

VEROBOARD®

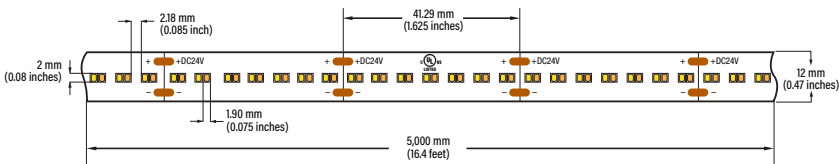
LED Type: VBDFS-2216-CW&WW-336-24-NS
Colour: 1800K-4200K (Dim to Warm)



DESCRIPTION

Flexible 12 mm wide linear Dim to Warm LED strip. Available in 5 meters (16.4 feet) rolls that can be cut every 14 LEDs (41.5 mm or 1.625 in). The LED Strip lights are manufactured with high-quality materials and designed for professional lighting. Every strip light begins with a heavy-duty dual-core copper printed circuit board (PC Board), which is then soldered with an array of chips and color options. Two chips are joined in 1 SMD to provide the adjustable color temperature. It allows the designers and professionals to adjust the color temperature between 1800K-4200K based on their needs and applications. A unique feature of this strip is the adjustment of the light color temperature to match the dimming. It shifts to a warmer color when dimmed. Furthermore, the strip lights come with a strong 3M adhesive backing. They can be cut to any size (marked interval points) and rejoined by soldering.

DIMENSIONS



SPECIFICATIONS

Model:	VBDFS-2216-CW&WW-336-24-NS
Color Temperature:	1800K-4200K (Dim to Warm)
LED Type:	2216 SMD
LED Qty:	336 LEDs per meter
LM/LED:	8-10 Lm per LED
Input Voltage (VF):	24V DC
Power:	15W per meter (5W/ft)
Brightness:	2688-3360Lm/m (815-1018Lm/ft)
Lifespan:	>50,000 hours
PCB:	4oz PCB, Double-side, white colour 12mm width
IP Rating:	IP20 (Indoor use only)
Rendering Index (Ra):	CRI>95
Beam Angle:	120°
Dimmable:	Yes (Dimming lowers CCT)
Cut Size:	Every 14 LED chips (1.6")
Operating Temperature:	-15°C to +40°C
Dimensions:	5,000 x 12 x 1.2mm (196.8" x 0.47" 0.047")
Certificates:	UL / RoHs
Roll Length:	5 meter roll (16.4ft)

Job Name: _____

Distributor: _____

Type: _____

	Wattage	Brightness
Per Foot	5W/ft	815-1018Lm/ft
Per Meter	15W/m	2688-3360Lm/m

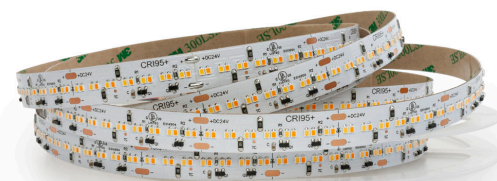
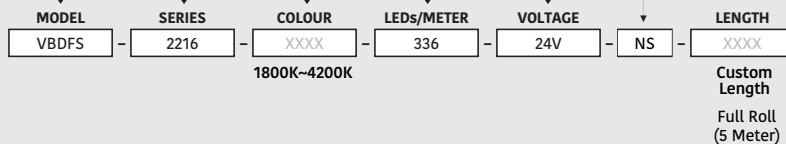


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ORDERING GUIDE

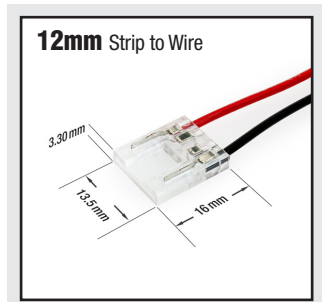
Example part number: **VBDFS - 2216 - CW&WW - 336 - 24 - NS**



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CONNECTORS (Sold Separately)

Note: Connectors fit in some aluminum channels only.



