

# 3.5" LED Adjustable Recessed Downlight 120VAC (50mm Lens)

SORAA arc™

## Product Specifications

The Soraa Arc™ Downlight series combines elegant design with Soraa's unique quality of light to create a dynamic and versatile solution for retail, hospitality, and residential applications. Soraa Arc gets its name from the form of its unique die-cast curved heat sink, which is precisely engineered for optimal thermal performance.

### 1. FRAME

Can be ordered in advance for ceiling construction phase.

**Housings:** New construction application - thermally protected (T) galvanized steel. Insulation must be kept 3" away from housing. IC type frame inherently protected, suitable for direct contact with insulation. Die-formed housing and integral junction box with five (5) 1/2" pry-outs. Removable power supply cover with Quick Connect fittings.

Remodel application- thermally protected (T) galvanized steel. Housing can be installed from below ceiling. Removable power supply cover with Quick Connect fittings.

**Electrical:** 120-277VAC fully integral LED electronic constant current driver (included). Frequency: 50/60Hz Power Factor: 0.93 Wattage: 18W.

**Dimming and Flicker:** Dimming as low as 5%\*; Triac, 0-10V, and ELV dimming standard. < 30% Flicker. See soraa.com for details.

**Mounting:** Pre-installed mounting brackets allow vertical adjustment of bar hangers up to 1". Complete fixture assembly will not exceed 5 lb. Accommodates ceiling thickness from 1/2" (13mm) to 1.75" (44mm). Ceiling cutout: 4.1" (105mm). Weight of total assembly: Non-IC frame 5 lb (including Light Engine); IC Frame 6.5 lb (including Light Engine); Remodel frame 1.5 lb (excluding Light Engine).

**Optional Trimless Adapter:** Order separately for use with trimless Light Engines only.

### 2. LIGHT ENGINE & COLLAR

**Soraa VIVID™ LED:** Soraa Full Spectrum integral LED Light Engine available in 2700K, 3000K, and 4000K with 95 CRI, 95 R9, and 100 Rw. IR and UV free.

**Soraa Optics:** Soraa optic technology with exceptional beam control and smooth uniform light distribution. The 15° beam versions are compatible with all Soraa SNAP accessories.

**Construction and Finish:** Light Engine includes die-cast aluminum heat sink designed for optimal thermal management. Collar made of die cast aluminium. Durable non-glare satin finish. Tilt: 35°, rotation: 365°.

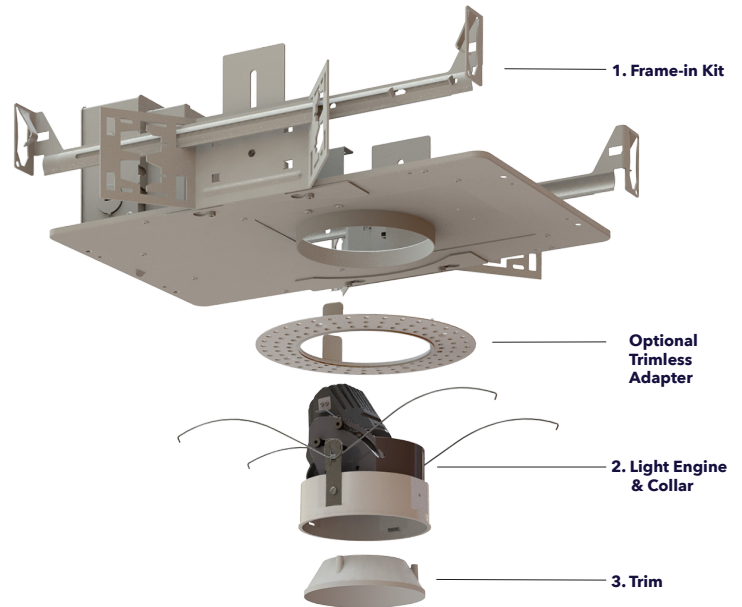
### 3. SNAP™ TRIMS

**Construction and Finish:** Die-cast aluminum construction. Magnetic SNAP attachment allows easy tool-free installation and tight ceiling fit. 4 color options available.

