

Light Measurement Report

Print date: 2024-02-08
Measurement date and time: 2024-01-25 8:09:47 PM – Measurement no. TR-0061-240125
Measurement tracking No. and Link: [n/a](#)
Operator: NC
SKU: I24VRGBW27360UCS8904 2700K @ FULL



Laboratory and Equipment

Laboratory Owner and Location
Goniospectrometer System and Type
Sensor Name, Calibr. Date and Serial No.
Spectrometer Manufacturer and Model

Moss LED, Toronto, Ontario, Canada
BaseSpion – Type C, horizontal
BaseSensor – 2023-06-27 – 2807073281
Ibsen Photonics, Denmark – Freedom VIS (Custom Viso)

Measurement Conditions

Number of C-planes and Resolution
 γ (gamma)-Resolution
Test Distance
Input Power per 1 meter
Input RMS Voltage and Current per 1 meter
Frequency of Input Power

12 planes – 30°
5°
4.50 m
6.6 W
24.0 V – 0.276 A
0 Hz

Tested Light Source

Product Name (-type of measurement if applicable)
Manufacturer
Description and colour tested

I24VRGBW27360UCS8904
MossLED Inc.
24V RGB+2700K Pixel, 72LPM - Warm white

Main Light Measurement Results

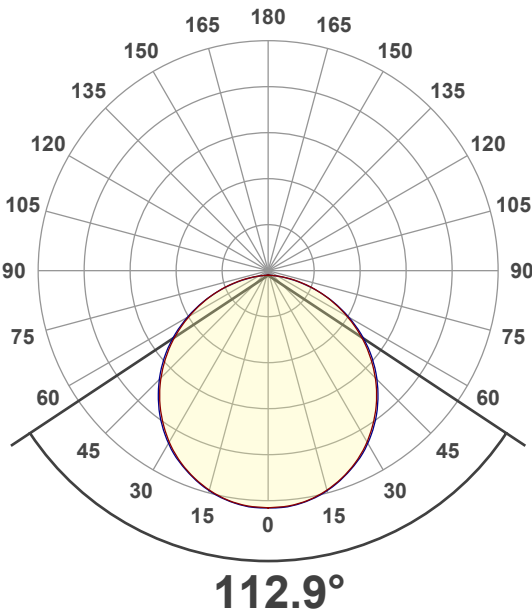
Total Lumen Output per 1 meter
Efficiency (tested at 1 meter)
Peak Intensity and Beam Angle
Correlated Color Temperature, Target/Measured
Color Rendering Index
Color Rendering TM30-18
Color Shift, CIE duv and MacAdam Steps
Flicker

347 lm
52 lm/W
120 cd – 112.9°
CCT = 2700 K / 2695 K
CRI 95.9
R_f 93.1 – R_g 100.5
Duv -0.0031 – SDCM 3.3
SVM n/a – PstLM n/a

Product picture



50% Beam angle (absolute values)