12mm Strip to Wire

MODEL: VBD-BC-12MM-1S1W

Material: Clear Plastic

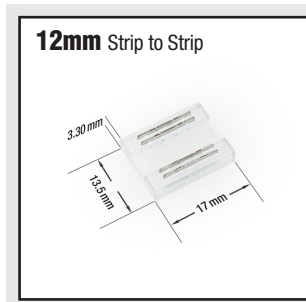
Strip Light Width: 12mm

Package Content: LED Strip to Wire Connectors (Pack of 3)

Dimensions: 16 x 13.5 x 3.5mm (0.62" x 0.53" x 0.13")

666561428914

*with 7" wire on each connector



12mm Strip to Strip

MODEL: VBD-BC-12MM-2S

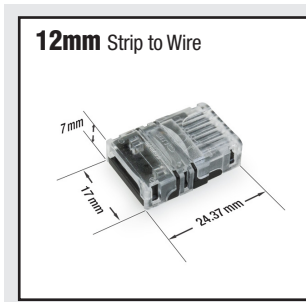
Material: Clear Plastic

Strip Light Width: 12mm

Package Content: LED Strip to Strip Wire Connectors (Pack of 3)

Dimensions: 17 x 13.5 x 3.5mm (0.66" x 0.53" x 0.13")

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12mm Strip to Wire

MODEL: VBD-CON-12MM-1S1W

Material: Clear Plastic

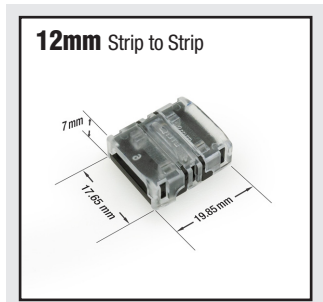
Strip Light Width: 12mm

Package Content: LED Strip to Wire Connectors (Pack of 5)

Dimensions: 24.2 x 17 x 8mm (0.95" x 0.66" x 0.31")

666561424633

*Wire is NOT included



12mm Strip to Strip

MODEL: VBD-CON-12MM-2S

Material: Clear Plastic

Strip Light Width: 12mm

Package Content: LED Strip to Strip Connectors (Pack of 5)

Dimensions: 19.6 x 17.65 x 8mm (0.77" x 0.69" x 0.31")

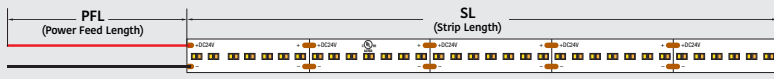
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Notes:

CUSTOM ORDERING GUIDE

Single Run (Straight Run): The below ordering guide will be used for single run LED strip.

- **PFL:** Power Feed Length
- **SL:** Strip Length

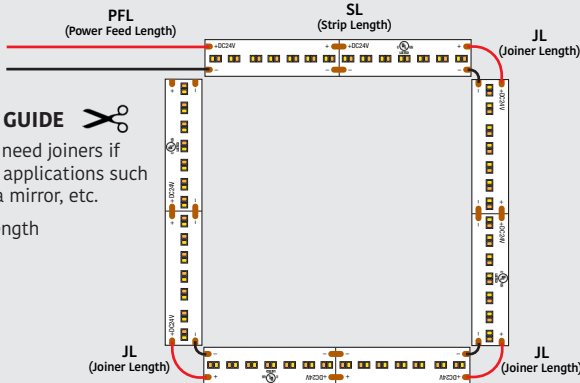


Example: 2 (QTY) x 36" (PFL) - 84" (SL) x -

CUSTOM ORDERING GUIDE

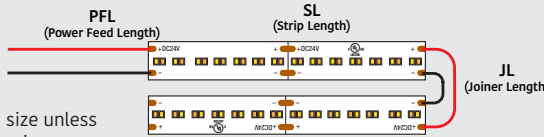
Joiner: LED strip lights need joiners if they are used for curve applications such as corner side, behind a mirror, etc.

- **PFL:** Power Feed Length
- **SL:** Strip Length
- **JL:** Joiner Length



x - - - - - - -

Example: 1 (QTY) x 12" (PFL) - 46" (SL) - 1" (JL) - 36" (SL) - 1" (JL) - 46" (SL) - 1" (JL) - 36" (SL)



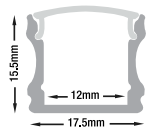
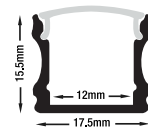
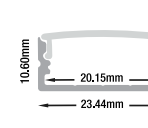
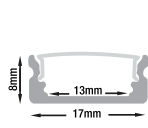
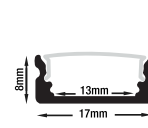
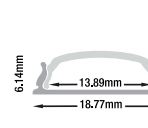
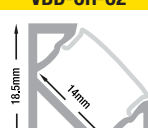
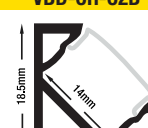
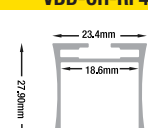

