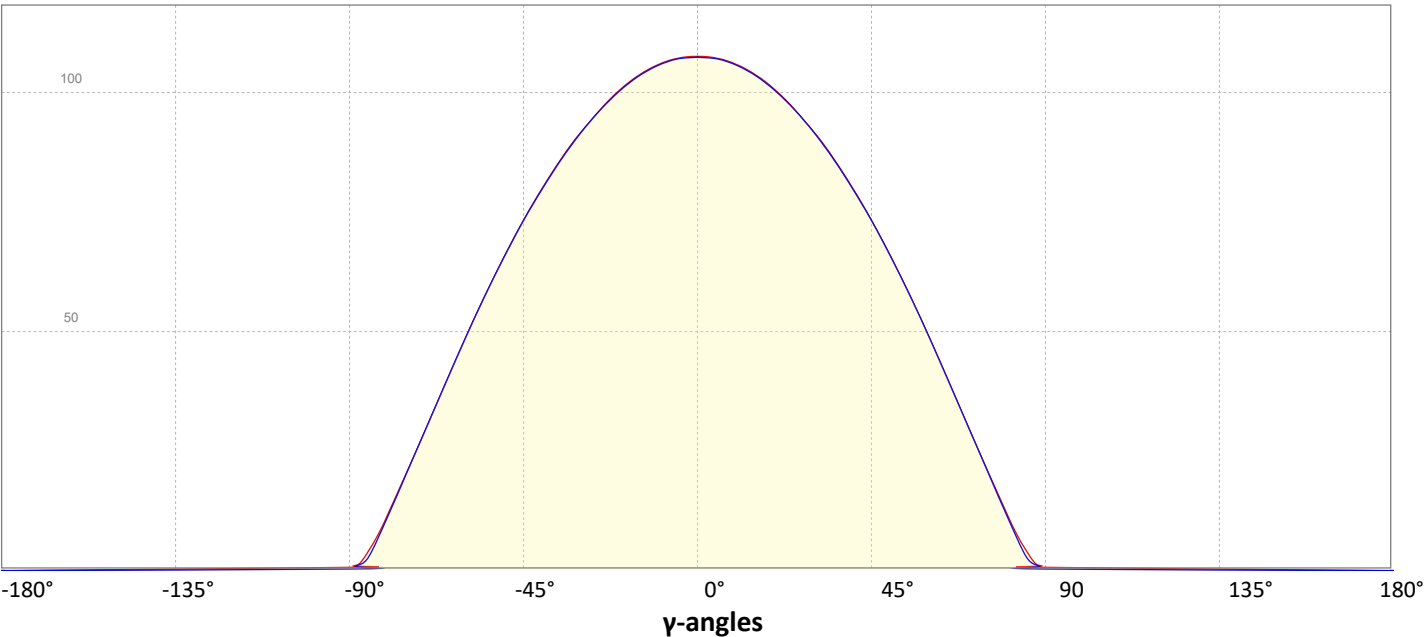
Average 10% 161.7°

Intensity Ratio

In 120° cone 78.3%
In 90° cone 53.0%

C000-C180
C090-C270

Linear distribution diagram - Intensity (candela) vs γ-angle



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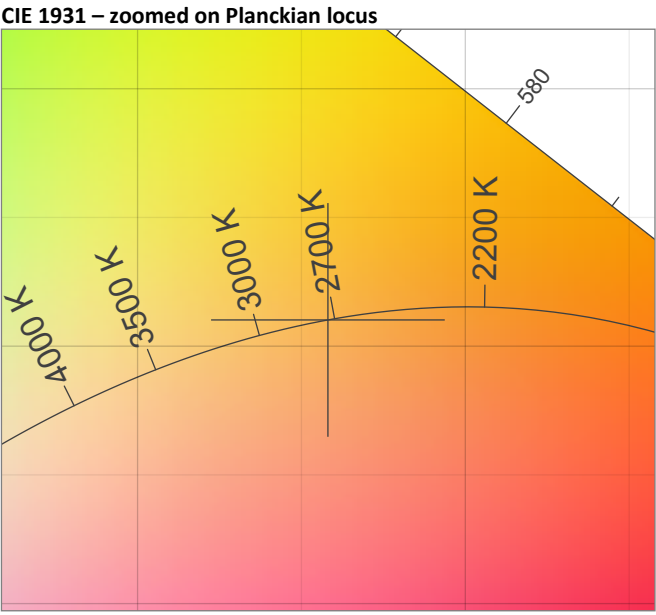
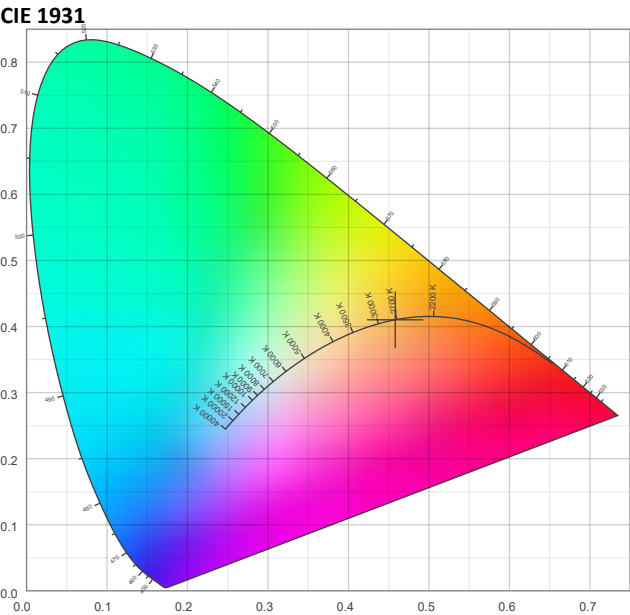
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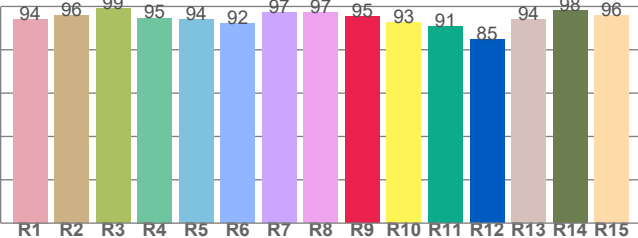
Color details

Correlated Color Temperature, Straight-on CCT = 2725 K
Correlated Color Temperature, Average CCT = 2677 K
Color Rendering Index CRI 95.5
Color Rendering Index, R9 (red component) R9 = 95.3
Color Rendering TM30-18 R_f 92.9 – R_g 100.0
Color Quality Scale CQS = 94.4

MacAdam Steps
