

# NCR2-81 / NCR2-86 / NCR2-88

## 8" Sapphire II High Lumen Retrofit Downlight

Source: 15W to 60W LED  
900lm to 4500lm

Type \_\_\_\_\_  
Project \_\_\_\_\_  
Catalog No. \_\_\_\_\_  
Notes \_\_\_\_\_

### PRODUCT DESCRIPTION

The Sapphire II COB Retrofit Series is an architectural grade LED high lumen replacement. Using existing commercial or architectural frame-ins, replace old light source and reflectors with the latest LED technology. Each luminaire includes flexible conduit and junction box with dimmable drivers.

The Sapphire II COB Series is an architectural grade LED high lumen downlight. The Sapphire II uses the latest COB technology by Cree®. The COB allows for better optic control offering 3 beam spreads. Beam spreads focus the light down to the work plane from high ceiling applications. The reflectors have been designed for the high efficiency (LPW) while providing low aperture brightness. The Sapphire II COB Series is proudly assembled in the USA.

### FEATURES

- Retrofit existing architectural or commercial frame-ins with the latest LED technology
- Over 80% energy savings when compared to incandescent
- Cree® COB technology
- Shatter resistant lens
- Specifiable beam spreads
- 8" deep cone reflectors, wall wash and deco glass
- 900lm, 1500lm, 2500lm, 3500lm, and 4500lm LED packages
- 2700K, 3000K, 3500K and 4000K @ 90+ CRI
- 5-year limited warranty
- cULus classified for wet locations
- ENERGY STAR certified

### SPECIFICATION

**Reflector:** Deep cone self flanged reflector spun from 0.050 high grade aluminum provides even illumination and visual comfort. The deep cone reflectors provide 55+ degree cut-off. NCR2-88 includes 3 studs mounted in the flange for attaching decorative glass. Decorative glass will reduce the amount of usable light by 10 to 30%, depending on the selected glass.

**Reflector Assembly:** The reflector assembly includes the LED optical package and heat sink mounted on top. Reflector assembly is connected to junction box and dimmable driver. Junction box easily wires to input voltage with wire nuts (included). Luminaire accommodates ceiling thickness from 3/8" to 1-1/2".

### ELECTRICAL

#### Lumens / Wattage:

**L09** = 900lm / 15W; **L15** = 1500lm / 18W;  
**L25** = 2500lm / 30W; **L35** = 3500lm / 46W;  
**L45** = 4500lm / 60W

**Color Temperature:** 2700K, 3000K, 3500K, 4000K

**CRI:** 90+CRI

**Beam Spread:** (S) Spot; (M) Narrow Flood; (F) Flood

**Operating Temp.:** 0°C to 45°C ambient temperature

**Lifetime:** 60,000 hours @ L70

**Dimming:** Triac, ELV or 0-10V dimming

[Click Here](#) or check complete dimmer list at [www.NoraLighting.com](http://www.NoraLighting.com) in the "Compatibility" page under "Resources" tab.

### COMPATIBLE FRAME-INS

Reflector assembly is compatible with Nora 8" Commercial and Architectural Frames.

**NHP8U, NH8PU, NHRP8U, NHPV-8, NH8PV, NHRPV-8, NHFM8, NHFM-9, NHRFM8, NHAHV-8, NH-300, NHR-300**

### LABELS AND LISTINGS

- cULus classified for Wet Location
- ENERGY STAR certified
- [5-Year Limited Warranty](#)
- RoHS Compliant