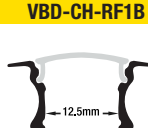
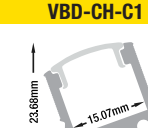

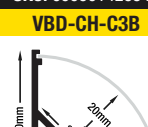
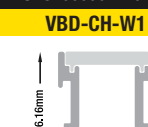
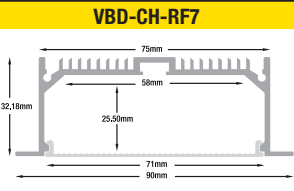
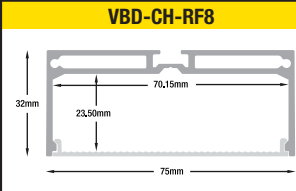
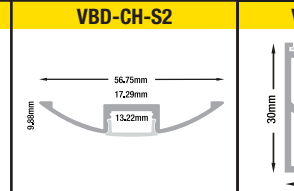
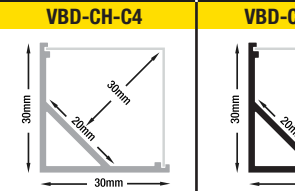
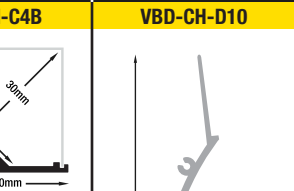
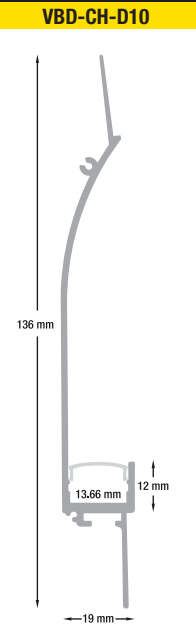
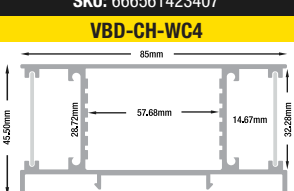
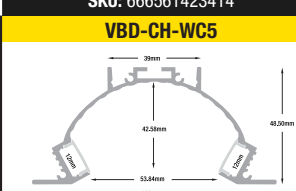
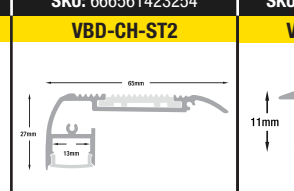
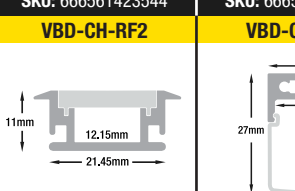
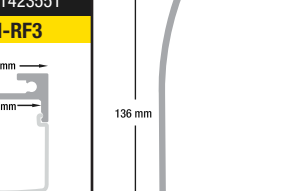
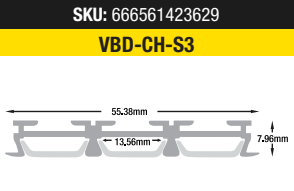
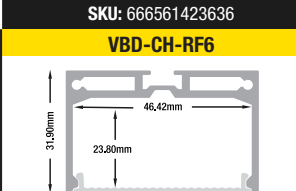
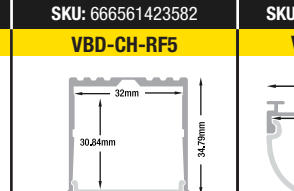
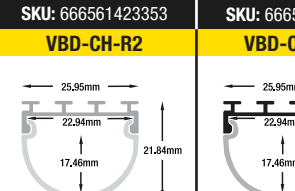
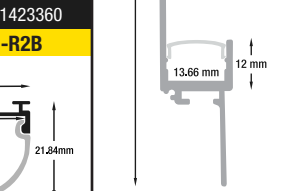
Note: Joiners will be 1-inch size unless customers require a specific size.

x - - -

Example: 2 (QTY) x 24" (PFL) - 52" (SL) - 1" (JL) - 52" (SL)

RECOMMENDED LED ALUMINUM CHANNELS

(Sold Separately)

