

# VEROBOARD®

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

**Job Name:** \_\_\_\_\_

**Distributor:** \_\_\_\_\_

**Type:** \_\_\_\_\_



## DESCRIPTION

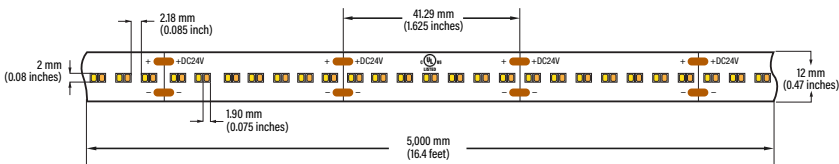
Flexible 12 mm wide linear Dim to Warm LED strip. Available in 5 meters (16.4 feet) rolls that can be cut every 14 LEDs (41.5 mm or 1.625 in). The LED Strip lights are manufactured with high-quality materials and designed for professional lighting. Every strip light begins with a heavy-duty dual-core 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.

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



666561425401

## DIMENSIONS



## SPECIFICATIONS

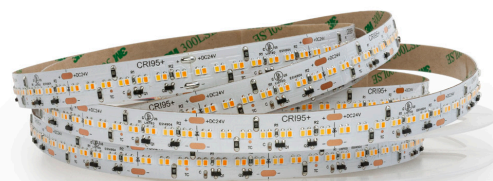
<b>Model:</b>	VBDFS-2216-CW&WW-336-24-NS
<b>Color Temperature:</b>	1800K-4200K (Dim to Warm)
<b>LED Type:</b>	2216 SMD
<b>LED Qty:</b>	336 LEDs per meter
<b>LM/LED:</b>	8-10 Lm per LED
<b>Input Voltage (VF):</b>	24V DC
<b>Power:</b>	15W per meter (5W/ft)
<b>Brightness:</b>	2688-3360Lm/m (815-1018Lm/ft)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



## ORDERING GUIDE

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

MODEL	SERIES	COLOUR	LEDS/METER	VOLTAGE	LENGTH
VBDFS	2216	XXXX 1800K-4200K	336	24V	XXXX Custom Length Full Roll (5 Meter)



For more information about our products and services, please visit our website: [www.veroboard.com](http://www.veroboard.com)



