

VEROBOARD®

2" Mini LED IC Rated Recessed Downlight



Veroboard 2-inch downlight is an IC-rated recessed light fixture. The fixture is available in both round and square trims and comes with housing. The IC rating housing prevents the engine from overheating thereby, increasing its life cycle. Moreover, they are designed to connect to a 12V class 2 power supply. This light fixture is air-tight and does not require any additional housing for installation. It is simple to install in a 2 in (50 mm) hole size with easy push spring clips. Furthermore, this fixture has a rendering index of 90+, making objects visible in high-quality colors when illuminated.

SPECIFICATIONS

| | |
|-------------------------------|---|
| Engine Model No: | LED-1-S6W-3KWH-12V |
| Voltage: | 12V AC/DC |
| Wattage: | 6W |
| Color Temperature: | 3000K (Warm White) |
| Beam Angle: | 40° |
| Dimmable: | Yes |
| Dimming: | 100 - 10% |
| Dimmers: | LED/CEL Dimmers |
| IC Rated: | Yes |
| Brightness: | 480 Lumens |
| Rendering Index: | CRI>90 |
| LED Type: | Integrated COB LED |
| Fixture Color: | White |
| Available Trim Shape: | Round and Square |
| Rated Life: | 50,000 Hours |
| Installation: | Recessed/Flush Mount |
| IP Rating: | IP20 (Damp Locations) |
| Installation Location: | Insulated Ceilings and Damp Locations |
| Outer Dimensions: | Ø57 mm (Ø2.25 in) x 73.3 mm (2.89 in) Depth |
| Cut Size: | 50mm (2 in) |
| Package Content: | IC-Rated Square Downlight |
| Package Dimensions: | 2.8 x 2.4 x 4 in (7.2 x 6.1 x 10.2 cm) |
| Package Weight: | 0.218 Kg |
| Certification: | FCC/ETL/RoHS |



Safety and Warning

The fixture must be wired in accordance with local electrical codes. And all the installation must be done by a certified electrician. Please be sure the main power switch is OFF before the installation or attempting any maintenance.

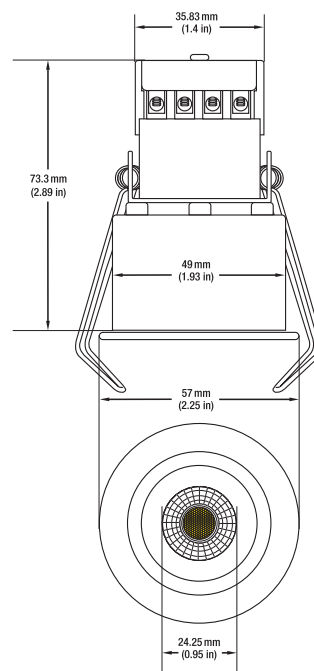
The downlights are intended for use with any 12V AC/DC 60W max class 2 power supply. Read all the instructions from the installation manual before installing. This product is for indoor applications only.

Name: _____

Quantity: _____

Phone: _____

Email: _____



SKU: 666561425036

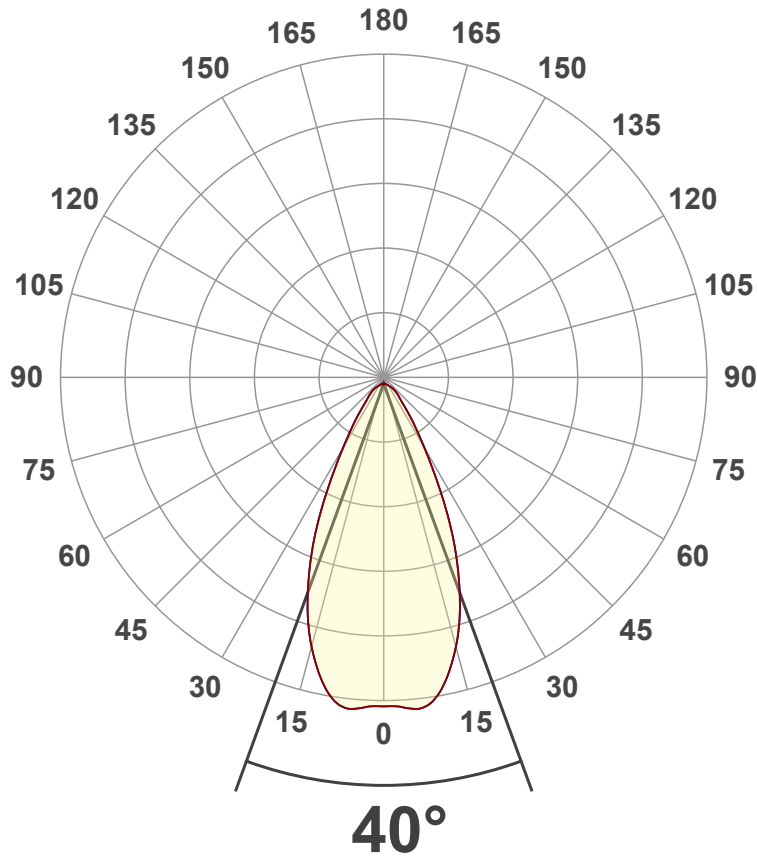
Light Measurement Report

Print date: 2023-01-11

Measurement date and time: 2023-01-11 3:47:12 PM – Measurement no. VFR-230111-0100-MS