**Operating Temperature:** Minimum -40°C, 25°C typical.

**Compliance:** cULus listed for damp and dry locations. Wet location listed with Solite lens trim. FCC CFR Title 47 Part 15 Class B compliant. NOM compliant.

**Warranty:** Five year warranty. See [www.soraa.com](http://www.soraa.com).



Order Separate Part Numbers

1. Frame-In Kit (Optional Trimless Adapter)
2. Light Engine & Collar
3. SNAP Trim

Simple Installation, Including SNAP™ Trim

Replaceable Light Engine

Fully Adjustable from Below Ceiling without tools

Adjusts to 35° Tilt

Soraa Vivid Full Spectrum LED 95CRI, R9 >95, 100 Rw

Flicker-Free TRIAC/ELV 0-10V Dimming as low as 5%\*

25,000 hr Lifetime at 70% Lumen Maintenance

5 year Warranty



\* see [soraa.com/resources/arc\\_compatibility](http://soraa.com/resources/arc_compatibility)

# 3.5" LED Adjustable Recessed Downlight 120VAC (50mm Lens)

**SORAA** arc™

## Luminaire Specification Guide

### 1. Frame-In Kit

Sample Number: DFS50-T-U

May be ordered in advance as separate part number

#### Product Code

**DFR50** Downlight New Construction Frame (US Frame-in) Round

**DFS50** Downlight New Construction Frame (US Frame-in) Square

#### IC Rating

**IC** IC Rated

**T** Thermally Protected Non-IC

**CP** Chicago Plenum

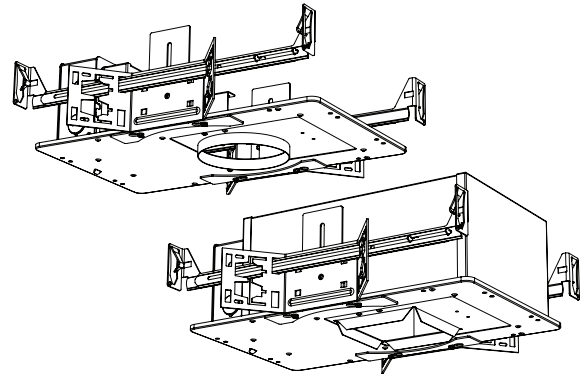
#### Driver

**U** 120-277VAC  
0-10V:120-277VAC  
Triac 120VAC  
ELV: 120VAC

**LH** Lutron LED Driver, Hi-lume, EcoSystem, 1% Dim

#### Options

**EMR** Emergency Battery Pack Installed



### 1A. Remodel Frame

Sample Number: DRD50-T-U

May be ordered in advance as separate part number

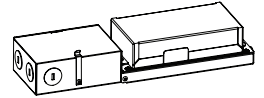
#### Product Code

**DRD50-T** Downlight Remodel Frame Thermally protected non-IC

#### Driver

**U** 120-277VAC 0-10V:120-277VAC Triac 120VAC  
ELV: 120VAC

**LH** Lutron LED Driver, Hi-lume, EcoSystem, 1% Dim



### Trimless Adaptor

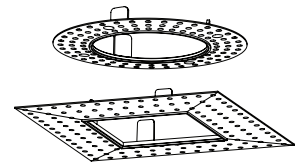
Sample Number: DMS50

Trimless Adaptor required for trimless installation.  
May be ordered in advance as separate part number.