VBD-CH-S4  15.5mm 12mm 17.5mm	VBD-CH-S4B  15.5mm 12mm 17.5mm	VBD-CH-S6  10.6mm 20.15mm 23.44mm			
SKU: 666561423278	SKU: 666561423285	SKU: 666561423315			
VBD-CH-S5  6mm 13mm 17mm	VBD-CH-S5B  6mm 13mm 17mm	VBD-CH-B1  6.14mm 13.89mm 18.77mm			
SKU: 666561423292	SKU: 666561423308	SKU: 666561423360			
VBD-CH-C2  18.5mm 14mm 18.5mm	VBD-CH-C2B  18.5mm 14mm 18.5mm	VBD-CH-RF4  23.4mm 18.6mm 18.6mm			
SKU: 666561423306	SKU: 666561423513	SKU: 666561423377			
VBD-CH-RF1  12.5mm 15mm 17mm	VBD-CH-RF1B  12.5mm 15mm 17mm	VBD-CH-C1  25.68mm 15.07mm 21.19mm			
SKU: 666561423339	SKU: 666561423346	SKU: 666561423490			
VBD-CH-C3  30mm 20mm 20mm 30mm	VBD-CH-C3B  30mm 20mm 20mm 30mm	VBD-CH-W1  26.16mm 12mm 21.43mm			
SKU: 666561423520	SKU: 666561423537	SKU: 666561423445			
VBD-CH-RF7  32.16mm 75mm 58mm 25.50mm 71mm 90mm	VBD-CH-RF8  32mm 70.15mm 23.50mm 75mm	VBD-CH-S2  9.68mm 56.75mm 17.29mm 13.22mm	VBD-CH-C4  30mm 20mm 20mm 30mm	VBD-CH-C4B  30mm 20mm 20mm 30mm	VBD-CH-D10  136mm 13.66mm 12mm 19mm
SKU: 666561423407	SKU: 666561423414	SKU: 666561423254	SKU: 666561423544	SKU: 666561423551	
VBD-CH-WC4  45.50mm 85mm 26.72mm 57.68mm 14.67mm 32.28mm 37.85mm	VBD-CH-WC5  39mm 43.03mm 53.84mm 102mm	VBD-CH-ST2  21mm 95mm 13mm	VBD-CH-RF2  11mm 12.15mm 21.45mm	VBD-CH-RF3  27mm 20mm 17mm	
SKU: 666561423629	SKU: 666561423636	SKU: 666561423582	SKU: 666561423353	SKU: 666561423360	
VBD-CH-S3  55.38mm 13.56mm 7.96mm	VBD-CH-RF6  31.90mm 46.42mm 23.80mm 50.20mm	VBD-CH-RF5  32mm 30.84mm 35.65mm 34.79mm	VBD-CH-R2  25.95mm 22.94mm 17.46mm 21.84mm	VBD-CH-R2B  25.95mm 22.94mm 17.46mm 21.84mm	
SKU: 666561423261	SKU: 666561423391	SKU: 666561423384	SKU: 666561423742	SKU: 666561428280	SKU: 666561420023

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VBD-CH-WC1 SKU: 666561423599	VBD-CH-WC2 SKU: 666561423605	VBD-CH-WC3 SKU: 666561423612	VBD-CH-S1 SKU: 666561423247	VBD-CH-R3 SKU: 666561423759	VBD-CH-RF10 SKU: 666561423438
VBD-CH-S55 SKU: 666561429966	VBD-CH-S55B SKU: 666561429973	VBD-CH-C5 SKU: 666561423568	VBD-CH-R1 SKU: 666561423735	VBD-CH-D1 SKU: 666561423643	VBD-CH-D5 SKU: 666561423681
VBD-CH-RS5 SKU: 666561428631	VBD-CH-RS5B SKU: 666561428648	VBD-CH-D7 SKU: 666561423704	VBD-CH-D8 SKU: 666561423711	VBD-CH-D9 SKU: 666561423728	
VBD-CH-M1 SKU: 666561423773	VBD-CH-M1B SKU: 666561431013	VBD-CH-E1 SKU: 666561423483	Note: To avoid a dark spot on the sides of these channels (RF10, RF6, RF8, R3, S1, R3) we recommend installing more than one Run LED Strip. For more details please contact us at: sales@veroboard.com		

RECOMMENDED LED POWER SUPPLIES (Sold Separately)

For more options and varieties, please visit our website: www.veroboard.com

Constant Voltage Dimmable LED Drivers (5 in 1), Triac/Phase, 0-10V, 1-10V, Potentiometer, 10V PWM 5 in 1 Dimming