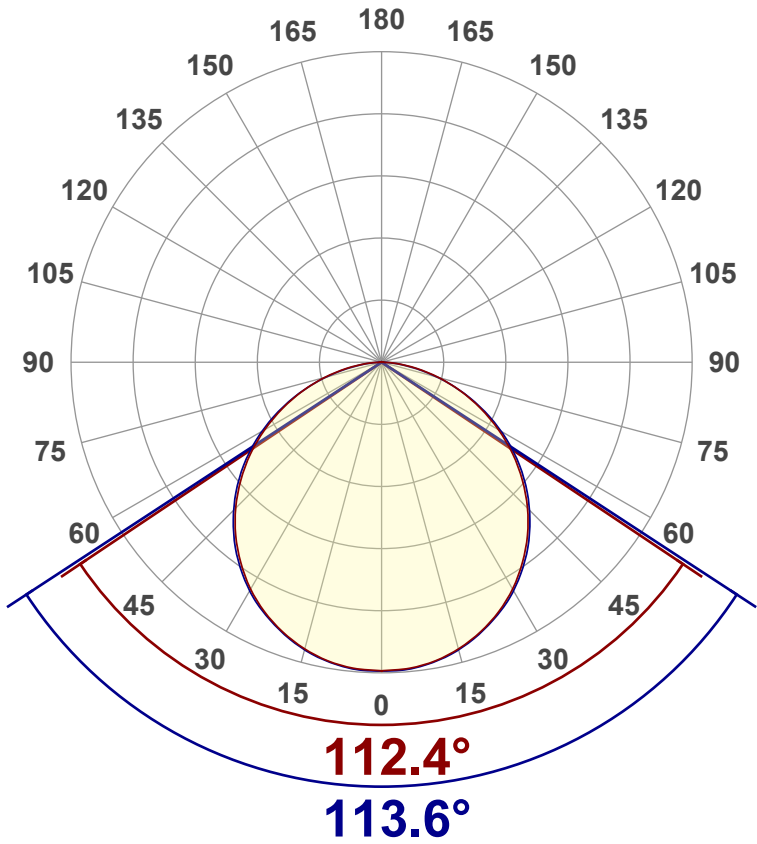
Light Measurement Report

Print date: 2024-02-08
Measurement date and time: 2024-01-25 8:09:47 PM – Measurement no. TR-0061-240125
Operator: NC
SKU: I24VRGBW27360UCS8904 2700K @ FULL



Luminous Intensity diagram

Unit: 0-100% of peak intensity



Main Values

Output/m (total Lumen) 347 lm
Lumen Up% / Down% 0.43% / 99.57%
Peak Intensity 120 cd
Beam Angle (50%) 112.9°
Beam Angle (90%) 113.6°
Beam Angle (10%) 112.4°