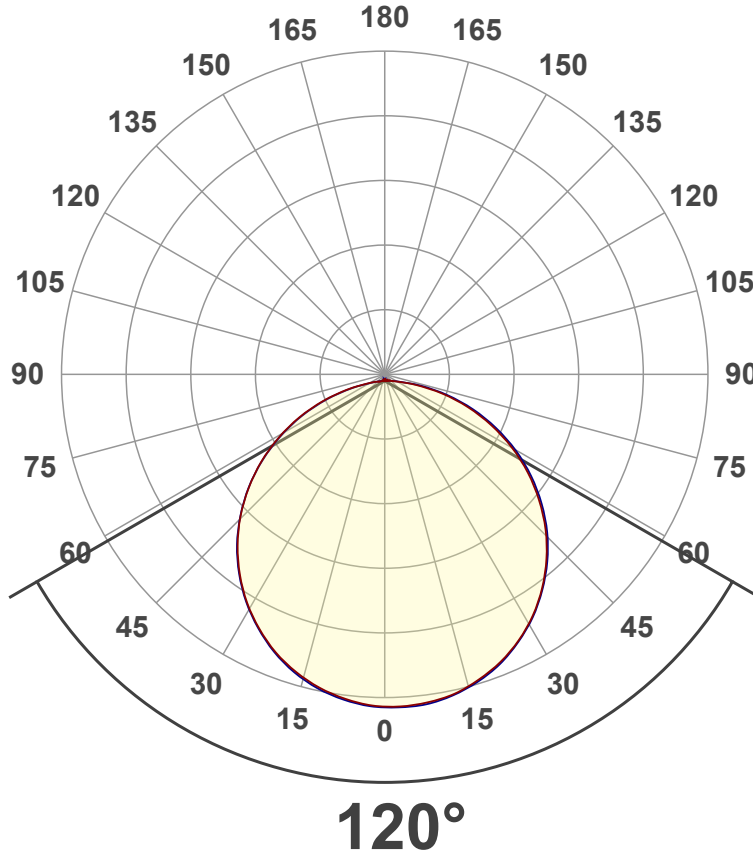
# Light Measurement Report

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

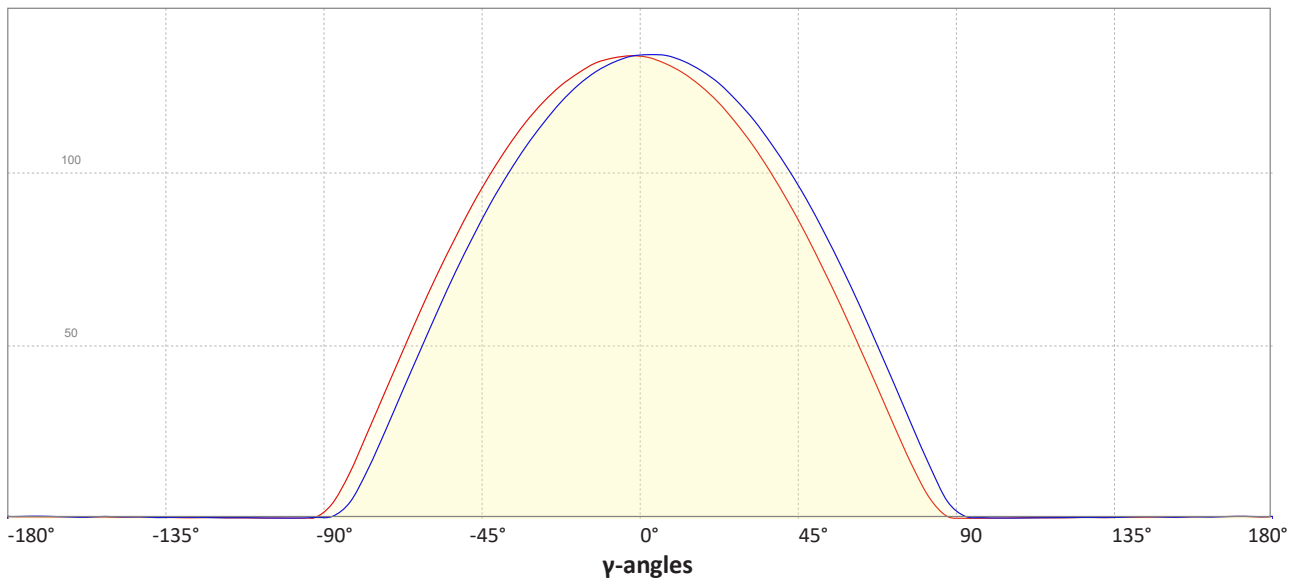
Average 10% 161.2°

## Intensity Ratio

In 120° cone	78.2%
In 90° cone	52.9%

**C000-C180**  
**C090-C270**

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



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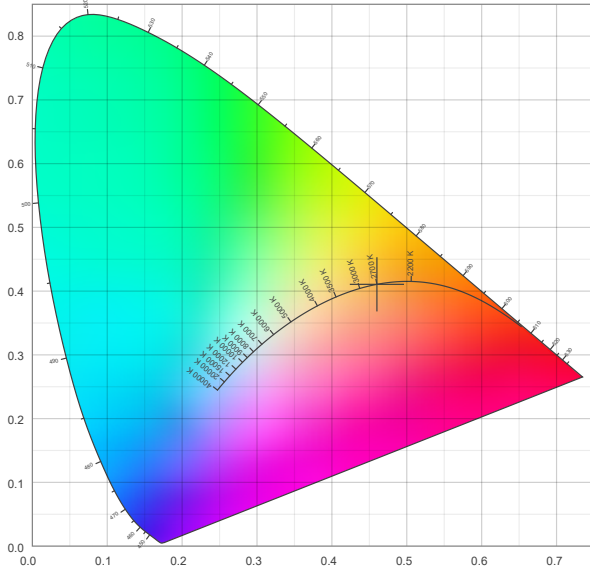
Measurement date and time: 2023-04-26 3:21:24 PM – Measurement no. VFR-230426-0176-MS