#### Product Code

**DMS50** Downlight Trimless Adaptor Square

**DMR50** Downlight Trimless Adaptor Round



### 2. Light Engine & Collar

Sample Number: DESA50-15D-927-F-T-B

#### Product Code

**DESA50** Downlight Light Engine Square Adjustable

**DERA50** Downlight Light Engine Round Adjustable

#### Beam

**15D** 15° Narrow Spot (SNAP Compatible)

**25D** 25° Narrow Flood

**36D** 36° Flood

#### CRI/CCT

**927** 95/2700K

**930** 95/3000K

**940** 92/4000K

#### Mounting

**F** Frame

**R** Remodel

#### Collar

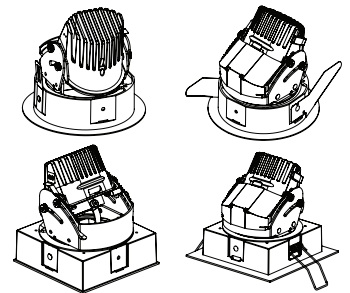
**T** Trimmed

**TL** Trimless

#### Finish

**B** Black

**W** White



### 3. SNAP™ Trim

Sample Number: DTSA50-W

#### Product Code

**DTSA50** Downlight Trim Square Adjustable

**DTRA50** Downlight Trim Round Adjustable

**DTSAP50** Downlight Trim Square Adjustable IP44 (Solite Lens)

**DTRAP50** Downlight Trim Round Adjustable IP44 (Solite Lens)

**DTSFP50** Downlight Trim Square Adjustable Pinhole

**DTRFP50** Downlight Trim Round Adjustable Pinhole

#### Finish

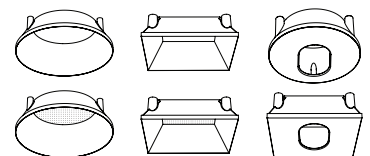
**B** Black

**W** White

**S** Silver

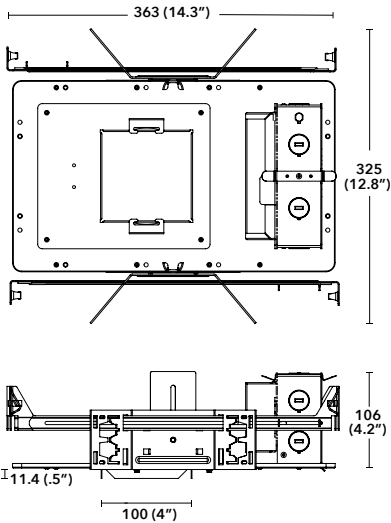
**T** Tangerine (Not available with Pinhole)

**C** Custom

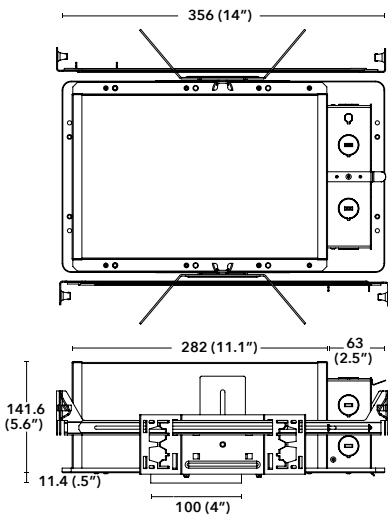


3.5" LED Adjustable Recessed Downlight  
120VAC (50mm Lens)