Cut-off Angle

Average 2,5% 174.4°

Field Angle

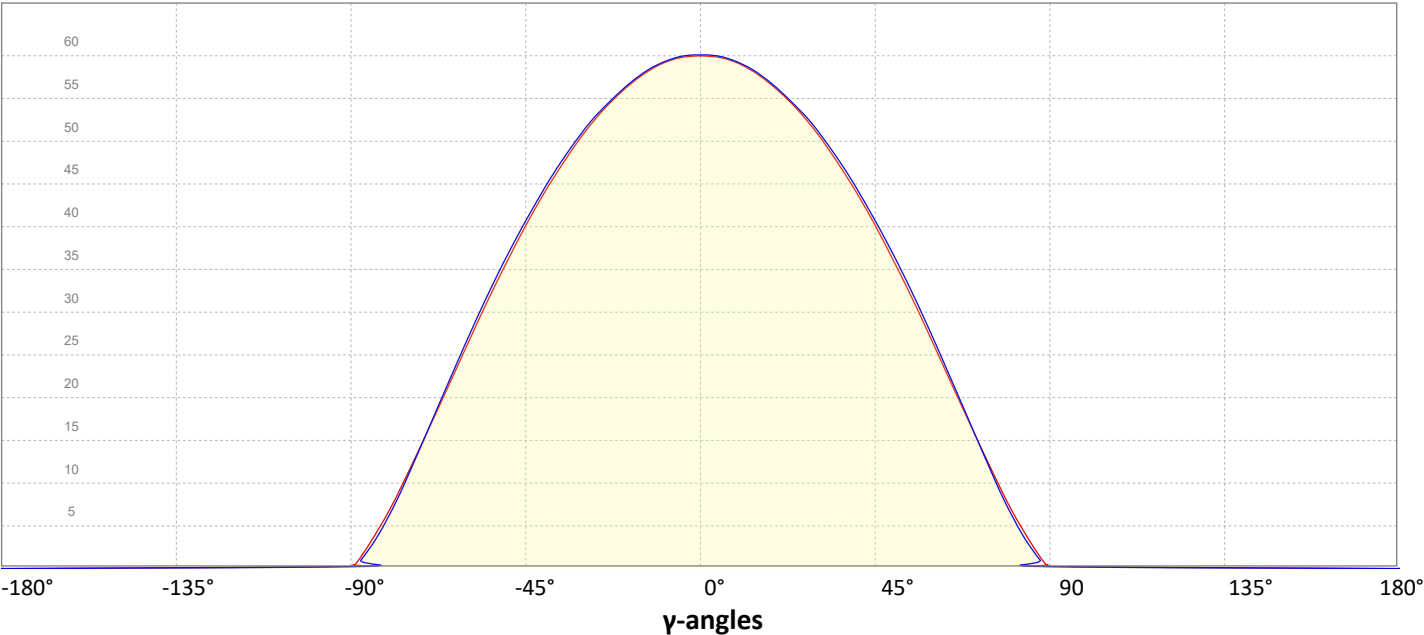
Average 10% 161.9°

Intensity Ratio

In 120° cone 78.4%
In 90° cone 53.3%

C000-C180
C090-C270

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



Light Measurement Report

Print date: 2024-02-08
Measurement date and time: 2024-01-25 8:09:47 PM – Measurement no. TR-0061-240125
Operator: NC
SKU: I24VRGBW27360UCS8904 2700K @ FULL

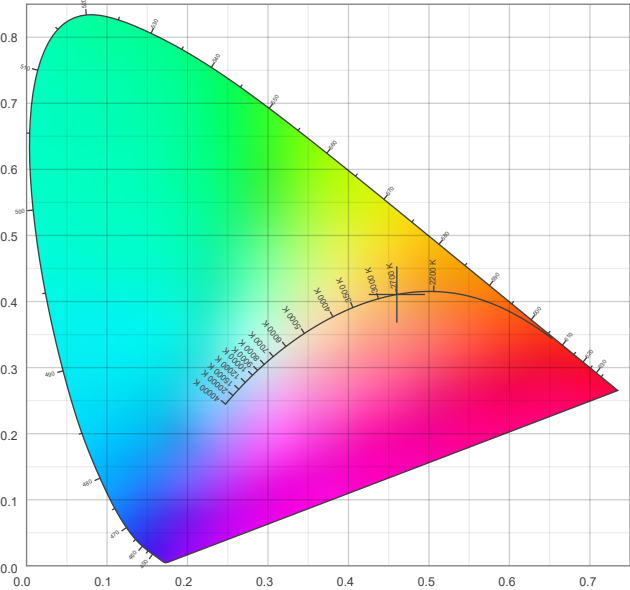


Color details

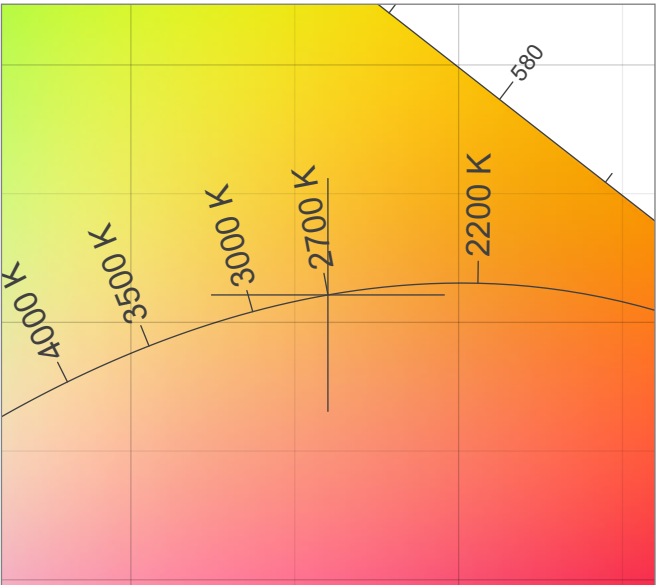
Correlated Color Temperature, Target CCT = 2700 K
Correlated Color Temperature, Measured CCT = 2695 K
Color Rendering Index CRI 95.9
Color Rendering Index, R9 (red component) R9 = 98.1
Color Rendering TM30-18 R_f 93.1 – R_g 100.5
Color Quality Scale CQS = 94.5