## Color details

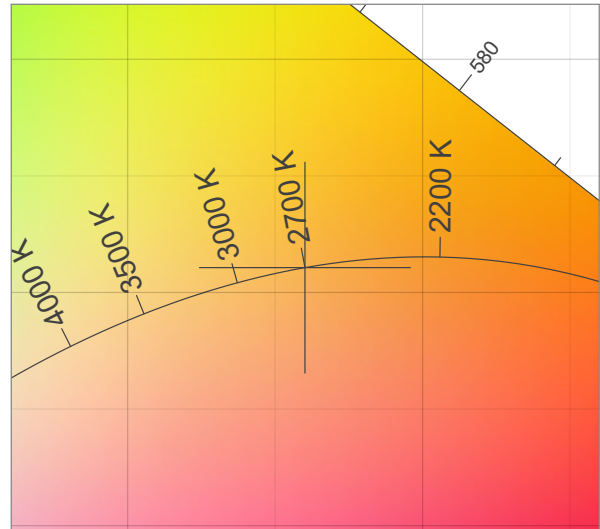
Correlated Color Temperature, Target CCT = 2700 K  
 Correlated Color Temperature, Measured CCT = 2696 K  
 Color Rendering Index CRI 95.3  
 Color Rendering Index, R9 (red component) R9 = 94.5  
 Color Rendering TM30-18 R<sub>f</sub> 93.4 – R<sub>g</sub> 105.9  
 Color Quality Scale CQS = 92.3

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)

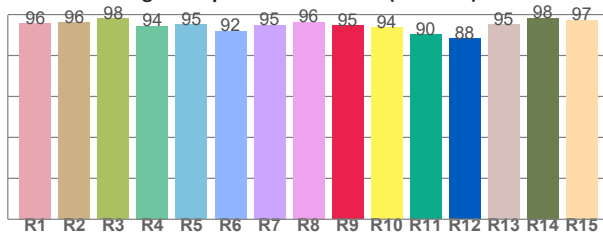
CIE 1931



CIE 1931 – zoomed on Planckian locus



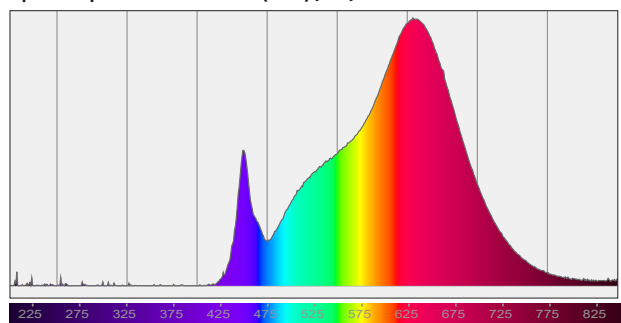
Color Rendering Index per reference color (CIE 1995)



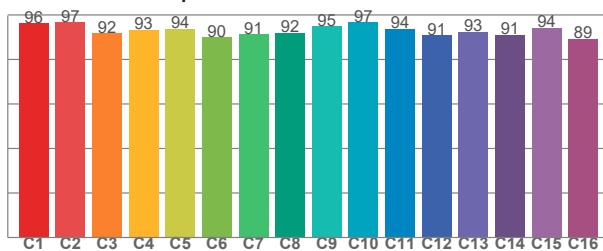
CRI R values, only R1-R8 are used to calculate final CRI value

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%



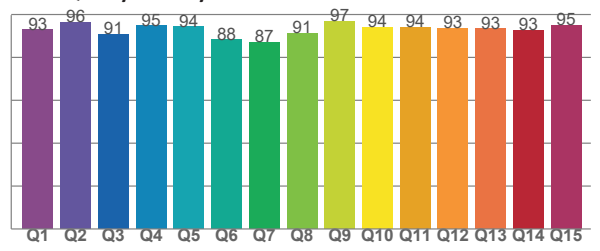
TM30-18 Rf-values per hue bin



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
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