Color coordinates CIE 1931 (x;y) = (0.458;0.410)
Color coordinate CIEs 1960 (u;v) = (0.262;0.351)
Color deviation from BBL Duv = -0.0013
Color coordinate CIEs 1976 (CIELUV) (u';v') = (0.262;0.527)



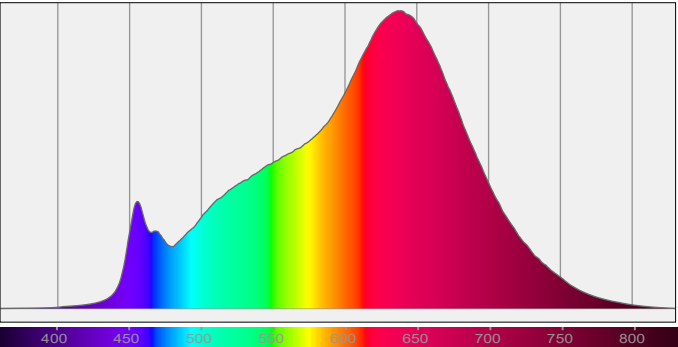
Color Rendering Index per reference color (CIE 1995)



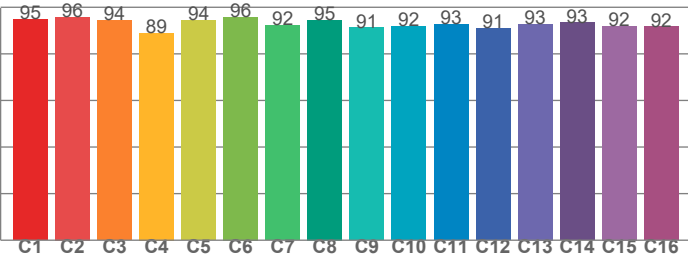
CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
94.2	96.0	99.1	94.7	93.8	92.1	97.3	97.2	95.3	92.7	90.9	84.6	94.0	98.3	95.8

Spectral power distribution (SPD) – 0-100%



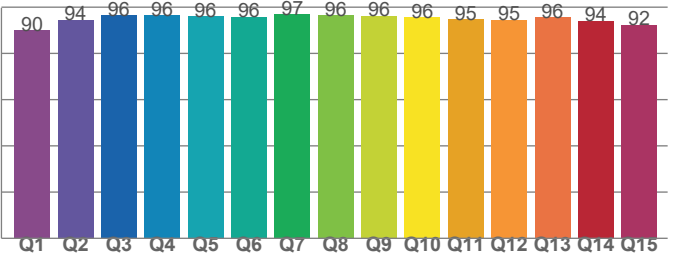
TM30-18 Rf-values per hue bin



TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
94.9	95.9	94.3	88.9	94.4	95.7	92.3	94.6	91.3	91.9	92.6	91.0	92.7	93.4	92.0	91.7