MacAdam Steps
Color coordinates CIE 1931 (x;y) = (0.460;0.411)
Color coordinate CIEs 1960 (u;v) = (0.263;0.352)
Color deviation from BBL Duv = -0.0031
Color coordinate CIEs 1976 (CIELUV) (u';v') = (0.263;0.527)

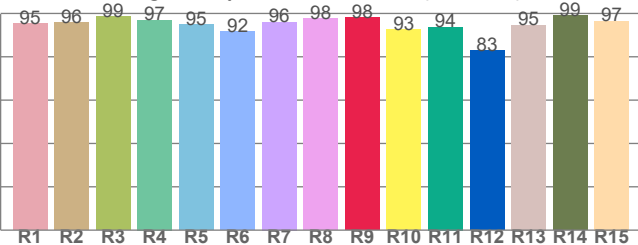
CIE 1931



CIE 1931 – zoomed on Planckian locus



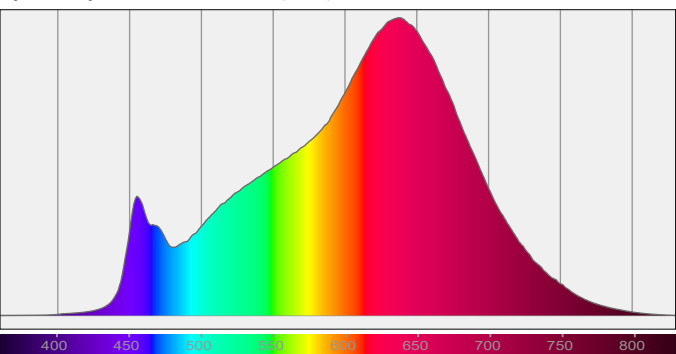
Color Rendering Index per reference color (CIE 1995)



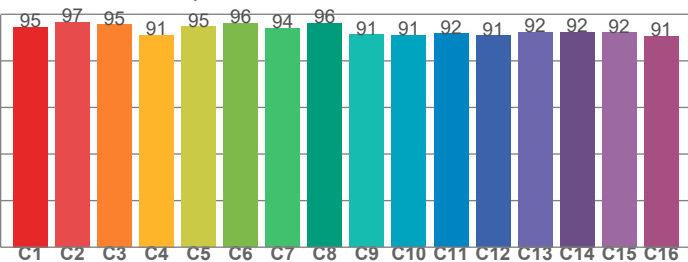
CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
95.2	95.7	98.7	96.9	94.8	91.8	96.1	97.8	98.1	92.5	93.8	82.8	94.7	98.9	96.5

Spectral power distribution (SPD) – 0-100%



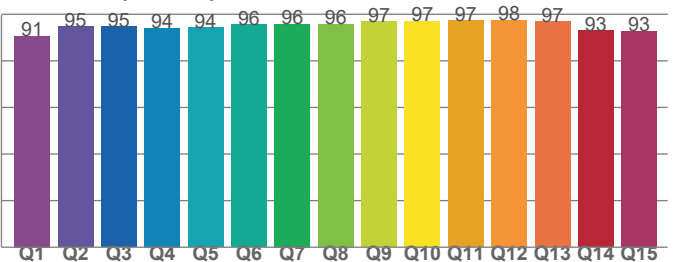
TM30-18 Rf-values per hue bin



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
94.6	96.5	95.5	91.0	94.7	96.1	93.9	96.1	91.2	91.0	91.7	90.9	92.4	92.4	92.2	90.7