### PRODUCT IMAGES



**NCR2-81** Open Reflector

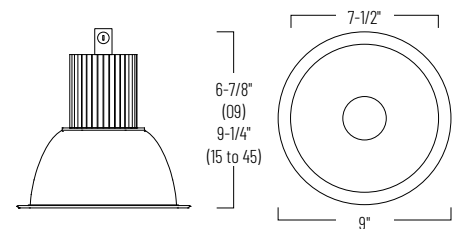


**NCR2-86** Wall Wash Reflector



**NCR2-88** Decorative Glass Reflector  
(Specify glass separately)

### PRODUCT DIMENSIONS



## 8" Sapphire II Retrofit Reflectors

| Reflector Type                            | Lumens / Wattage         | Color Temp.       | Beam Spread             | Driver  | Reflector Finish          | Flange Finish             |
|---|--------------------------|-------------------|-------------------------|---|---------------------------|---------------------------|
| <b>NCR2-81</b> = Open Reflector           | <b>09</b> = 900lm / 15W  | <b>27</b> = 2700K | <b>S</b> = Spot         | <b>E3</b> = 120V Input; Triac/ELV/0-10V dimming | <b>B</b> = Black          | <b>SF</b> = Self Flanged  |
| <b>NCR2-86</b> = Wall Wash <sup>1</sup>   | <b>15</b> = 1500lm / 18W | <b>30</b> = 3000K | <b>M</b> = Narrow Flood | <b>E6</b> = 120-277V Input; 0-10V dimming       | <b>D</b> = Clear Diffused | <b>WSF</b> = White Flange |
| <b>NCR2-88</b> = Deco Glass* <sup>1</sup> | <b>25</b> = 2500lm / 30W | <b>35</b> = 3500K | <b>F</b> = Flood        |   | <b>H</b> = Haze           |                           |
| <sup>1</sup> Not compatible with 4500lm   | <b>35</b> = 3500lm / 46W | <b>40</b> = 4000K |                         |   | <b>W</b> = White          |                           |
|   | <b>45</b> = 4500lm / 60W |                   |                         |   |                           |                           |

### \* Deco Glass Option

- NTG-8B/167** Tempered Blue Glass with 6-5/8" Open Center
- NTG-8B/80** Tempered Blue Glass with 3-1/8" Open Center
- NTG-8CF** Tempered Clear Glass with Frosted Center
- NTG-8FC** Tempered Frosted Glass with Clear Center
- NTG-8HC** Tempered Clear Glass with Frosted Center and 3-1/8" Open Center

Example: **NCR2-813535ME6WSF** = 8" Sapphire II Retrofit Reflector, 3500lm / 46W, 3500K, Narrow Flood Beam Spread, 120-277V, White Finish / Self Flanged

# PHOTOMETRICS

## 8" Sapphire II Retrofit Series

Type

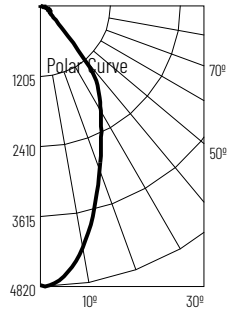
Project

Catalog No.

Notes

### Test Information

Test Number: 727461  
 Part Number: NCR2-81L4540SWSF  
 Lumens: 4630lm  
 Wattage: 56.3W  
 Efficacy: 82lpw  
 CCT / CRI: 4000K / 90 CRI  
 Spacing Criteria (0°-180): 0.76  
 Spacing Criteria (90°-270): 0.76



### Illuminance at a Distance

| Distance from Luminaire | FC at Nadir | Beam Diameter |
|-------------------------|-------------|---------------|
| 6'                      | 135fc       | 5'-11"        |
| 9'                      | 60fc        | 8'-10"        |
| 12'                     | 33.8fc      | 11'-8"        |
| 15'                     | 21.6fc      | 14'-8"        |
| 18'                     | 15fc        | 17'-7"        |

### Zonal Lumen Summary

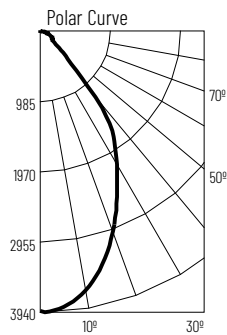
| Zone   | Lumens | % Luminaire |
|--------|--------|-------------|
| 0-30   | 2573   | 55.6        |
| 0-40   | 3642   | 78.7        |
| 0-60   | 4298   | 92.8        |
| 0-90   | 4598   | 99.3        |
| 90-180 | 32     | 0.7         |
| 0-180  | 4630   | 100         |