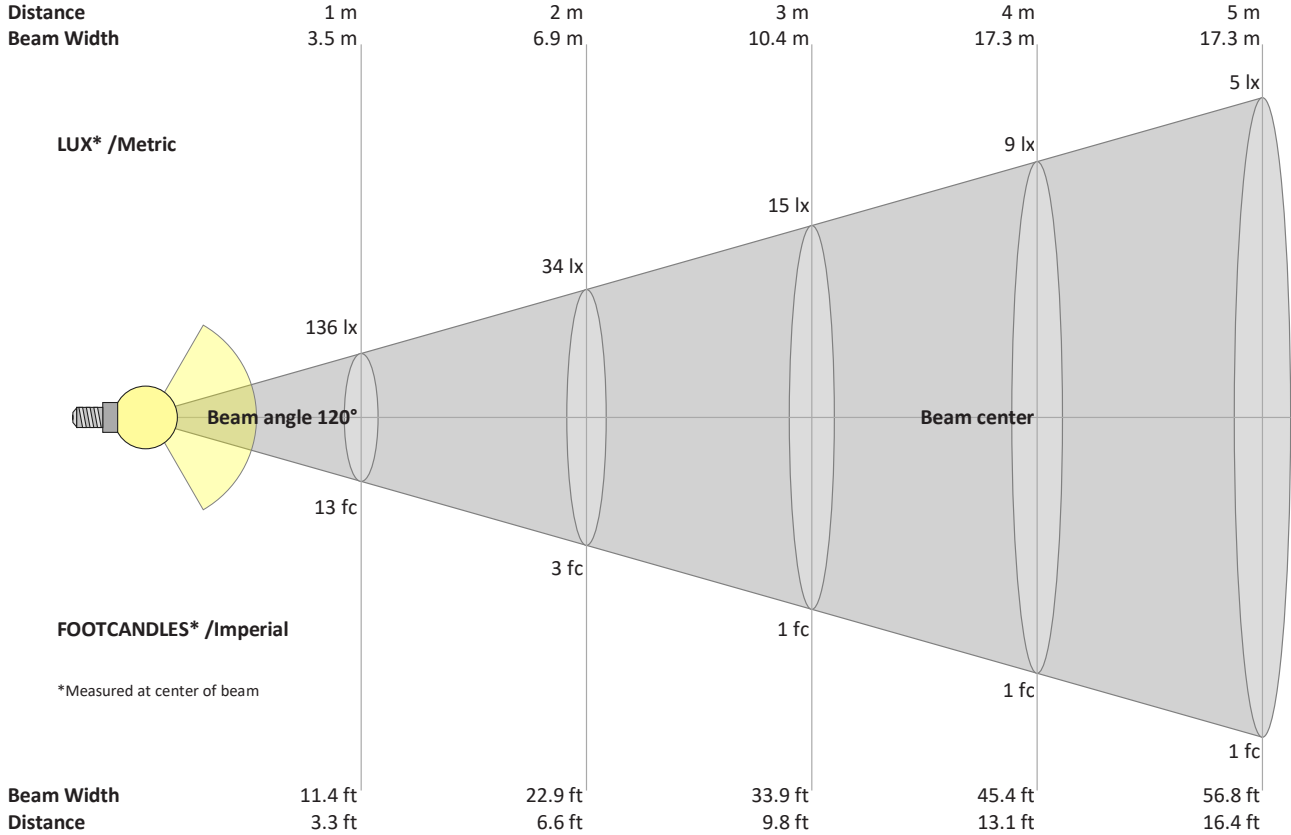
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
92.8	96.5	90.7	94.7	94.3	88.2	87.0	91.4	96.8	94.0	94.0	93.5	93.4	92.6	95.0

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## 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

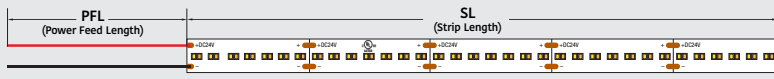
### Intensities in 270° c-plane

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

## 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

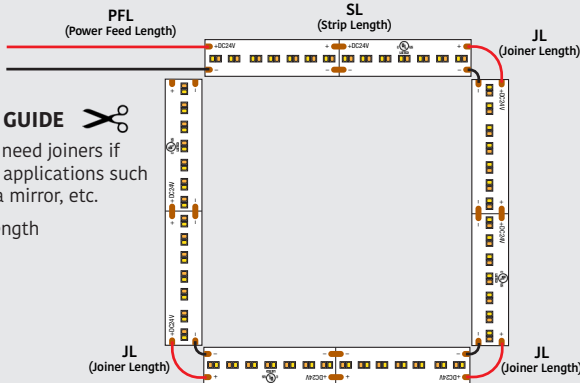


Example: 2 (QTY) x 36" (PFL) - 84" (SL)  x  -

## CUSTOM ORDERING GUIDE ✂

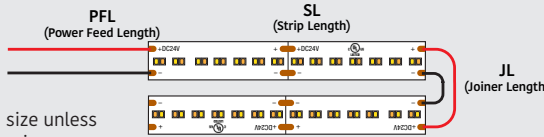
**Joiner:** LED strip lights need joiners if they are used for curve applications such as corner side, behind a mirror, etc.

