

# 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](http://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°.

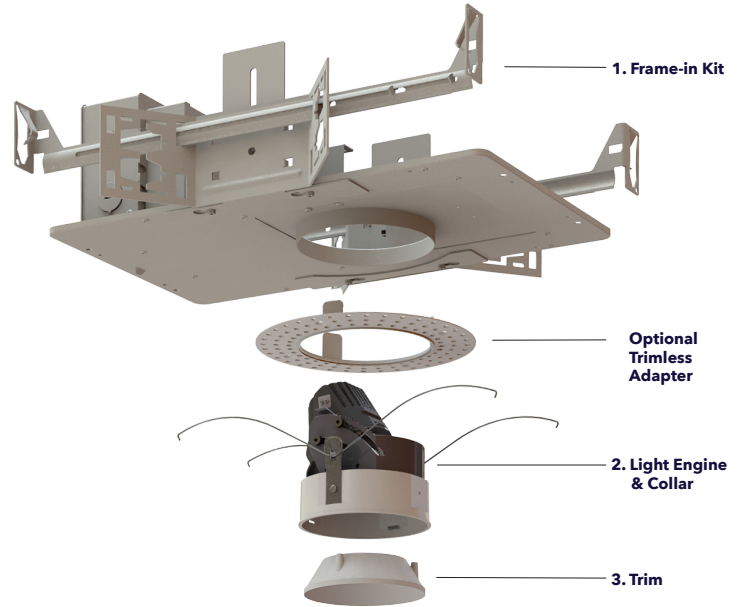
### 3. SNAP™ TRIMS

**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)

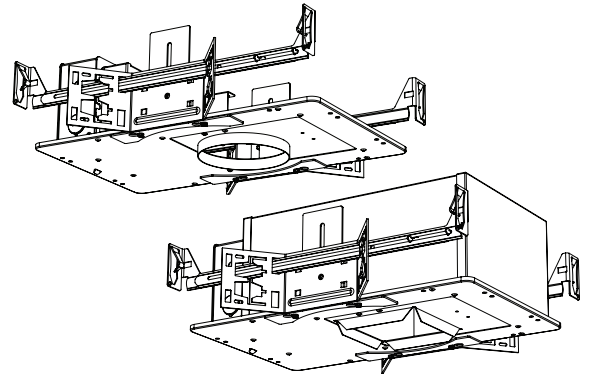
# 3.5" LED Adjustable Recessed Downlight 120VAC (50mm Lens)

## Luminaire Specification Guide

### 1. Frame-In Kit

Sample Number: DFS50-T-U  
May be ordered in advance as separate part number

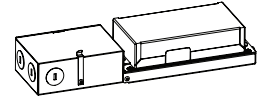
Product Code	IC Rating	Driver	Options
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<b>DFR50</b> Downlight New Construction Frame (US Frame-in) Round	<b>IC</b> IC Rated	<b>U</b> 120-277VAC 0-10V:120-277VAC Triac 120VAC ELV: 120VAC	<b>EMR</b> Emergency Battery Pack Installed
<b>DFS50</b> Downlight New Construction Frame (US Frame-in) Square	<b>T</b> Thermally Protected Non-IC	<b>LH</b> Lutron LED Driver, Hi-lume, EcoSystem, 1% Dim	
	<b>CP</b> Chicago Plenum		



### 1A. Remodel Frame

Sample Number: DRD50-T-U  
May be ordered in advance as separate part number

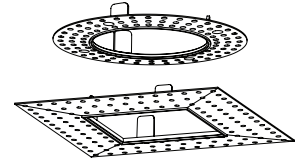
Product Code	Driver
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<b>DRD50-T</b> Downlight Remodel Frame Thermally protected non-IC	<b>U</b> 120-277VAC 0-10V:120-277VAC Triac 120VAC ELV: 120VAC
	<b>LH</b> Lutron LED Driver, Hi-lume, EcoSystem, 1% Dim



### Trimless Adaptor

Sample Number: DMS50  
Trimless Adaptor required for trimless installation.  
May be ordered in advance as separate part number.

