

# NERLITE® DARK FIELD



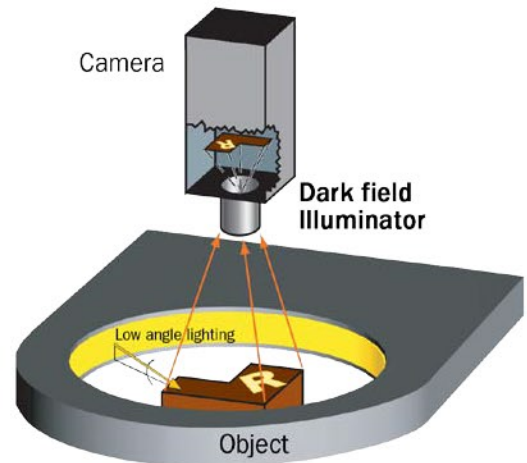
## Low Angle Lighting Solution

Microscan's wide range of NERLITE products can illuminate any part or mark for successful machine vision and auto ID applications.

Dark field illuminators provide effective low-angle lighting to targeted regions, and enhance the contrast of surface features such as laser embossed or engraved marks or surface defects. Dark field illuminators are particularly well suited for applications such as reading laser-etched symbologies, and inspecting surfaces with geometric contours.

### Dark Field: At a Glance

- Provides effective, low-angle illumination
- Enhances contrast of surface features such as laser embossed or engraved marks



### Illumination Example:

Object



Resulting Image



**Embossed logo on a metal surface:** Low angle illumination provides a high contrast image.

### Application Examples

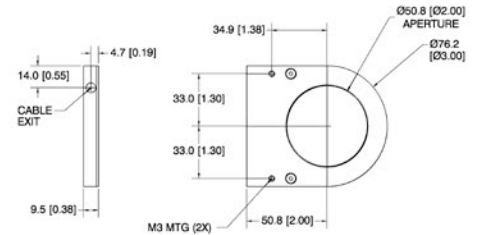
- Make textured surfaces appear bright
- Emphasize elevation changes
- Reading laser-etched symbologies
- Inspecting surfaces with geometric contours
- Label inspection applications
- BGA ball placement

# NERLITE® DARK FIELD SPECIFICATIONS AND OPTIONS

## DF 50

DESCRIPTION	TYPE	nm/K	CONT. CURRENT	mcd/cm <sup>2</sup>
DF-50, Red Continuous	NON-DIFFUSE	660 nm	69 mA	6250
DF-50, White Continuous	NON-DIFFUSE	6500 K	120 mA	7000

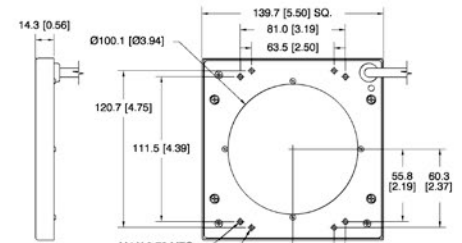
**Aperture Diameter:** 2" (51 mm) **Field of View:** 0.70" (18 mm)  
**Stand Off:** 0.30" (8 mm) **Weight:** 5 oz. (136 g)  
**Dimensions:** H 0.38" (9.5 mm) x W 3" (76.2 mm) x D 3.5" (88.9 mm)



## DF 100

DESCRIPTION	TYPE	nm/K	CONT. CURRENT	mcd/cm <sup>2</sup>
DF-100, Red Continuous	NON-DIFFUSE	636 nm	100 mA	760
DF-100, Red Continuous	DIFFUSE	636 nm	100 mA	400

**Aperture Diameter:** 3.9" (100 mm) **Field of View:** 2" (51 mm)  
**Stand Off:** 0.50" (13 mm) **Weight:** 9 oz. (256 g)  
**Dimensions:** H 0.56" (14.2 mm) x W 5.5" (139.7 mm) x D 5.5" (139.7 mm)

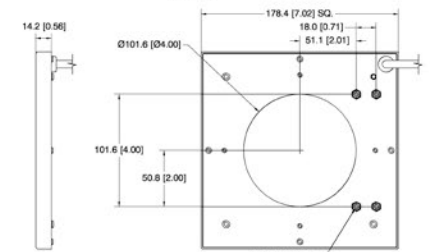


## DF 150

LEDs = 1 ROW

DESCRIPTION	TYPE	nm/K	CONT. CURRENT	mcd/cm <sup>2</sup>
DF-150-1, Red Continuous	NON-DIFFUSE	636 nm	100 mA	340
DF-150-1, White Continuous	NON-DIFFUSE	6500 K	196 mA	700
DF-150-1, Red Continuous	DIFFUSE	636 nm	100 mA	410
DF-150-1, White Continuous	DIFFUSE	6500 K	196 mA	380