Luminous Intensity diagram

Unit: 0-100% of peak intensity



Main Values

| | |
|----------------------|----------------|
| Output (total Lumen) | 480 lm |
| Lumen Up% / Down% | 0.02% / 99.98% |
| Peak Intensity | 577 cd |
| Beam Angle (50%) | 40° |
| Beam Angle (90%) | 50.1° |
| Beam Angle (10%) | 50.1° |

Cut-off Angle

| | |
|--------------|--------|
| Average 2,5% | 131.3° |
|--------------|--------|

Field Angle

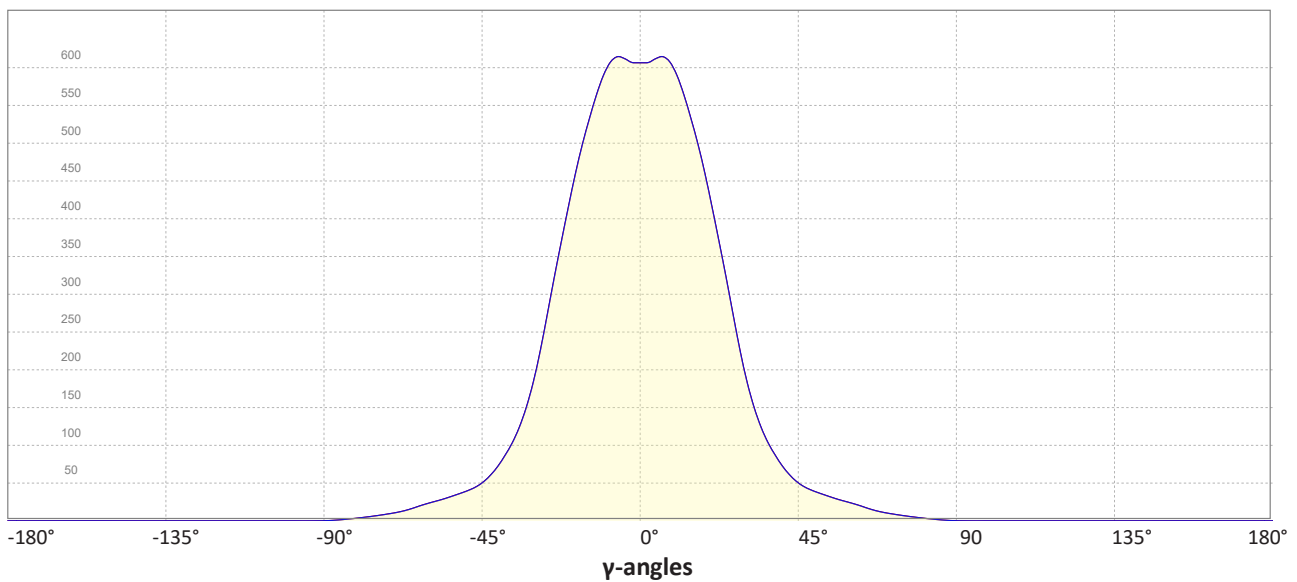
| | |
|-------------|-------|
| Average 10% | 84.8° |
|-------------|-------|

Intensity Ratio

| | |
|--------------|-------|
| In 120° cone | 94.9% |
| In 90° cone | 86.2% |

C000-C180
C090-C270

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



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Color details

Correlated Color Temperature, Target CCT = 3000 K
 Correlated Color Temperature, Measured CCT = 3034 K
 Color Rendering Index CRI 92.0
 Color Rendering Index, R9 (red component) R9 = 53.0
 Color Rendering TM30-18 R_f 91.8 – R_g 98.7
 Color Quality Scale CQS = 90.8

MacAdam Steps SDCM = 1.6
 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 = 0.0013
 Color coordinate CIEs 1976 (CIELUV) (u';v') = (0.251;0.251)