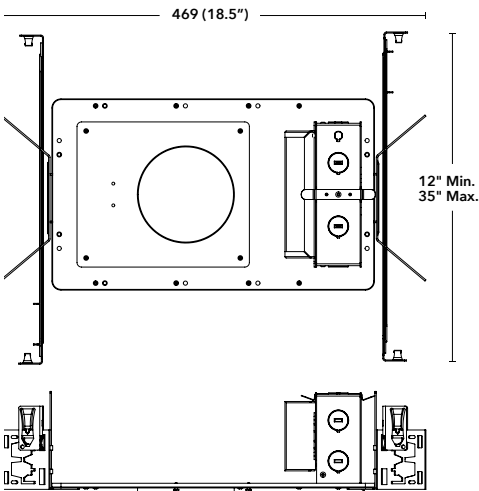
Frame and Trimless Adapter Dimensions



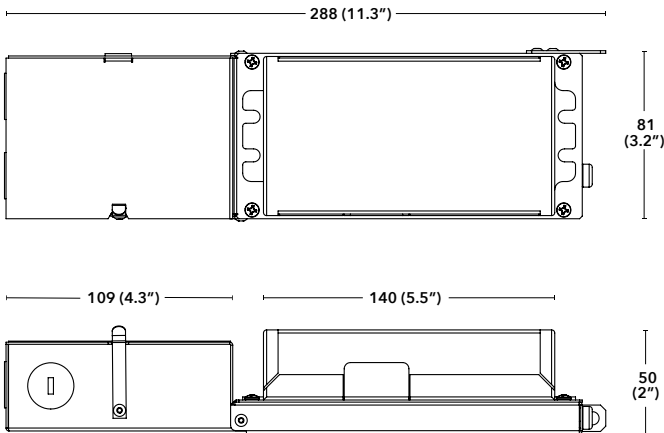
**DFR50-T** Non IC Thermally Protected  
Downlight Frame-In Kit



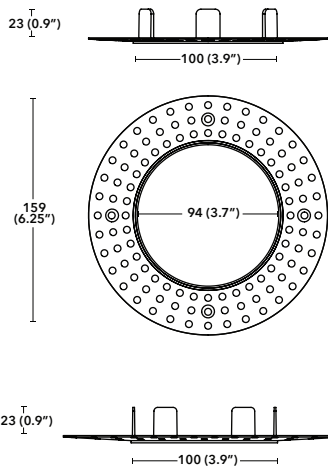
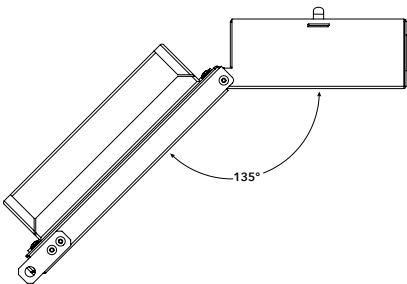
**DFR50-IC** IC Rated Downlight Frame-In Kit



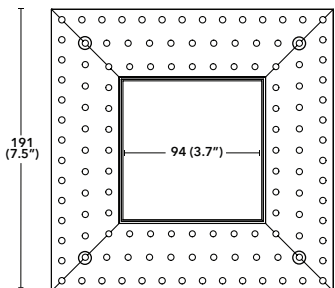
Alternate attachment of rails for DFR50-T and  
DFR50-IC. Rails collapse to 12" minimum and ex-  
pand to 35" maximum and have breakaway scores  
to facilitate custom fit.



**DRD50** Downlight Remodel Frame



**DMR50**  
Downlight  
Trimless Adapter  
Round



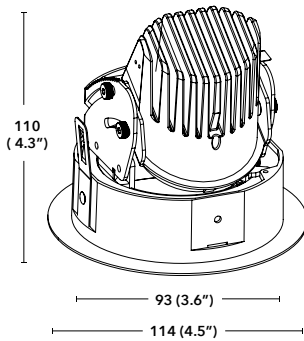
**DMS50**  
Downlight  
Trimless Adapter  
Square