Color Quality Scale by reference color

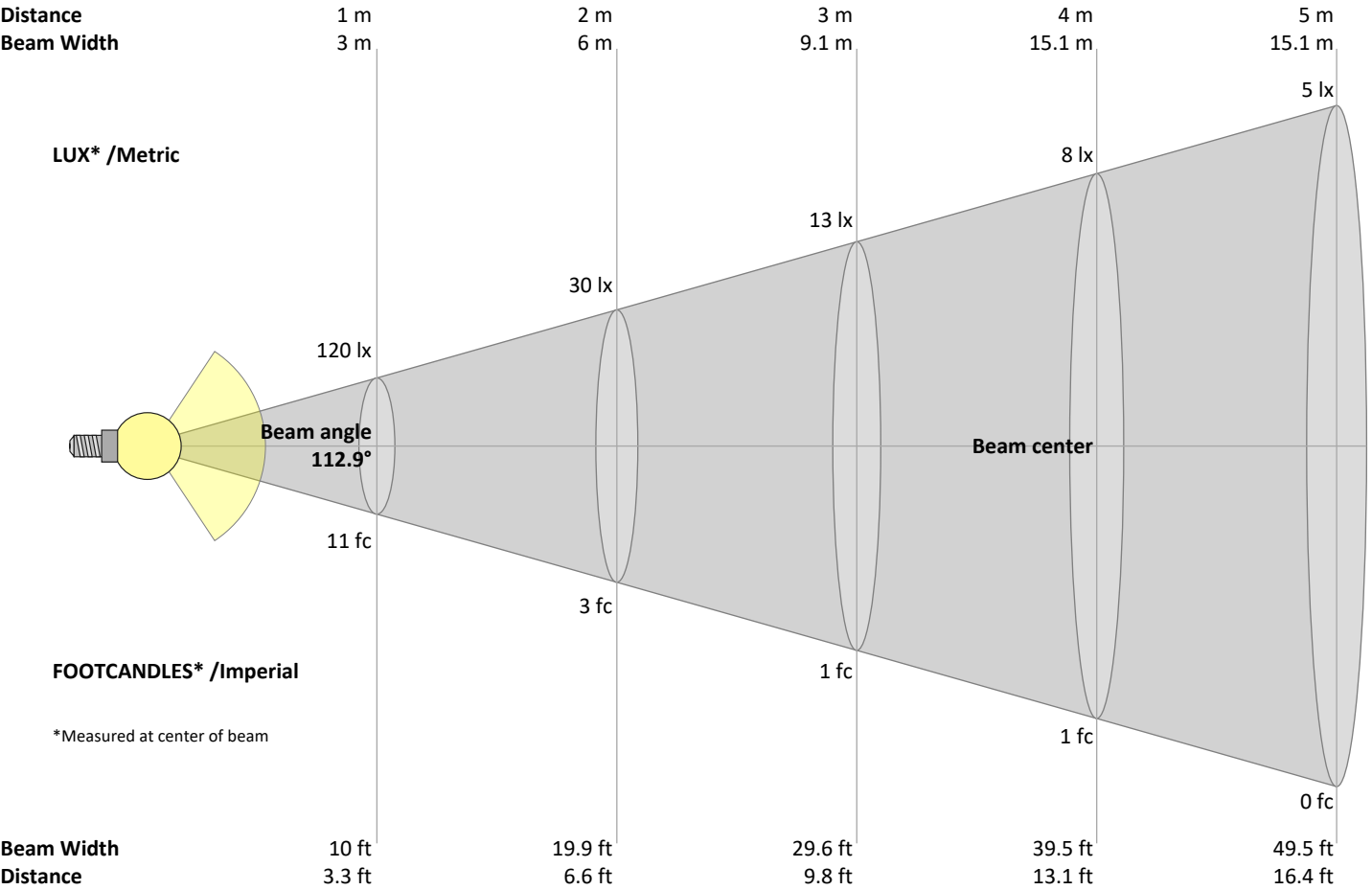


CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
90.8	94.8	94.6	94.0	94.4	95.6	95.7	95.7	96.8	97.1	97.3	97.5	96.8	93.1	92.8