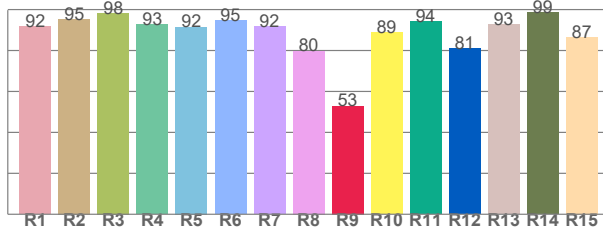
CIE 1931



CIE 1931 – zoomed on Planckian locus



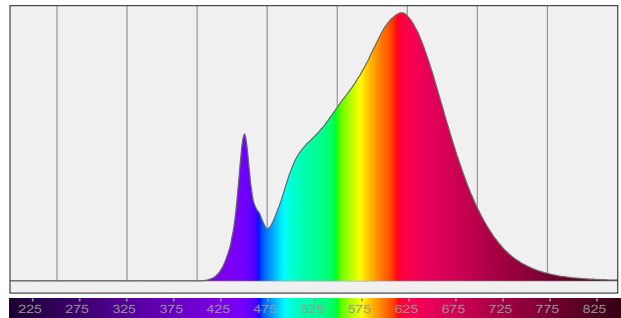
Color Rendering Index per reference color (CIE 1995)



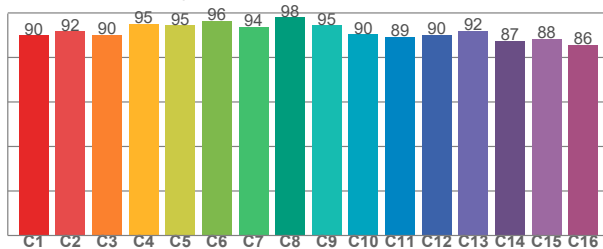
CRI R values, only R1-R8 are used to calculate final CRI value

| R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 | R10 | R11 | R12 | R13 | R14 | R15 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 91.7 | 95.3 | 98.3 | 92.8 | 91.6 | 94.7 | 91.8 | 79.8 | 53.0 | 88.9 | 94.2 | 81.0 | 92.6 | 98.5 | 86.5 |

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



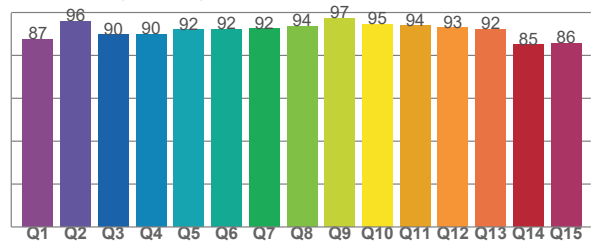
TM30-18 Rf-values per hue bin



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 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 89.9 | 91.7 | 90.1 | 95.2 | 94.5 | 96.5 | 93.8 | 98.0 | 94.5 | 90.5 | 89.2 | 90.1 | 91.9 | 87.4 | 88.4 | 85.7 |

Color Quality Scale by reference color



CQS Q values

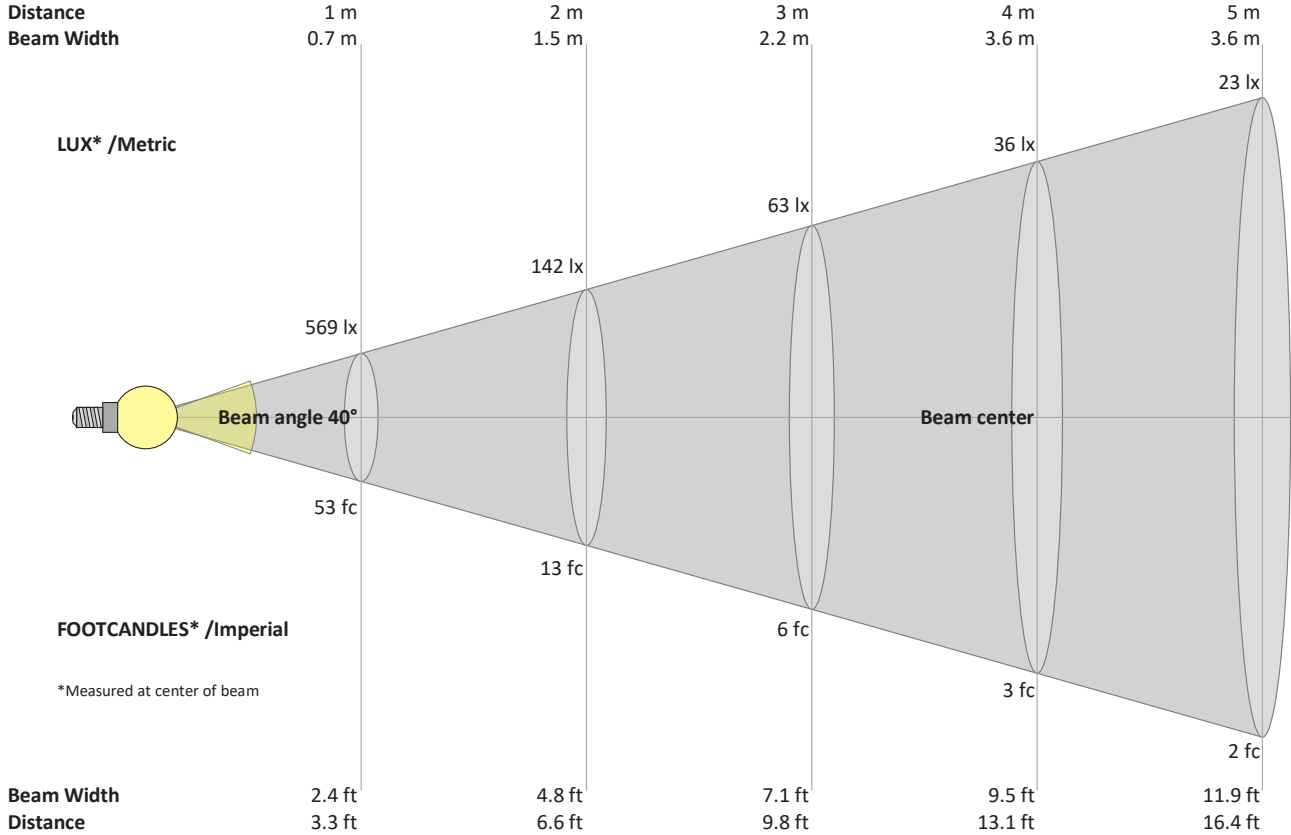
| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 87.4 | 95.9 | 89.6 | 89.7 | 91.9 | 92.1 | 92.4 | 93.6 | 97.4 | 94.6 | 93.8 | 92.9 | 92.1 | 84.9 | 85.8 |