# 3.5" LED Adjustable Recessed Downlight 120VAC (50mm Lens)

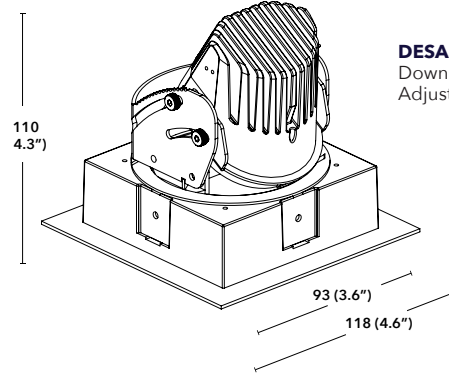
**SORAA** arc™

## Light Engine Overview

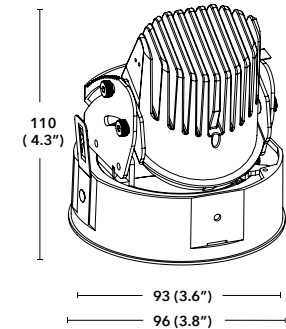
| Output                 | Color & Optics                 | Operation                                                        | Electrical                                                           |
|------------------------|--------------------------------|------------------------------------------------------------------|----------------------------------------------------------------------|
| <b>Lumens</b> 880-1040 | <b>CCT</b> 2700K, 3000K, 4000K | <b>Efficacy</b> 48-58 lm/W                                       | <b>Input Voltage</b> 120-277VAC, 50/60hz                             |
| <b>CBCP</b> 2560-8380  | <b>CRI</b> 95                  | <b>Ambient Operating Temperature</b> Minimum -40°C, 25°C typical | <b>Input Current @120V (Max)</b> 0.10A                               |
|                        | <b>R9</b> >95                  | <b>Lifetime</b> 25,000 hours                                     | <b>Power Factor</b> 0.93                                             |
|                        | <b>Rw</b> 100                  |                                                                  | <b>Top Rated Power</b> 18W                                           |
|                        | <b>SDCM</b> 3-step McA         |                                                                  | <b>Dimming</b> 100% - 5%<br>(see soraa.com for performance details*) |
|                        | <b>Beams</b> 15°, 25°, 36°     |                                                                  |                                                                      |



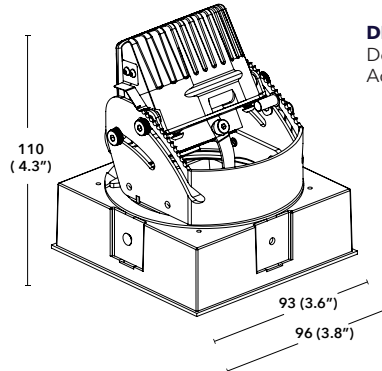
**DERA50-T**  
Downlight Light Engine Round  
Adjustable Trimmed



**DESA50-T**  
Downlight Light Engine Square  
Adjustable Trimmed



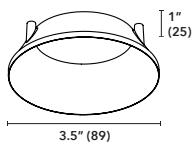
**DERA50-TL**  
Downlight Light Engine Round  
Adjustable Trimless



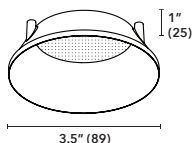
**DESA50-TL**  
Downlight Light Engine Square  
Adjustable Trimless

\* soraa.com/resources/arc\_compatibility

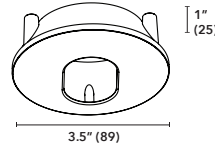
## SNAP™ Trim Overview



**DTRA50**  
Downlight Trim Round Adjustable



**DTRA50**  
Downlight Trim Round Adjustable  
IP44 (Solite Lens)



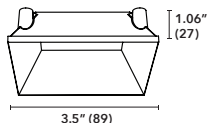
**DTRA50**  
Downlight Trim Round Adjustable  
Pinhole



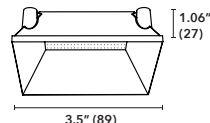
**B** Black



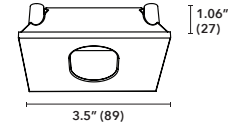
**W** White



**D TSA50**  
Downlight Trim Square Adjustable



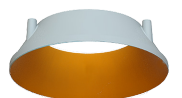
**D TSA50**  
Downlight Trim Square Adjustable  
IP44 (Solite Lens)



**D TSA50**  
Downlight Trim Square Adjustable  
Pinhole



**S** Silver



**T** Tangerine

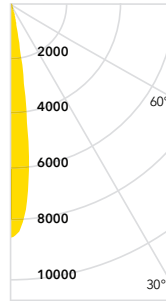
# 3.5" LED Adjustable Recessed Downlight 120VAC (50mm Lens)