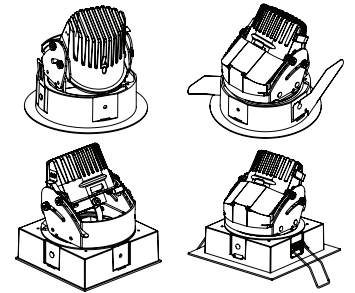
Product Code
<input type="text"/>
<b>DMS50</b> Downlight Trimless Adaptor Square
<b>DMR50</b> Downlight Trimless Adaptor Round



### 2. Light Engine & Collar

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

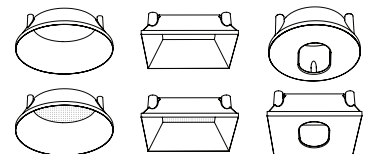
Product Code	Beam	CRI/CCT	Mounting	Collar	Finish
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<b>DESA50</b> Downlight Light Engine Square Adjustable	<b>15D</b> 15° Narrow Spot (SNAP Compatible)	<b>927</b> 95/2700K <b>930</b> 95/3000K <b>940</b> 92/4000K	<b>F</b> Frame <b>R</b> Remodel	<b>T</b> Trimmed <b>TL</b> Trimless	<b>B</b> Black <b>W</b> White
<b>DERA50</b> Downlight Light Engine Round Adjustable	<b>25D</b> 25° Narrow Flood <b>36D</b> 36° Flood				



### 3. SNAP™ Trim

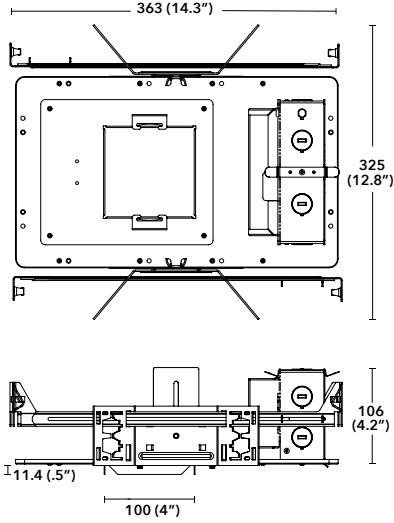
Sample Number: DTSA50-W

Product Code	Finish
<input type="text"/>	<input type="text"/>
<b>DTSA50</b> Downlight Trim Square Adjustable	<b>B</b> Black
<b>DTRA50</b> Downlight Trim Round Adjustable	<b>W</b> White
<b>DTSAW50</b> Downlight Trim Square Adjustable IP44 (Solite Lens)	<b>S</b> Silver
<b>DTRAW50</b> Downlight Trim Round Adjustable IP44 (Solite Lens)	<b>T</b> Tangerine (Not available with Pinhole)
<b>DTSFP50</b> Downlight Trim Square Adjustable Pinhole	<b>C</b> Custom
<b>DTRFP50</b> Downlight Trim Round Adjustable Pinhole	

