

# VEROBOARD®

**LED Type:** VBDFS-315-XXXX-120-12-NS (Side Emitting)  
**Colour:** 3000K • 5000K • Green

**Contact Name:** \_\_\_\_\_

**Company:** \_\_\_\_\_

**Phone:** \_\_\_\_\_

**Email:** \_\_\_\_\_

|           | Wattage | Brightness                                   |
|-----------|---------|--|
| Per Foot  | 3W/ft   | 329-402Lm/ft (3K,5K) 731-878Lm/ft (Green)    |
| Per Meter | 9W/m    | 1080-1320Lm-m (3K,5K) 2400-2880Lm/ft (Green) |



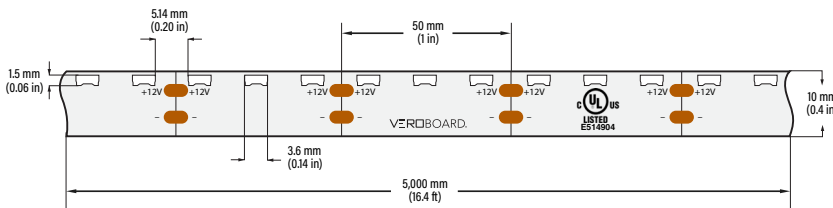
## DESCRIPTION

Flexible 10mm Side Emitting wide linear LED strip. Available in 5 meter (196.8 inches) rolls that can be cut every 3 LEDs (2.5mm or 1in). 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. They can be cut to any size (marked interval points) and rejoined by soldering.



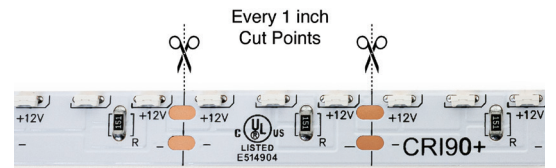
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## DIMENSIONS



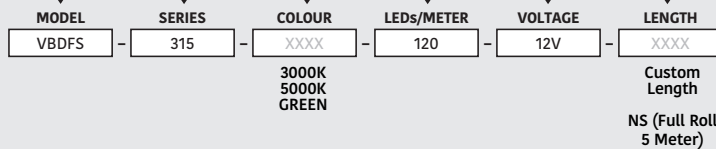
## SPECIFICATIONS

|                               |  |
|-------------------------------|--|
| <b>Model:</b>                 | VBDFS-315-xxxx-120-12-NS (Side Emitting)   |
| <b>Color Temperature:</b>     | 3000K • 5000K • Green  |
| <b>LED Type:</b>              | 315 SMD  |
| <b>LED Qty:</b>               | 120 LEDs per meter   |
| <b>LM/LED:</b>                | 9-11 Lm per LED  |
| <b>Input Voltage (VF):</b>    | 12V DC   |
| <b>Power:</b>                 | 9W per meter (3W/ft)   |
| <b>Brightness:</b>            | 1080-1320 Lm/meter ((329-402Lm/ft) for 3K,5K)<br>2400-2880 Lm/meter ((731-878Lm/ft) for Green) |
| <b>Lifespan:</b>              | >50,000 hours  |
| <b>PCB:</b>                   | 4oz PCB, Double-side, white colour 10mm 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  |
| <b>Cut Size:</b>              | Every 3 LED chips (1 inch)   |
| <b>Operating Temperature:</b> | -15°C to +40°C   |
| <b>Dimensions:</b>            | 5,000mm x 10mm (196.8in x 0.39in)  |
| <b>Certificates:</b>          | UL / RoHs  |
| <b>Roll Length:</b>           | 5 meter roll (16.4 feet)   |