SORAA arc™

## Photometrics

Photometric Base Configuration:  
CCT- 3000K, Remodel and Non-IC  
Photometric scaling: IC and CP : 0.7  
FC Multipliers: 2700K: 0.95; 4000K: 1.04

Spot 15°

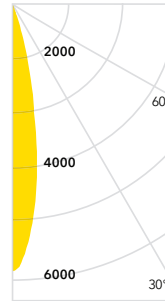


| W  | CCT  | Lm  | CBCP    |
|----|------|-----|---------|
| 18 | 2700 | 880 | 7650 cd |
| 18 | 3000 | 930 | 8080 cd |
| 18 | 4000 | 965 | 8380 cd |

Candelas at Nadir

|     |      |
|-----|------|
| 0°  | 8165 |
| 5°  | 6573 |
| 15° | 628  |
| 25° | 151  |
| 35° | 87   |
| 45° | 46   |

Narrow Flood 25°

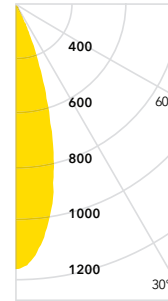


| W  | CCT  | Lm   | CBCP    |
|----|------|------|---------|
| 18 | 2700 | 950  | 5510 cd |
| 18 | 3000 | 1000 | 5800 cd |
| 18 | 4000 | 1040 | 6030 cd |

Candelas at Nadir

|     |      |
|-----|------|
| 0°  | 5870 |
| 5°  | 4970 |
| 15° | 1562 |
| 25° | 128  |
| 35° | 37   |
| 45° | 25   |

Flood 36°



| W  | CCT  | Lm   | CBCP    |
|----|------|------|---------|
| 18 | 2700 | 950  | 2560 cd |
| 18 | 3000 | 1000 | 2700 cd |
| 18 | 4000 | 1040 | 2800 cd |

Candelas at Nadir

|     |      |
|-----|------|
| 0°  | 2771 |
| 5°  | 2683 |
| 15° | 1627 |
| 25° | 408  |
| 35° | 82   |
| 45° | 32   |



Soraa SNAP  
Compatible

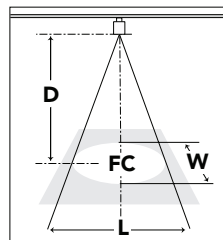
## Aiming Angles

L and W refer to outer points where footcandles drop to 50% of maximum. FC refers to initial footcandles at the center of the beam.

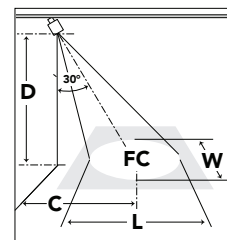
Key

**L** Beam Distance  
**D** Distance  
**W** Beam Width  
**FC** Footcandles  
**C** Distance to Center Beam

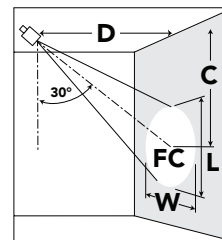
0° Horizontal



30° Horizontal



30° Vertical



Spot 15°

| D  | FC  | L   | W   |
|----|-----|-----|-----|
| 6  | 226 | 1.6 | 1.6 |
| 8  | 127 | 2.1 | 2.1 |
| 10 | 82  | 2.6 | 2.6 |
| 12 | 57  | 3.1 | 3.1 |

| D  | C   | FC  | L   | W   |
|----|-----|-----|-----|-----|
| 6  | 3.7 | 151 | 2.1 | 1.8 |
| 8  | 4.8 | 86  | 2.8 | 2.3 |
| 10 | 5.9 | 55  | 3.4 | 2.9 |
| 12 | 7.0 | 39  | 4.1 | 3.5 |

| D | C   | FC  | L   | W   |
|---|-----|-----|-----|-----|
| 2 | 3.7 | 307 | 1.7 | 0.9 |
| 3 | 5.4 | 140 | 2.5 | 1.3 |
| 4 | 7.1 | 79  | 3.3 | 1.8 |
| 5 | 8.7 | 51  | 4.1 | 2.1 |