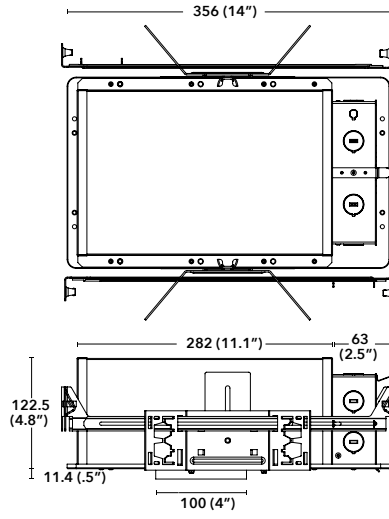


# 3.5" LED Adjustable Recessed Downlight 120VAC (50mm Lens)

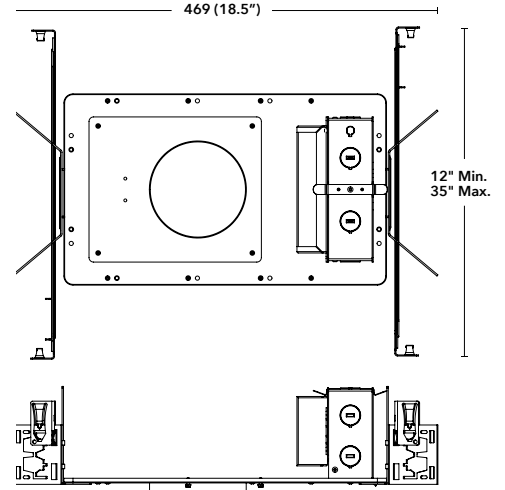
## Frame and Trimless Adapter Dimensions



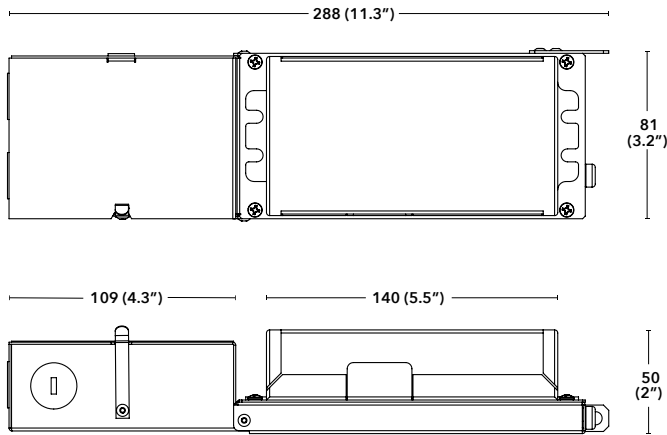
**DFR50-T** Non IC Thermally Protected Downlight Frame-In Kit



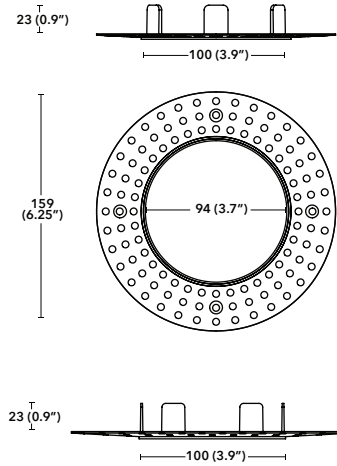
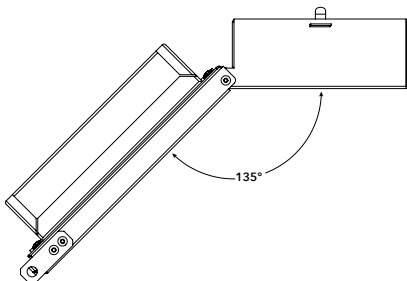
**DFR50-IC** IC Rated Downlight Frame-In Kit



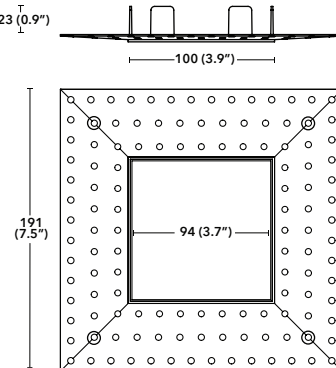
Alternate attachment of rails for DFR50-T and DFR50-IC. Rails collapse to 12" minimum and expand to 35" maximum and have breakaway scores to facilitate custom fit.