Model No.	Input Voltage	Output Voltage	Wattage	IP Rating	Class	Max. Strip Length	SKU#
VBD-024-030C2DM5i1	100-277V	24V	30W	IP67	Class 2	4.8ft	666561426033
VBD-024-060C2DM5i1	100-277V	24V	60W	IP67	Class 2	9.6ft	666561426040
VBD-024-080C2DM5i1	100-277V	24V	80W	IP67	Class 2	12.8ft	666561426088
VBD-024-096C2DM5i1	100-277V	24V	96W	IP67	Class 2	15.3ft	666561426057
VBD-024-192C2DM5i1	100-277V	24V	192W (2x96W)	IP67	Class 2	30.7ft	666561426064
VBD-024-288C2DM5i1	100-277V	24V	288W (3x96W)	IP67	Class 2	46ft	666561426071

Constant Voltage Triac LED Drivers forward Phase, Magnetic Low Voltage & Triac Dimmers



Model No.	Input Voltage	Output Voltage	Wattage	IP Rating	Class	Max. Strip Length	SKU#
VBD-024-024DM	100-130V	24V	24W	IP20	Class 2	3.8ft	666561415839
VBD-024-048DM	100-130V	24V	48W	IP20	Class 2	7.6ft	666561415822
VBD-024-060DM	100-130V	24V	60W	IP20	Class 2	9.6ft	666561415815
VBD-024-096DM	100-130V	24V	96W	IP67	Class 2	15.3ft	666561415808
VBD-024-150DM	100-130V	24V	150W	IP67	-	24ft	666561415792
VBD-024-200DM	100-130V	24V	200W	IP67	-	32ft	666561415785
VBD-024-300VTHWJ	100-277V	24V	300W	IP65	-	48ft	666561419806

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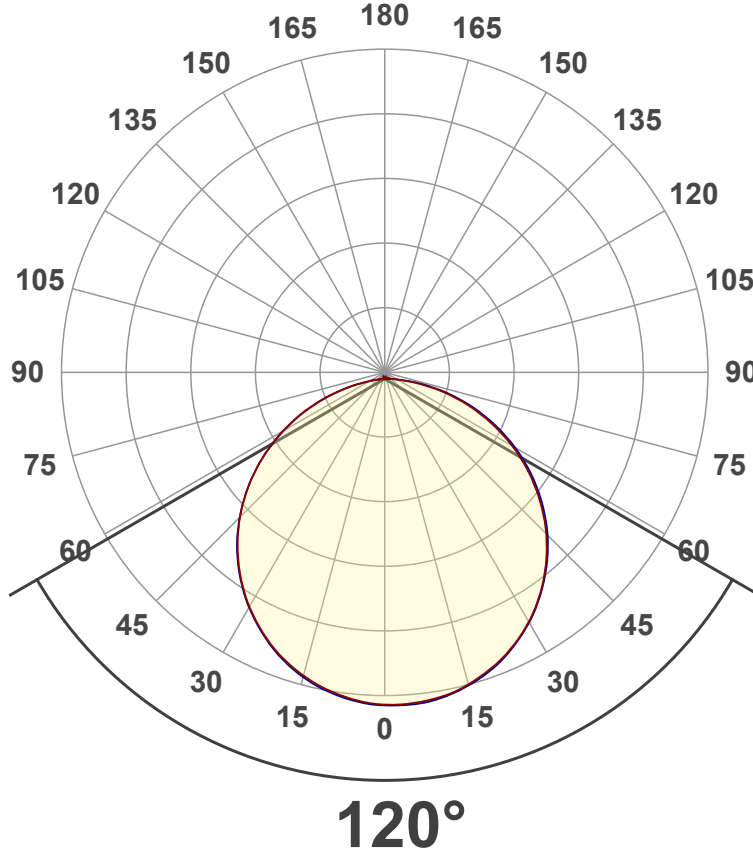
Light Measurement Report

Print date: 2023-04-26

Measurement date and time: 2023-04-26 3:21:24 PM – Measurement no. VFR-230426-0176-MS

Luminous Intensity diagram

Unit: 0-100% of peak intensity



Main Values

Lumen Up% / Down% 0.62% / 99.38%
Peak Intensity 137 cd
Beam Angle (50%) 120°
Beam Angle (90%) 114.4°
Beam Angle (10%) 114.1°