Narrow Flood 25°

| D  | FC  | L   | W   |
|----|-----|-----|-----|
| 6  | 164 | 2.2 | 2.2 |
| 8  | 93  | 2.9 | 2.9 |
| 10 | 61  | 3.6 | 3.6 |
| 12 | 43  | 4.3 | 4.3 |

| D  | C   | FC  | L   | W   |
|----|-----|-----|-----|-----|
| 6  | 3.6 | 109 | 2.9 | 2.5 |
| 8  | 4.8 | 62  | 3.8 | 3.3 |
| 10 | 6.0 | 41  | 4.6 | 4.1 |
| 12 | 7.1 | 28  | 5.5 | 4.9 |

| D | C   | FC  | L   | W   |
|---|-----|-----|-----|-----|
| 2 | 3.9 | 239 | 2.1 | 1.2 |
| 3 | 5.7 | 108 | 3.1 | 1.8 |
| 4 | 7.5 | 62  | 4.1 | 2.4 |
| 5 | 9.3 | 40  | 5.1 | 2.9 |

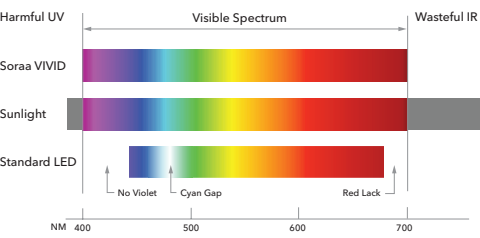
Flood 36°

| D  | FC | L   | W   |
|----|----|-----|-----|
| 6  | 78 | 3.3 | 3.2 |
| 8  | 45 | 4.3 | 4.2 |
| 10 | 29 | 5.3 | 5.3 |
| 12 | 21 | 6.2 | 6.2 |

| D  | C   | FC | L   | W   |
|----|-----|----|-----|-----|
| 6  | 3.8 | 57 | 3.8 | 3.5 |
| 8  | 5.0 | 32 | 5.0 | 4.6 |
| 10 | 6.1 | 21 | 6.2 | 5.5 |
| 12 | 7.1 | 15 | 7.5 | 6.6 |

| D | C   | FC  | L   | W   |
|---|-----|-----|-----|-----|
| 2 | 4.2 | 152 | 2.1 | 1.5 |
| 3 | 6.0 | 68  | 3.2 | 2.2 |
| 4 | 7.7 | 39  | 4.2 | 3.0 |
| 5 | 9.3 | 25  | 5.1 | 3.6 |

# Soraa Arc™ Color and Whiteness Rendering



Soraa has engineered the perfect balance between color rendering and white rendering. Soraa's core technology uses a violet LED emitter as the basis for full spectrum light. This allows both Vivid™ color rendering and Natural White™ white rendering, which creates whiteness by exciting fluorescing agents with violet radiation, without the harmful effect of UV.

| CCT  | CRI | R9 | Rf | Rg  | Rfh1 | Rw  | McA |
|------|-----|----|----|-----|------|-----|-----|
| 2700 | 95  | 95 | 90 | 100 | 95   | 120 | 3   |
| 3000 | 95  | 95 | 90 | 100 | 95   | 120 | 3   |
| 4000 | 92  | 95 | 90 | 100 | 95   | 70  | 4   |

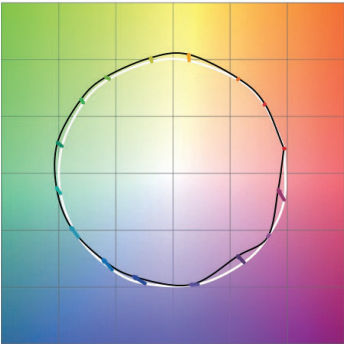
**Rf:** The TM-30 metric for color fidelity (similarity to colors under natural light), a more accurate version of the CRI Ra. Rf is 100 for natural light.