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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 |
| 569 | 142 | 63 | 36 | 23 | 16 | 12 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 1 | lux |
| 52.9 | 13.2 | 5.9 | 3.3 | 2.1 | 1.5 | 1.1 | 0.8 | 0.7 | 0.5 | 0.4 | 0.4 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | fc |

Intensities in 0° c-plane

| 0° | 2° | 4° | 6° | 8° | 10° | 12° | 14° | 16° | 18° | 20° | 22° | 24° | 26° | 28° | 30° | 32° | 34° | 36° | 38° | y |
|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| 569 | 570 | 574 | 576 | 572 | 558 | 535 | 507 | 475 | 439 | 399 | 357 | 313 | 267 | 221 | 181 | 148 | 121 | 101 | 85 | cd |
| 100% | 100% | 101% | 101% | 100% | 98% | 94% | 89% | 83% | 77% | 70% | 63% | 55% | 47% | 39% | 32% | 26% | 21% | 18% | 15% | of 0°val |

Intensities in 90° c-plane

| 0° | 2° | 4° | 6° | 8° | 10° | 12° | 14° | 16° | 18° | 20° | 22° | 24° | 26° | 28° | 30° | 32° | 34° | 36° | 38° | y |
|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| 569 | 570 | 574 | 576 | 572 | 558 | 535 | 507 | 475 | 439 | 399 | 357 | 313 | 267 | 221 | 181 | 148 | 121 | 101 | 85 | cd |
| 100% | 100% | 101% | 101% | 100% | 98% | 94% | 89% | 83% | 77% | 70% | 63% | 55% | 47% | 39% | 32% | 26% | 21% | 18% | 15% | of 0°val |

Intensities in 180° c-plane

| 0° | 2° | 4° | 6° | 8° | 10° | 12° | 14° | 16° | 18° | 20° | 22° | 24° | 26° | 28° | 30° | 32° | 34° | 36° | 38° | y |
|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| 569 | 570 | 574 | 576 | 572 | 558 | 535 | 507 | 475 | 439 | 399 | 357 | 313 | 267 | 221 | 181 | 148 | 121 | 101 | 85 | cd |
| 100% | 100% | 101% | 101% | 100% | 98% | 94% | 89% | 83% | 77% | 70% | 63% | 55% | 47% | 39% | 32% | 26% | 21% | 18% | 15% | of 0°val |

Intensities in 270° c-plane

| 0° | 2° | 4° | 6° | 8° | 10° | 12° | 14° | 16° | 18° | 20° | 22° | 24° | 26° | 28° | 30° | 32° | 34° | 36° | 38° | y |
|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| 569 | 570 | 574 | 576 | 572 | 558 | 535 | 507 | 475 | 439 | 399 | 357 | 313 | 267 | 221 | 181 | 148 | 121 | 101 | 85 | cd |
| 100% | 100% | 101% | 101% | 100% | 98% | 94% | 89% | 83% | 77% | 70% | 63% | 55% | 47% | 39% | 32% | 26% | 21% | 18% | 15% | of 0°val |