**DRD50** Downlight Remodel Frame



**DMR50** Downlight Trimless Adapter Round

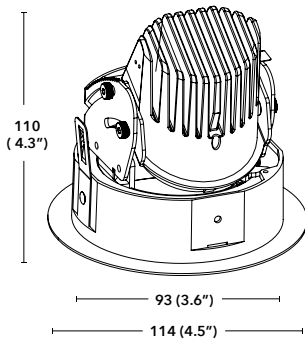


**DMS50** Downlight Trimless Adapter Square

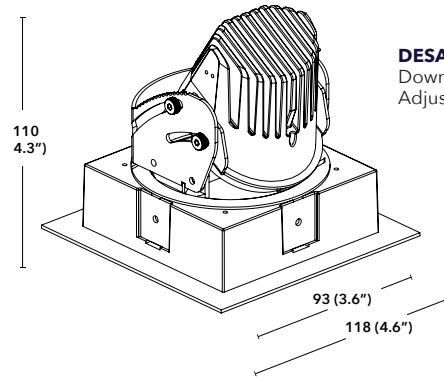
# 3.5" LED Adjustable Recessed Downlight 120VAC (50mm Lens)

## Light Engine Overview

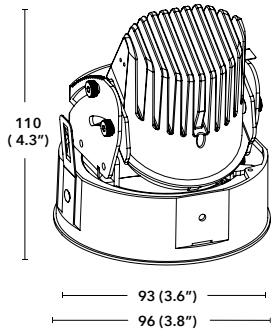
Output	Color & Optics	Operation	Electrical
<b>Lumens</b> 880-1040	<b>CCT</b> 2700K, 3000K, 4000K	<b>Efficacy</b> 48-58 lm/W	<b>Input Voltage</b> 120-277VAC, 50/60hz
<b>CBCP</b> 2560-8380	<b>CRI</b> 95	<b>Ambient Operating Temperature</b> Minimum -40°C, 25°C typical	<b>Input Current @120V (Max)</b> 0.10A
	<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% (see soraa.com for performance details*)
	<b>Beams</b> 15°, 25°, 36°		



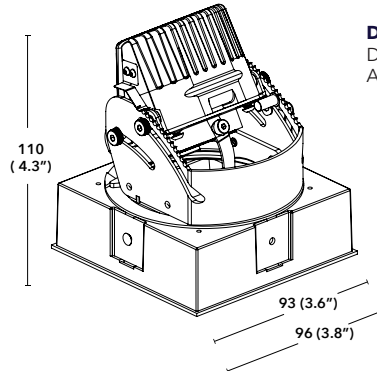
**DERA50-T**  
Downlight Light Engine Round  
Adjustable Trimmed



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



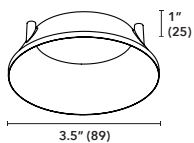
**DERA50-TL**  
Downlight Light Engine Round  
Adjustable Trimless



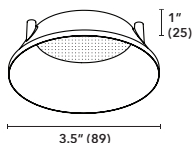
**DESA50-TL**  
Downlight Light Engine Square  
Adjustable Trimless

\* soraa.com/resources/arc\_compatibility

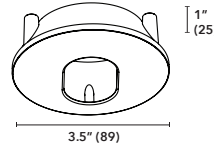
## SNAP™ Trim Overview



**DTRA50**  
Downlight Trim Round Adjustable



**DTRAW50**  
Downlight Trim Round Adjustable  
IP44 (Solite Lens)



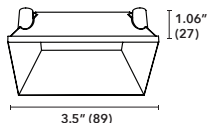
**DTRAW50**  
Downlight Trim Round Adjustable  
Pinhole



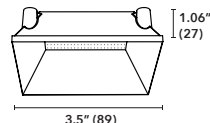
**B** Black



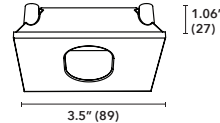
**W** White



**D TSA50**  
Downlight Trim Square Adjustable



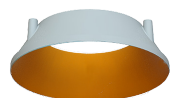
**D TSAW50**  
Downlight Trim Square Adjustable  
IP44 (Solite Lens)