**Rg:** The TM-30 metric for color gamut (whether colors are more saturated than under natural light). Rg is 100 for natural light.

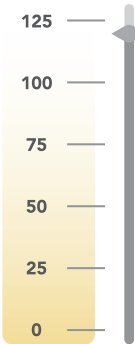
**Rfh1:** The TM-30 metric for color fidelity for red tones. Rfh1 is a more accurate version of the CRI R9. Rfh1 is 100 for natural light.

**Rw:** The Soraa-developed metric for white fidelity. Rw measures the magnitude of excitation of whitening agents within white materials. Rw is 100 for natural light.

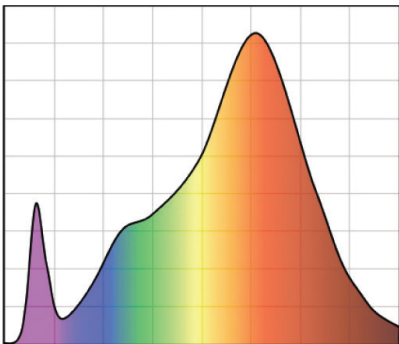
## 2700K



Rf: 90, Rg: 100, Rfh1: 95

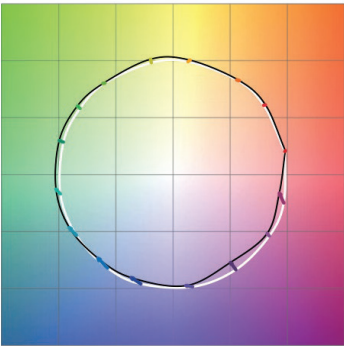


Rw: 120

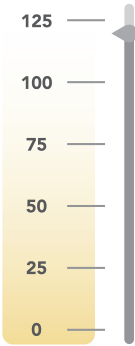


CRI: 95, R9: 95

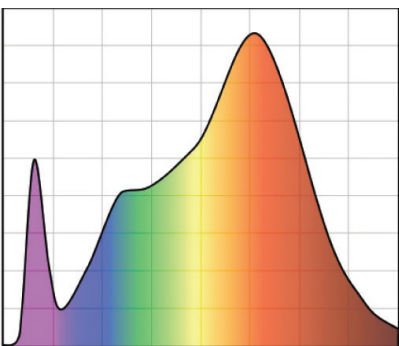
## 3000K



Rf: 90, Rg: 100, Rfh1: 95

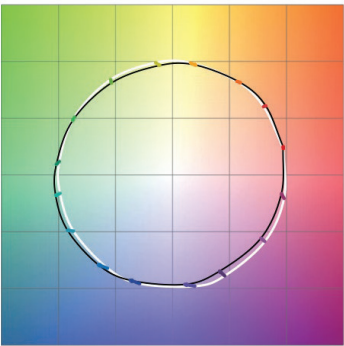


Rw: 120

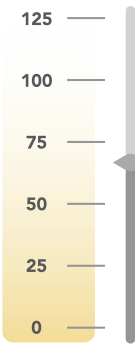


CRI: 95, R9: 95

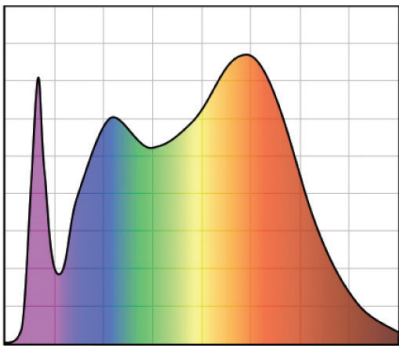
## 4000K



Rf: 90, Rg: 100, Rfh1: 95



Rw: 70



CRI: 95, R9: 95