Cut-off Angle

Average 2,5% 173.8°

Field Angle

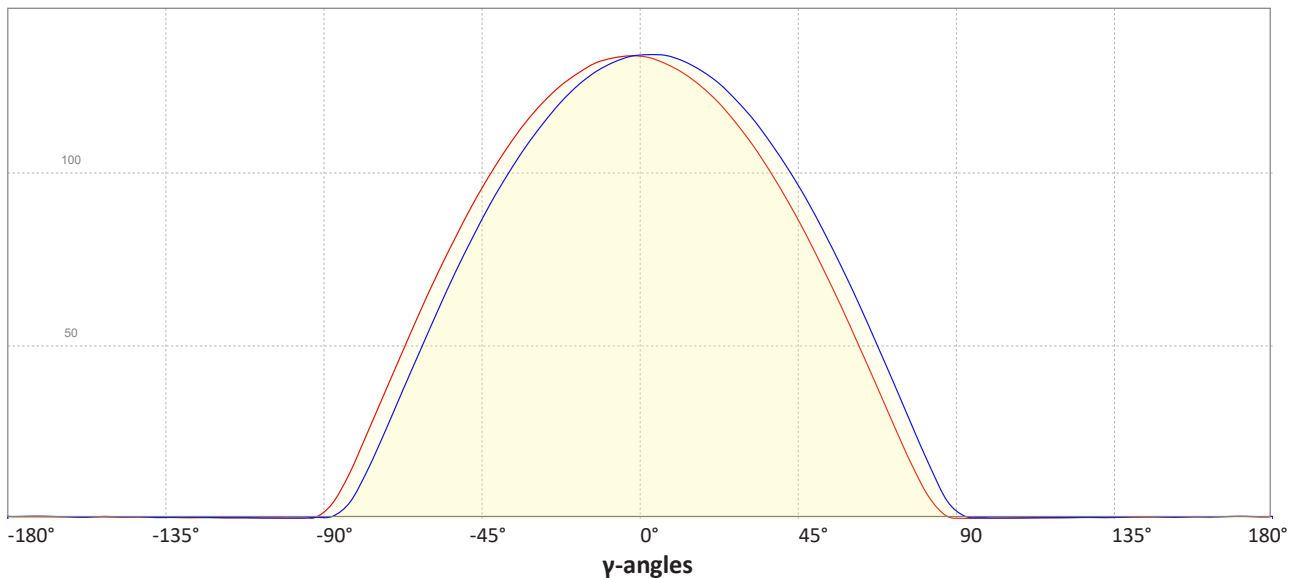
Average 10% 161.2°

Intensity Ratio

In 120° cone 78.2%
In 90° cone 52.9%

C000-C180
C090-C270

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



Light Measurement Report

Print date: 2023-04-26

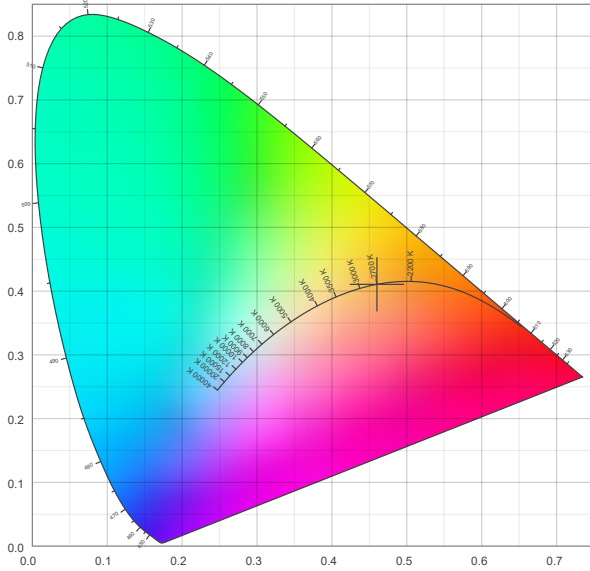
Measurement date and time: 2023-04-26 3:21:24 PM – Measurement no. VFR-230426-0176-MS

Color details

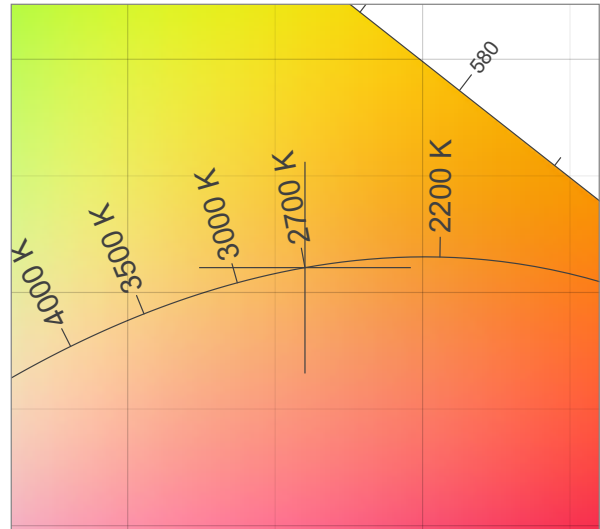
Correlated Color Temperature, Target CCT = 2700 K
 Correlated Color Temperature, Measured CCT = 2696 K
 Color Rendering Index CRI 95.3
 Color Rendering Index, R9 (red component) R9 = 94.5
 Color Rendering TM30-18 R_f 93.4 – R_g 105.9
 Color Quality Scale CQS = 92.3