### Candela Table

| Vertical Angles | Candela |
|-----------------|---------|
| 0               | 4800    |
| 5               | 4667    |
| 15              | 3600    |
| 25              | 2485    |
| 35              | 1749    |
| 45              | 515     |

### Test Information

Test Number: 727477  
 Part Number: NCR2-81L4540MWSF  
 Lumens: 4596lm  
 Wattage: 56W  
 Efficacy: 82lpw  
 CCT / CRI: 4000K / 90 CRI  
 Spacing Criteria (0°-180): 0.92  
 Spacing Criteria (90°-270): 0.92



### Illuminance at a Distance

| Distance from Luminaire | FC at Nadir | Beam Diameter |
|-------------------------|-------------|---------------|
| 6'                      | 109fc       | 7'-8"         |
| 9'                      | 48.4fc      | 11'-7"        |
| 12'                     | 27.2fc      | 15'-5"        |
| 15'                     | 17.4fc      | 19'-4"        |
| 18'                     | 12.1fc      | 23'-1"        |

### Zonal Lumen Summary

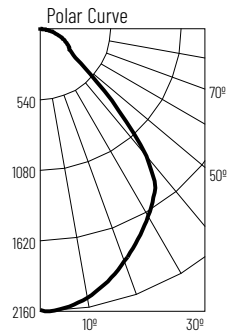
| Zone   | Lumens | % Luminaire |
|--------|--------|-------------|
| 0-30   | 2475   | 53.8        |
| 0-40   | 3571   | 77.7        |
| 0-60   | 4266   | 92.8        |
| 0-90   | 4565   | 99.3        |
| 90-180 | 31     | 0.7         |
| 0-180  | 4596   | 100         |

### Candela Table

| Vertical Angles | Candela |
|-----------------|---------|
| 0               | 3819    |
| 5               | 3864    |
| 15              | 3377    |
| 25              | 2555    |
| 35              | 1804    |
| 45              | 567     |

### Test Information

Test Number: 727489  
 Part Number: NCR2-81L4540FWSF  
 Lumens: 3762lm  
 Wattage: 56.2W  
 Efficacy: 67lpw  
 CCT / CRI: 4000K / 90 CRI  
 Spacing Criteria (0°-180): 1.16  
 Spacing Criteria (90°-270): 1.16



### Illuminance at a Distance

| Distance from Luminaire | FC at Nadir | Beam Diameter |
|-------------------------|-------------|---------------|
| 6'                      | 59.7fc      | 10'-10"       |
| 9'                      | 26.5fc      | 16'-2"        |
| 12'                     | 14.9fc      | 21'-7"        |
| 15'                     | 9.6fc       | 26'-11"       |
| 18'                     | 6.6fc       | 32'-4"        |

### Zonal Lumen Summary

| Zone   | Lumens | % Luminaire |
|--------|--------|-------------|
| 0-30   | 1577   | 41.9        |
| 0-40   | 2514   | 66.8        |
| 0-60   | 3384   | 90          |
| 0-90   | 3737   | 99.3        |
| 90-180 | 25.2   | 0.7         |
| 0-180  | 3762   | 100         |

### Candela Table

| Vertical Angles | Candela |
|-----------------|---------|
| 0               | 2150    |
| 5               | 2134    |
| 15              | 1991    |
| 25              | 1765    |
| 35              | 1521    |
| 45              | 786     |

### Lumen Output Multipliers

Color Temperature: 2700K (0.87), 3000K (0.91), 3500K (0.96), 4000K (1.00)  
 Lumen Package: L09 (0.25), L15 (0.34), L25 (0.53), L35 (0.83), L45 (1.00)