- **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)

<b>VBD-CH-S4</b>  15.5mm 12mm 17.5mm	<b>VBD-CH-S4B</b>  15.5mm 12mm 17.5mm	<b>VBD-CH-S6</b>  10.6mm 20.15mm 23.44mm
SKU: 666561423278	SKU: 666561423285	SKU: 666561423315
<b>VBD-CH-S5</b>  8mm 13mm 17mm	<b>VBD-CH-S5B</b>  8mm 13mm 17mm	<b>VBD-CH-B1</b>  6.14mm 13.89mm 18.77mm
SKU: 666561423292	SKU: 666561423308	SKU: 666561423360
<b>VBD-CH-C2</b>  18.5mm 14mm 18.5mm	<b>VBD-CH-C2B</b>  18.5mm 14mm 18.5mm	<b>VBD-CH-RF4</b>  23.4mm 18.6mm 18.6mm
SKU: 666561423306	SKU: 666561423313	SKU: 666561423377
<b>VBD-CH-RF1</b>  12.5mm 15mm 17mm	<b>VBD-CH-RF1B</b>  12.5mm 15mm 17mm	<b>VBD-CH-C1</b>  25.68mm 15.07mm 21.19mm
SKU: 666561423339	SKU: 666561423346	SKU: 666561423490
<b>VBD-CH-C3</b>  30mm 20mm 20mm 30mm	<b>VBD-CH-C3B</b>  30mm 20mm 20mm 30mm	<b>VBD-CH-W1</b>  26.16mm 12mm 21.43mm
SKU: 666561423520	SKU: 666561423537	SKU: 666561423445
<b>VBD-CH-RF7</b>  32.16mm 75mm 58mm 25.50mm 71mm 90mm	<b>VBD-CH-RF8</b>  32mm 70.15mm 23.50mm 75mm	<b>VBD-CH-S2</b>  9.88mm 56.75mm 17.29mm 13.22mm
SKU: 666561423407	SKU: 666561423414	SKU: 666561423254
<b>VBD-CH-WC4</b>  45.50mm 85mm 26.72mm 57.68mm 14.67mm 32.28mm 37.85mm	<b>VBD-CH-WC5</b>  39mm 43.03mm 53.84mm 182mm	<b>VBD-CH-ST2</b>  21mm 95mm 13mm
SKU: 666561423629	SKU: 666561423636	SKU: 666561423582
<b>VBD-CH-S3</b>  55.38mm 13.56mm 7.96mm	<b>VBD-CH-RF6</b>  31.90mm 46.42mm 23.80mm 50.20mm	<b>VBD-CH-RF5</b>  32mm 30.84mm 35.65mm 34.79mm
SKU: 666561423261	SKU: 666561423391	SKU: 666561423384
<b>VBD-CH-R2</b>  25.95mm 22.94mm 17.46mm 21.84mm	<b>VBD-CH-R2B</b>  25.95mm 22.94mm 17.46mm 21.84mm	<b>VBD-CH-D10</b>  136mm 13.66mm 12mm 19mm
SKU: 666561423742	SKU: 666561428280	SKU: 666561420023

For more information about our products and services, please visit our website: [www.veroboard.com](http://www.veroboard.com)

<b>VBD-CH-WC1</b>  SKU: 666561423599	<b>VBD-CH-WC2</b>  SKU: 666561423605	<b>VBD-CH-WC3</b>  SKU: 666561423612	<b>VBD-CH-S1</b>  SKU: 666561423247	<b>VBD-CH-R3</b>  SKU: 666561423759	<b>VBD-CH-RF10</b>  SKU: 666561423438	
<b>VBD-CH-S55</b>  SKU: 666561429966	<b>VBD-CH-S55B</b>  SKU: 666561429973	<b>VBD-CH-C5</b>  SKU: 666561423568		<b>VBD-CH-R1</b>  SKU: 666561423735	<b>VBD-CH-D1</b>  SKU: 666561423643	<b>VBD-CH-D5</b>  SKU: 666561423681
<b>VBD-CH-RS5</b>  SKU: 666561428631	<b>VBD-CH-RS5B</b>  SKU: 666561428648	<b>VBD-CH-D7</b>  SKU: 666561423704		<b>VBD-CH-D8</b>  SKU: 666561423711	<b>VBD-CH-D9</b>  SKU: 666561423728	
<b>VBD-CH-M1</b>  SKU: 666561423773	<b>VBD-CH-M1B</b>  SKU: 666561431013	<b>VBD-CH-E1</b>  SKU: 666561423483	<b>Note:</b> 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: <a href="mailto:sales@veroboard.com">sales@veroboard.com</a>			

## RECOMMENDED LED POWER SUPPLIES (Sold Separately)

For more options and varieties, please visit our website: [www.veroboard.com](http://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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