MacAdam Steps SDCM = 7.2
 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 = -0.0067
 Color coordinate CIEs 1976 (CIELUV) (u';v') = (0.263;0.263)

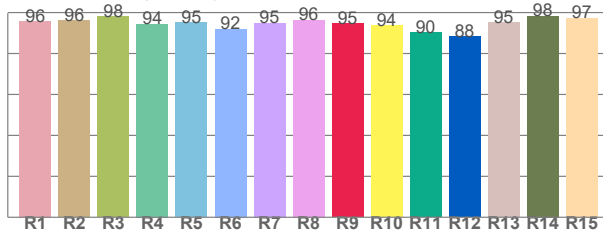
CIE 1931



CIE 1931 – zoomed on Planckian locus



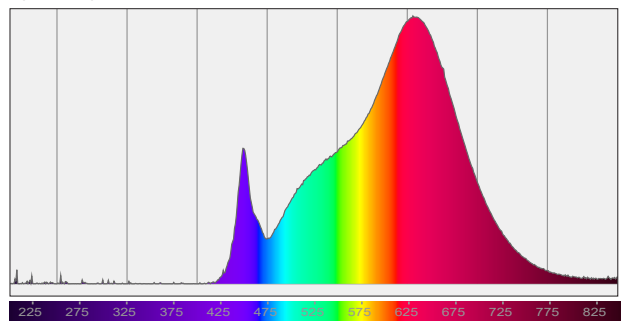
Color Rendering Index per reference color (CIE 1995)



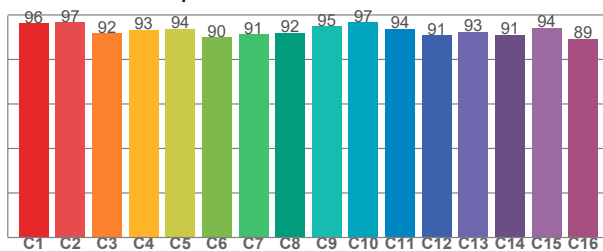
CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
95.8	96.2	98.0	94.4	95.1	92.0	95.0	96.3	94.5	93.6	90.1	88.3	95.1	98.3	97.4

Spectral power distribution (SPD) / W/nm – 0-100%



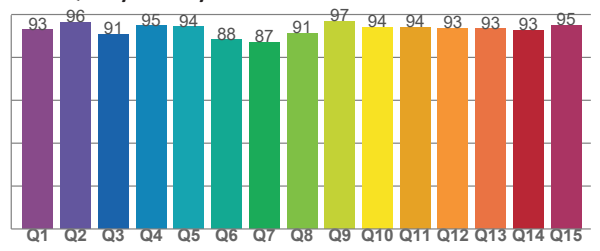
TM30-18 R_f-values per hue bin



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
96.2	96.6	91.7	93.3	93.8	90.0	91.2	91.9	94.9	96.7	93.8	90.9	92.5	91.0	94.3	89.4