### ORDERING GUIDE

Example part number: **VBDFS - 315 - XXXX - 120 - 12 - NS**



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

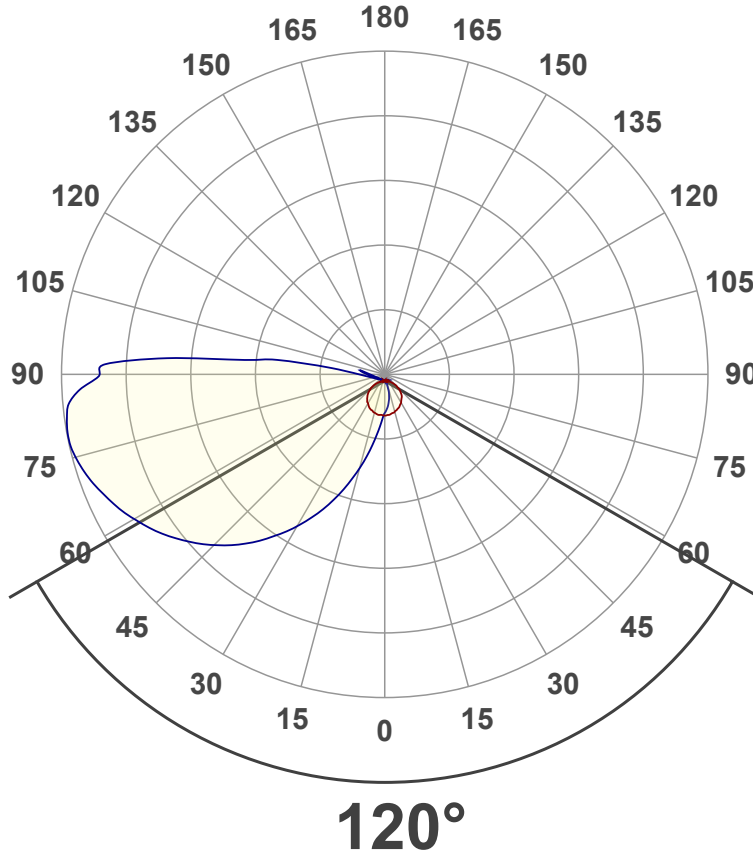
# Light Measurement Report

Print date: 2023-04-26

Measurement date and time: 2023-04-26 2:33:47 PM – Measurement no. VFR-230426-0173-MS

## Luminous Intensity diagram

Unit: 0-100% of peak intensity



## Main Values

|                   |                 |
|-------------------|-----------------|
| Lumen Up% / Down% | 14.48% / 85.52% |
| Peak Intensity    | 83.3 cd         |
| Beam Angle (50%)  | 120°            |
| Beam Angle (90%)  | 67.6°           |
| Beam Angle (10%)  | 119°            |

## Cut-off Angle

|              |        |
|--------------|--------|
| Average 2,5% | 157.9° |
|--------------|--------|

## Field Angle

|             |        |
|-------------|--------|
| Average 10% | 134.7° |
|-------------|--------|