**D TSAW50**  
Downlight Trim Square Adjustable  
Pinhole



**S** Silver

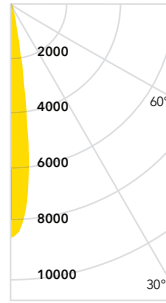


**T** Tangerine

## 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°

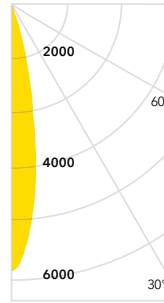


W	CCT	Lm	CBCP
18	2700	880	7650 cd
18	3000	930	8080 cd
18	4000	965	8380 cd

#### Candelas at Nadir

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

### Narrow Flood 25°

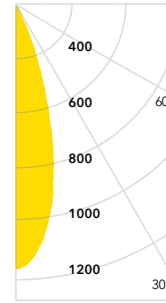


W	CCT	Lm	CBCP
18	2700	950	5510 cd
18	3000	1000	5800 cd
18	4000	1040	6030 cd

#### 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

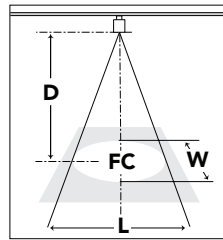
## Aiming Angles

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.

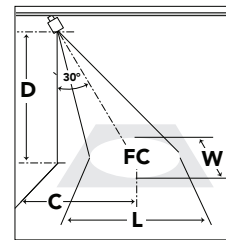
Key

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

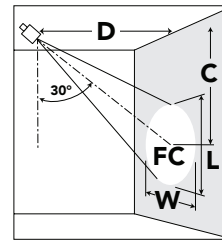
### 0° Horizontal



### 30° Horizontal

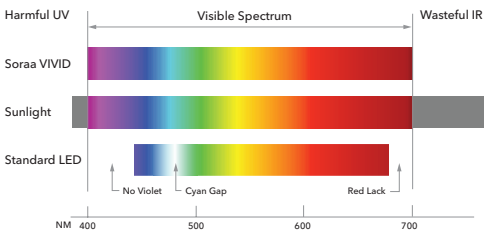


### 30° Vertical



	D	FC	L	W	D	C	FC	L	W	D	C	FC	L	W
Spot 15°	6	226	1.6	1.6	6	3.7	151	2.1	1.8	2	3.7	307	1.7	0.9
	8	127	2.1	2.1	8	4.8	86	2.8	2.3	3	5.4	140	2.5	1.3
	10	82	2.6	2.6	10	5.9	55	3.4	2.9	4	7.1	79	3.3	1.8
	12	57	3.1	3.1	12	7.0	39	4.1	3.5	5	8.7	51	4.1	2.1
Narrow Flood 25°	6	164	2.2	2.2	6	3.6	109	2.9	2.5	2	3.9	239	2.1	1.2
	8	93	2.9	2.9	8	4.8	62	3.8	3.3	3	5.7	108	3.1	1.8
	10	61	3.6	3.6	10	6.0	41	4.6	4.1	4	7.5	62	4.1	2.4
	12	43	4.3	4.3	12	7.1	28	5.5	4.9	5	9.3	40	5.1	2.9
Flood 36°	6	78	3.3	3.2	6	3.8	57	3.8	3.5	2	4.2	152	2.1	1.5
	8	45	4.3	4.2	8	5.0	32	5.0	4.6	3	6.0	68	3.2	2.2
	10	29	5.3	5.3	10	6.1	21	6.2	5.5	4	7.7	39	4.2	3.0
	12	21	6.2	6.2	12	7.1	15	7.5	6.6	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

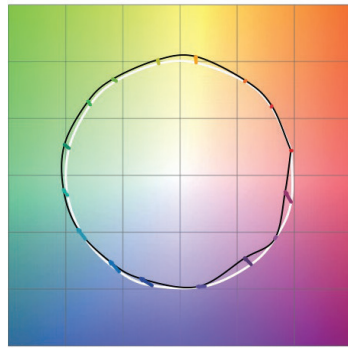
**Rf:** The TM-30 metric for color fidelity (similarity to colors under natural light), a more accurate version of the CRI Ra. Rf is 100 for natural light.