Color Quality Scale by reference color



CQS Q values

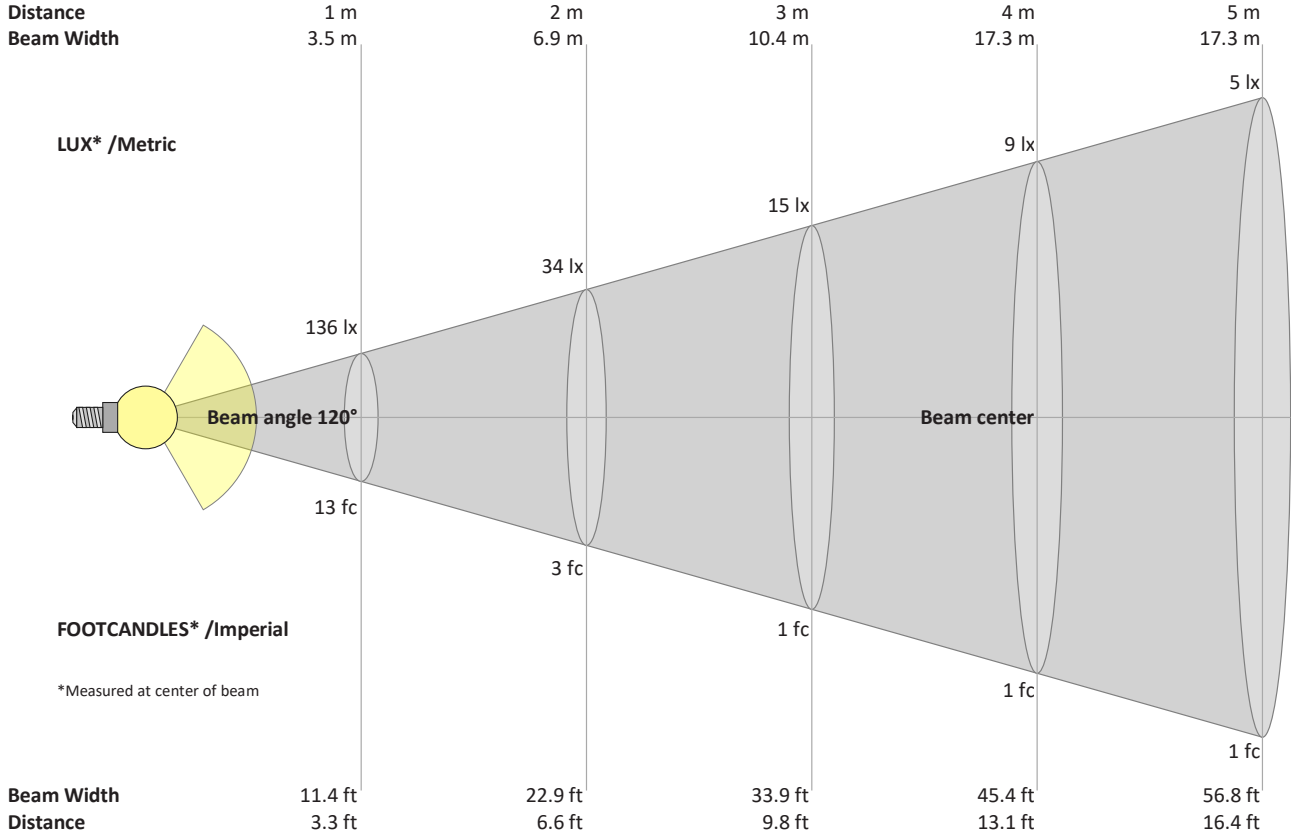
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
92.8	96.5	90.7	94.7	94.3	88.2	87.0	91.4	96.8	94.0	94.0	93.5	93.4	92.6	95.0

Light Measurement Report

Print date: 2023-04-26

Measurement date and time: 2023-04-26 3:21:24 PM – Measurement no. VFR-230426-0176-MS

Beam Details



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
136	34	15	9	5	4	3	2	2	1	1	1	1	1	1	1	0	0	0	0	lux
12.7	3.2	1.4	0.8	0.5	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	fc

Intensities in 0° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	y
136	136	135	133	130	125	120	114	106	98	88	78	67	56	44	32	20	9	3	0	cd
100%	100%	99%	97%	95%	92%	88%	83%	78%	71%	65%	57%	49%	41%	32%	23%	15%	7%	2%	0%	of 0°val

Intensities in 90° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	y
136	137	136	134	130	126	120	114	106	98	89	79	68	57	45	33	21	10	3	1	cd
100%	100%	99%	98%	95%	92%	88%	83%	78%	72%	65%	58%	50%	42%	33%	24%	16%	7%	2%	0%	of 0°val

Intensities in 180° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	y
136	135	133	129	125	119	113	106	97	88	78	67	56	45	33	21	11	3	0	0	cd
100%	99%	97%	95%	92%	88%	83%	77%	71%	64%	57%	49%	41%	33%	24%	16%	8%	2%	0%	0%	of 0°val

Intensities in 270° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	y
136	136	133	130	126	120	113	106	98	88	78	67	56	44	32	20	10	3	1	0	cd
100%	99%	98%	95%	92%	88%	83%	78%	71%	65%	57%	49%	41%	32%	23%	15%	7%	2%	0%	0%	of 0°val