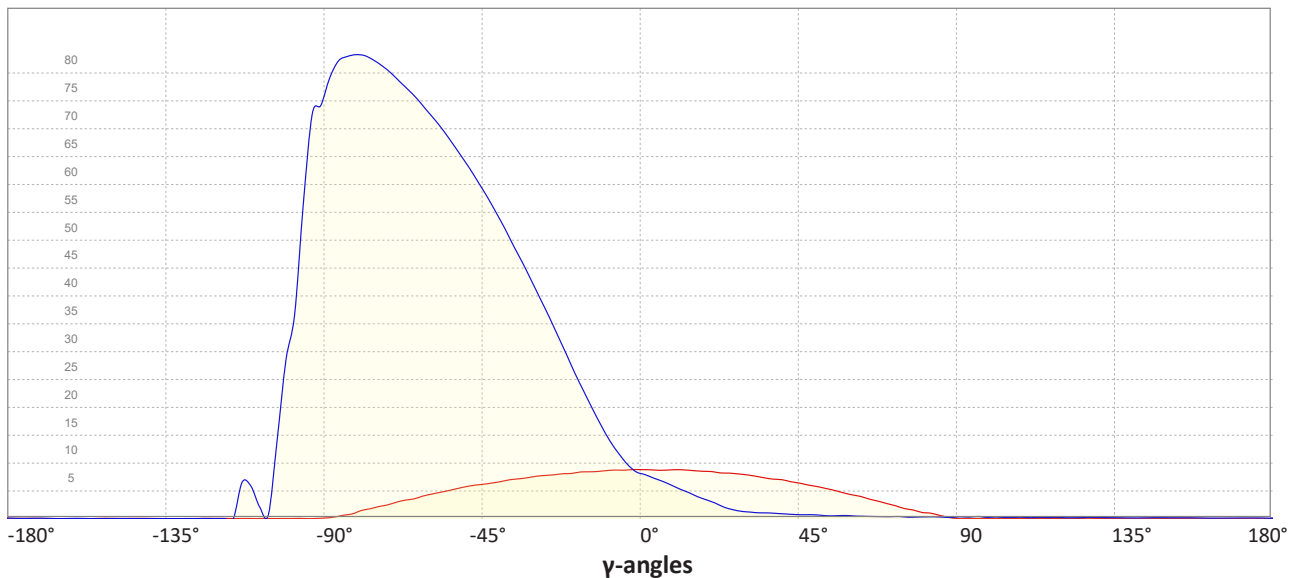
## Intensity Ratio

|              |       |
|--------------|-------|
| In 120° cone | 37.6% |
| In 90° cone  | 19.3% |

**C000-C180**

**C090-C270**

## Linear distribution diagram - Intensity (candela) vs $\gamma$ -angle



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## Color details

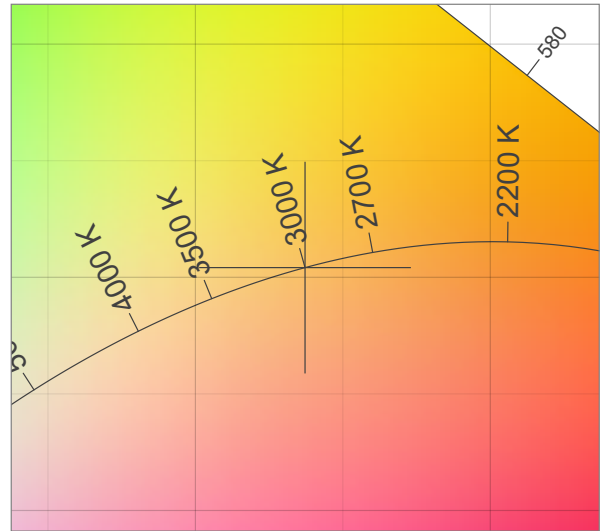
Correlated Color Temperature, Target CCT = 3000 K  
 Correlated Color Temperature, Measured CCT = 2751 K  
 Color Rendering Index CRI 92.0  
 Color Rendering Index, R9 (red component) R9 = 64.3  
 Color Rendering TM30-18 R<sub>f</sub> 91.2 – R<sub>g</sub> 101.0  
 Color Quality Scale CQS = 89.9

MacAdam Steps  
 Color coordinates CIE 1931 (x;y) = (0.437;0.404)  
 Color coordinate CIEs 1960 (u';v') = (0.251;0.348)  
 Color deviation from BBL Duv = 0.0011  
 Color coordinate CIEs 1976 (CIELUV) (u'';v'') = (0.251;0.251)

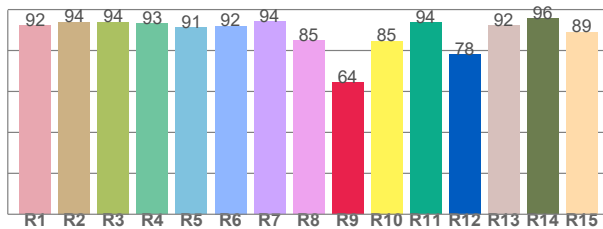
CIE 1931



CIE 1931 – zoomed on Planckian locus



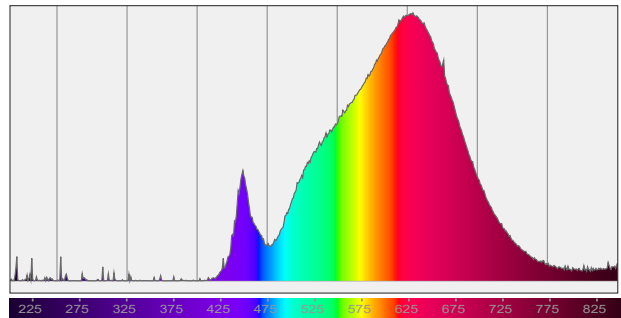
Color Rendering Index per reference color (CIE 1995)