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

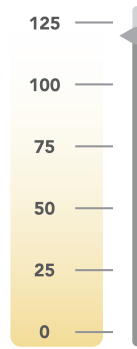
**Rfh1:** The TM-30 metric for color fidelity for red tones. Rfh1 is a more accurate version of the CRI R9. Rfh1 is 100 for natural light.

**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.

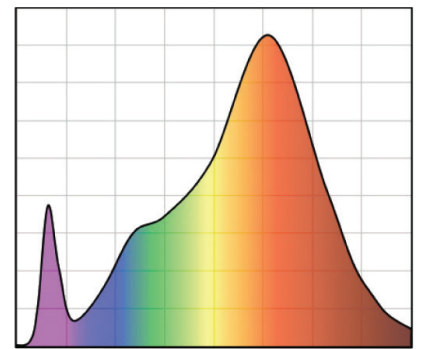
## 2700K



Rf: 90, Rg: 100, Rfh1: 95

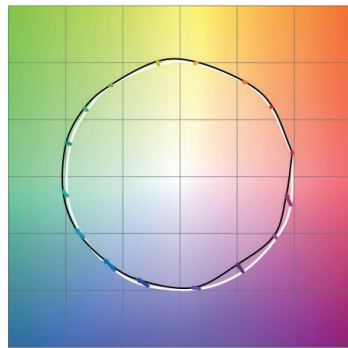


Rw: 120

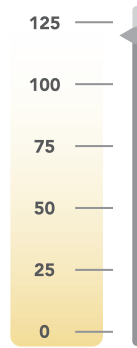


CRI: 95, R9: 95

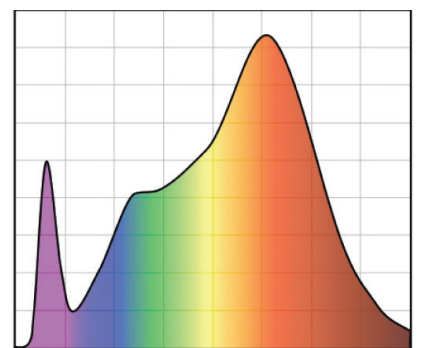
## 3000K



Rf: 90, Rg: 100, Rfh1: 95

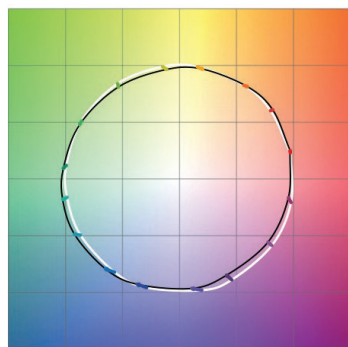


Rw: 120

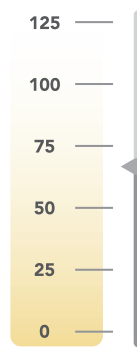


CRI: 95, R9: 95

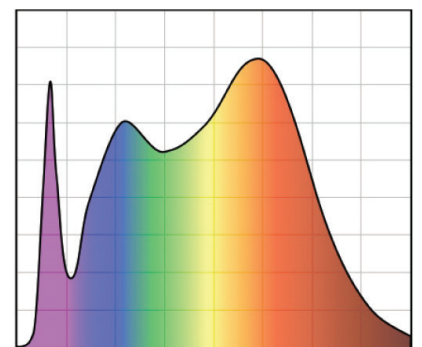
## 4000K



Rf: 90, Rg: 100, Rfh1: 95



Rw: 70



CRI: 95, R9: 95