Color Quality Scale by reference color

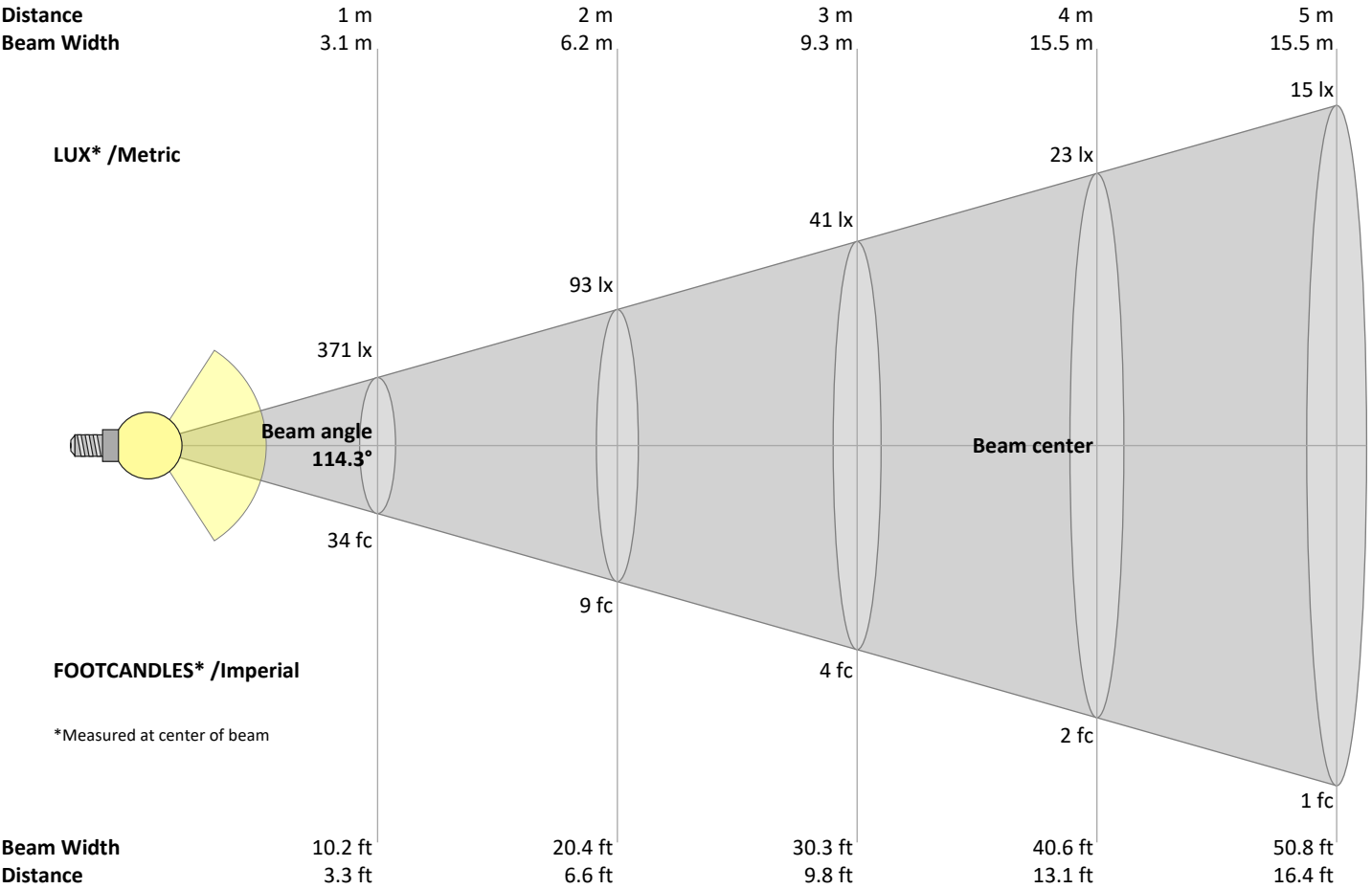


CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
89.8	94.4	96.3	96.3	96.1	95.8	96.8	96.5	96.2	95.6	94.8	94.6	95.6	94.0	92.4

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Beam intensities from 1 – 20 m																				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	m
3.3	6.6	9.8	13.1	16.4	19.7	23	26.2	29.5	32.8	36.1	39.4	42.7	45.9	49.2	52.5	55.8	59.1	62.3	65.6	ft
371	93	41	23	15	10	8	6	5	4	3	3	2	2	2	1	1	1	1	1	lux
34.4	8.6	3.8	2.2	1.4	1	0.7	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	fc