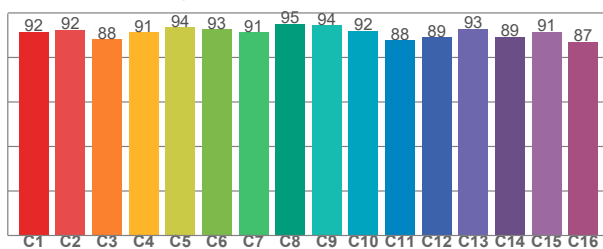
CRI R values, only R1-R8 are used to calculate final CRI value

| R1   | R2   | R3   | R4   | R5   | R6   | R7   | R8   | R9   | R10  | R11  | R12  | R13  | R14  | R15  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 92.3 | 93.9 | 94.0 | 93.2 | 91.2 | 92.0 | 94.1 | 85.0 | 64.3 | 84.7 | 93.6 | 78.2 | 92.4 | 95.7 | 89.0 |

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



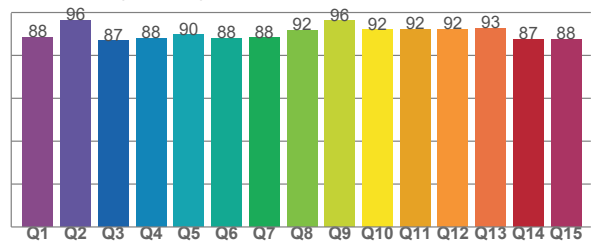
TM30-18 Rf-values per hue bin



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  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 91.6 | 92.4 | 88.1 | 91.4 | 93.6 | 92.7 | 91.4 | 95.0 | 94.4 | 91.9 | 87.6 | 89.1 | 92.9 | 89.4 | 91.4 | 87.2 |

Color Quality Scale by reference color



CQS Q values

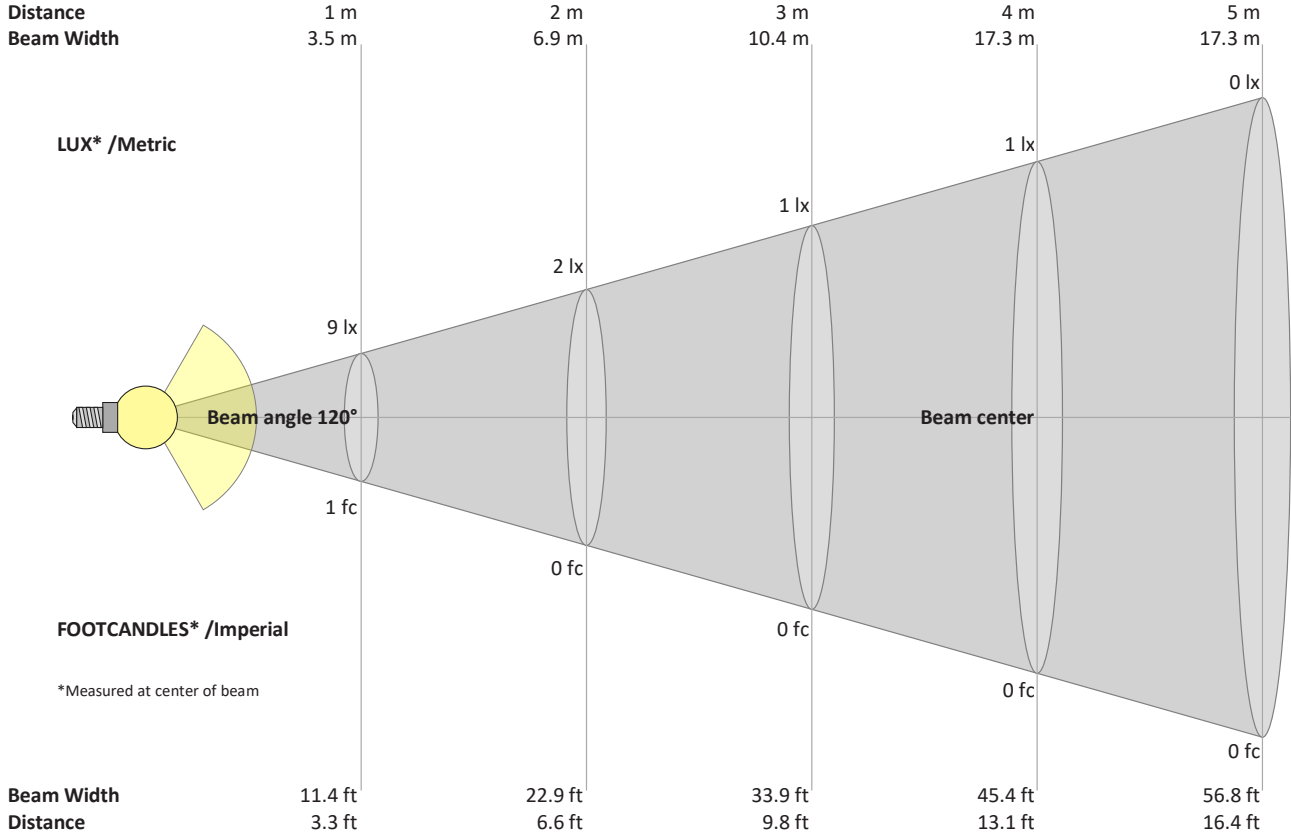
| Q1   | Q2   | Q3   | Q4   | Q5   | Q6   | Q7   | Q8   | Q9   | Q10  | Q11  | Q12  | Q13  | Q14  | Q15  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 88.4 | 96.4 | 86.9 | 88.0 | 89.7 | 87.9 | 88.1 | 91.9 | 96.1 | 92.0 | 92.2 | 92.3 | 92.5 | 87.4 | 87.6 |