**Aperture Diameter:** 4" (102 mm) **Field of View:** 3" (76 mm)  
**Stand Off:** 0.50" (13 mm) **Weight:** 18 oz. (504 g)  
**Dimensions:** H 0.56" (14.2 mm) x W 7.02" (178.4 mm) x D 7.02" (178.4 mm)

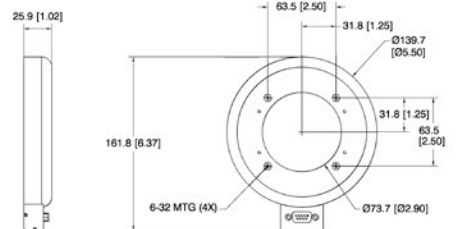


## DF 150

LEDs = 3 ROWS

DESCRIPTION	TYPE	nm/K	CONT. CURRENT	mcd/cm <sup>2</sup>
DF-150-3, Red Continuous	NON-DIFFUSE	636 nm	300 mA	2290
DF-150-3, White Continuous	NON-DIFFUSE	6500 K	450 mA	3540

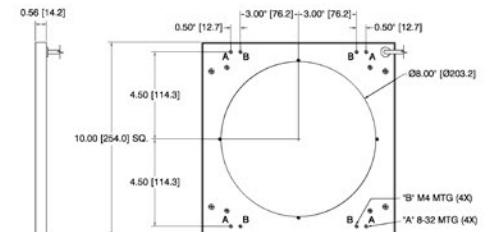
**Aperture Diameter:** 2.9" (74 mm) **Field of View:** 1.5" (38 mm)  
**Stand Off:** 0.50" (13 mm) **Weight:** 7 oz. (193 g)  
**Dimensions:** H 1.02" (25.9 mm) x W 5.5" (139.7 mm) x D 6.37" (161.8 mm)



## DF 200

DESCRIPTION	TYPE	nm/K	CONT. CURRENT	mcd/cm <sup>2</sup>
DF-200, Red Continuous	DIFFUSE	636 nm	200 mA	170

**Aperture Diameter:** 8" (203 mm) **Field of View:** 3.9" (100 mm)  
**Stand Off:** 0.50" (13 mm) **Weight:** 20 oz. (567 g)  
**Dimensions:** H 0.56" (14.2 mm) x W 10" (254 mm) x D 10" (254 mm)



## ENVIRONMENTAL

**Operating Temperature:** 0° to 40° C (32° to 104° F)  
**Storage Temperature:** 0° to 50° C (32° to 122° F)  
**Humidity:** up to 95% (non-condensing)

## LIGHTING PARAMETERS

**Aperture Diameter Defined:** Diameter of opening through the illuminator.  
**Field of View Defined:** Largest recommended evenly illuminated area as seen from the camera (also known as Area of Interest [AOI]).  
**Stand Off Defined:** Recommended distance between the bottom of the light and the surface of the object being illuminated.

## LIGHT SOURCE

**Type:** High output LEDs  
**Light Output:** Millicandelas per square centimeter (mcd/cm<sup>2</sup>)  
**Expected Life:** 50,000 hours (Red LEDs)  
**Expected Life:** 10,000 hours (White LEDs)  
**Eye Safety:** EN 60825-1: Class 1 (Red, White LEDs)

## CONNECTOR

**Type:** 15 ft. (4.5 m) integrated cable with flying leads  
**Type (DF-150-3 Models Only):** DB9 male panel mount, 15 ft. (4.5 m) DB9 female to flying leads cable included

## ELECTRICAL

**Power:** 24 VDC +/- 1%

## CE COMPLIANT

## ISO CERTIFICATION

Certified ISO 9001:2008 Quality Management System

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Microscan Applications Engineering is available to assist with evaluations.

Results may vary depending on symbol quality.

**Warranty:** For current warranty information on this product, please visit

[www.microscan.com/warranty](http://www.microscan.com/warranty).



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