Light Measurement Report

Print date: 2024-02-08
Measurement date and time: 2024-01-25 8:09:47 PM – Measurement no. TR-0061-240125
Operator: NC
SKU: I24VRGBW27360UCS8904 2700K @ FULL



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
120	30	13	8	5	3	2	2	1	1	1	1	1	1	1	0	0	0	0	0	lux
11.2	2.8	1.2	0.7	0.4	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	0	0	0	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
0.276 A
6.6 W
0 Hz
1.0

Efficiency

Radiated power efficiency 20.9%
Lumen efficiency 52 lm/W

Light Measurement Report

Print date: 2024-02-08
Measurement date and time: 2024-01-25 8:09:47 PM – Measurement no. TR-0061-240125
Operator: NC
SKU: I24VRGBW27360UCS8904 2700K @ FULL



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		Viewed Crosswise					Viewed Endwise				
H = mounting height above eye level		(Viewing direction orthogonal to lamp length axis)					(Viewing direction parallel to lamp length axis)				
X	Y										
2H	2H	18.7	19.9	19.0	20.3	20.5	19.8	21.0	20.0	21.3	21.5
	3H	19.9	21.1	20.3	21.4	21.6	21.2	22.5	21.6	22.7	22.9
	4H	20.3	21.5	20.7	21.8	22.0	21.8	23.0	22.2	23.3	23.5
	6H	20.6	21.7	20.9	22.0	22.3	22.3	23.3	22.6	23.6	24.0
	8H	20.7	21.7	21.0	22.0	22.4	22.4	23.4	22.7	23.7	24.1
	12H	20.7	21.7	21.0	22.0	22.5	22.4	23.4	22.8	23.8	24.2
4H	2H	19.3	20.5	19.7	20.8	21.1	20.1	21.4	20.6	21.6	21.9
	3H	20.8	21.8	21.1	22.1	22.5	21.9	22.9	22.2	23.2	23.6
	4H	21.2	22.1	21.7	22.6	23.1	22.5	23.4	22.9	23.8	24.3
	6H	21.6	22.4	22.1	22.8	23.2	23.0	23.8	23.5	24.2	24.6
	8H	21.6	22.4	22.2	22.8	23.2	23.1	23.9	23.6	24.3	24.7
	12H	21.7	22.4	22.2	22.8	23.3	23.2	23.9	23.7	24.3	24.8
8H	4H	21.5	22.3	22.0	22.6	23.0	22.6	23.4	23.1	23.8	24.2
	6H	21.9	22.5	22.4	23.0	23.6	23.2	23.8	23.7	24.3	24.8
	8H	22.1	22.6	22.6	23.1	23.8	23.4	24.0	23.9	24.5	25.1
	12H	22.2	22.6	22.7	23.1	23.7	23.6	24.0	24.2	24.5	25.1
12H	4H	21.5	22.1	22.0	22.6	23.0	22.6	23.3	23.1	23.7	24.2
	6H	22.0	22.5	22.5	23.0	23.7	23.2	23.8	23.7	24.3	24.9
	8H	22.1	22.6	22.7	23.1	23.7	23.5	23.9	24.0	24.4	25.0
Variations with the observer position for the luminaire spacings, S:											
S = 1.0H		0.1 / -0.2					0.0 / -0.1				
S = 1.5H		0.3 / -0.4					0.2 / -0.3				
S = 2.0H		0.6 / -0.8					0.7 / -0.8				

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	100
1	109	104	99	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	75	68	63	72	66	61	69	64	60	58
4	82	70	61	55	80	69	60	54	66	59	53	64	58	53	62	56	52	50
5	76	63	54	47	73	61	53	47	59	52	46	57	51	45	55	50	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	49	41	36	47	40	35	46	40	35	33
8	60	47	38	32	59	46	38	32	44	37	32	43	36	32	42	36	31	29
9	56	43	34	29	55	42	34	29	41	34	29	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