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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 |     |
| 9   | 2   | 1   | 1    | 0    | 0    | 0  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0  | lux |
| 0.8 | 0.2 | 0.1 | 0    | 0    | 0    | 0  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 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        |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|
| 8.52 | 8.73 | 8.64 | 8.43 | 8.14 | 7.88 | 7.60 | 7.15 | 6.65 | 6.18 | 5.72 | 5.01 | 4.35 | 3.52 | 2.86 | 2.11 | 1.35 | 0.58 | 0.14 | 0.05 | cd       |
| 100% | 103% | 101% | 99%  | 96%  | 93%  | 89%  | 84%  | 78%  | 73%  | 67%  | 59%  | 51%  | 41%  | 34%  | 25%  | 16%  | 7%   | 2%   | 1%   | 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        |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|
| 8.52 | 7.04 | 5.72 | 4.37 | 3.14 | 1.89 | 1.28 | 1.07 | 0.93 | 0.76 | 0.70 | 0.55 | 0.55 | 0.44 | 0.40 | 0.35 | 0.34 | 0.33 | 0.31 | 0.38 | cd       |
| 100% | 83%  | 67%  | 51%  | 37%  | 22%  | 15%  | 13%  | 11%  | 9%   | 8%   | 6%   | 6%   | 5%   | 5%   | 4%   | 4%   | 4%   | 4%   | 4%   | 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        |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|
| 8.52 | 8.73 | 8.81 | 8.66 | 8.49 | 8.21 | 7.92 | 7.40 | 7.04 | 6.44 | 5.84 | 5.15 | 4.35 | 3.59 | 2.78 | 1.89 | 1.18 | 0.66 | 0.06 | 0.06 | cd       |
| 100% | 102% | 103% | 102% | 100% | 96%  | 93%  | 87%  | 83%  | 76%  | 69%  | 60%  | 51%  | 42%  | 33%  | 22%  | 14%  | 8%   | 1%   | 1%   | 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        |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|
| 8.5  | 10.8 | 15.5 | 21.5 | 28.1 | 35.0 | 41.5 | 47.7 | 53.8 | 59.3 | 64.2 | 68.8 | 72.7 | 76.3 | 79.4 | 81.9 | 83.2 | 82.4 | 75.9 | 62.1 | cd       |
| 100% | 127% | 182% | 253% | 330% | 411% | 487% | 560% | 631% | 696% | 754% | 807% | 854% | 896% | 932% | 962% | 977% | 968% | 891% | 729% | of 0°val |