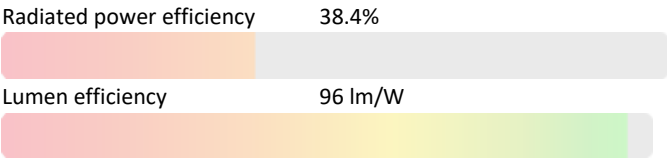
Power Details

Input Power

RMS Input voltage feed, V_{RMS}
RMS Input current feed, I_{RMS}
Power feed to light source
Frequency of input power
Power factor of AC current feed

24.0 V
0.469 A
11.3 W
0 Hz
1.0

Efficiency



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Light Planning – UGR table

Uncorrected, comprehensive UGR table according to 117-1995

Reflectances											
	ρ Ceiling	70	70	50	50	30	70	70	50	50	30
	ρ Walls	50	30	50	30	30	50	30	50	30	30
	ρ Floor	20	20	20	20	20	20	20	20	20	20
Room size											
H = mounting height above eye level											
X	Y	Viewed Crosswise					Viewed Endwise				
		(Viewing direction orthogonal to lamp length axis)					(Viewing direction parallel to lamp length axis)				
2H	2H	21.5	22.8	21.8	23.1	23.3	22.2	23.4	22.4	23.7	23.9
	3H	22.7	24.0	23.2	24.3	24.5	23.6	24.9	24.0	25.2	25.4
	4H	23.2	24.4	23.6	24.7	25.0	24.2	25.4	24.6	25.7	26.0
	6H	23.6	24.6	23.9	24.9	25.3	24.7	25.8	25.0	26.0	26.4
	8H	23.6	24.7	24.0	25.0	25.4	24.8	25.8	25.1	26.1	26.5
	12H	23.6	24.6	24.0	25.0	25.4	24.8	25.8	25.2	26.1	26.6
4H	2H	22.1	23.3	22.5	23.6	23.9	22.6	23.8	23.0	24.1	24.4
	3H	23.7	24.7	24.0	25.0	25.4	24.4	25.4	24.7	25.7	26.2
	4H	24.2	25.1	24.6	25.5	26.0	25.0	25.9	25.5	26.4	26.9
	6H	24.5	25.4	25.0	25.8	26.1	25.5	26.4	26.0	26.8	27.1
	8H	24.6	25.4	25.1	25.8	26.2	25.6	26.5	26.2	26.8	27.2
	12H	24.6	25.3	25.1	25.7	26.2	25.7	26.4	26.2	26.8	27.3
8H	4H	24.4	25.2	24.9	25.6	26.0	25.2	26.0	25.7	26.4	26.7
	6H	24.9	25.5	25.4	26.0	26.5	25.8	26.4	26.3	26.9	27.4
	8H	25.1	25.6	25.6	26.1	26.8	26.0	26.6	26.5	27.1	27.7
	12H	25.1	25.6	25.7	26.1	26.7	26.1	26.6	26.7	27.1	27.7
12H	4H	24.4	25.1	24.9	25.5	26.0	25.2	25.8	25.7	26.3	26.7
	6H	25.0	25.5	25.5	26.0	26.7	25.8	26.4	26.4	26.9	27.5
	8H	25.1	25.6	25.7	26.1	26.7	26.1	26.5	26.6	27.0	27.6
Variations with the observer position for the luminaire spacings, S:											
S = 1.0H		0.1 / -0.1					0.1 / -0.1				
S = 1.5H		0.2 / -0.4					0.2 / -0.3				
S = 2.0H		0.6 / -0.7					0.5 / -0.7				

Coefficients of Utilization

Ceiling reflectance	80			70			50			30			10			0		
Wall reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Floor reflectance	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	0
RCR		(RCR: Room Cavity Ratio)																
		Room Values are expressed as percentage of Lumen delivered to the task surface																
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	99
1	109	104	100	96	106	101	98	94	97	94	91	93	90	88	89	87	85	83
2	99	90	83	78	96	88	82	77	85	79	75	81	77	73	78	75	71	69
3	90	79	71	64	87	78	70	64	74	68	63	72	66	61	69	64	60	58
4	82	70	61	54	80	69	60	54	66	59	53	64	57	52	61	56	52	49
5	75	63	53	47	73	61	53	46	59	52	46	57	51	45	55	49	45	43
6	70	56	47	41	68	55	47	41	53	46	40	52	45	40	50	44	39	37
7	65	51	42	36	63	50	42	36	48	41	35	47	40	35	46	39	35	33
8	60	46	38	32	58	46	38	32	44	37	32	43	36	31	42	36	31	29
9	56	43	34	29	55	42	34	29	41	34	28	40	33	28	39	33	28	26
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24