



NLS-FM510-V



NLS-FM510-H

## NLS-FM510 SERIES

### FIXED MOUNT BARCODE SCANNER

The NLS-FM510 series products are 1D linear barcode scanners for medical applications, mainly integrated into testing instruments in laboratories, hospitals and assembly lines. It delivers fast and reliable reading of 1D printed barcodes on short-distance test tubes or reagent bottles. The NLS-FM510 series includes NLS-FM510-V (lateral beam exit) and NLS-FM510-H (front beam exit), distinguished by the direction of the beam exit.

The NLS-FM510 series are mainly applied in IVD instruments, such as a rotating tube, one-circle turntables and one-row tube holders.

### FEATURES

- **Ultra-High Scan Speed and Motion Tolerance**  
780 scans per second.  
Suitable for IVD instruments fast putting in and high speed turntables.
- **Specialized Algorithm**  
Optimized decoding algorithm for the medical industry.  
Minimize reading errors with high decoding accuracy.
- **Ultra-Compact Design**  
This miniature barcode scanner is easily integrated into the stand-alone equipment.
- **IP54-Sealed Housing**  
The housing is sealed to an IP54 rating, durable and secure.
- **Wide Voltage Input**  
Support voltage ranges from 5 to 24VDC.
- **Near-Field Reading**  
Excellent far-field reading enables short-distance scanning up to one to three rows or one-circle turntable.
- **Wide Viewing Angle**  
Wide scan range for near-field reading.



1D Barcode



RS232



IVD



IP sealing

# NLS-FM510 Series

## Performance

Image Sensor		2500 CCD
Illumination		615nm red LED
Field of View		68°
Beam Exit	FM510-V	Scan window with lateral beam exit
	FM510-H	Scan window with front beam exit
Scan Speed		780 scans/s
Depth of Field <sup>1</sup>	FM510-V	15-95mm
	FM510-H	25-105mm
Resolution		≥6mil
Symbologies	1D	Codabar, Code 128, EAN-13 Addendum, Code 39, Code 93, GSI-128 (UCC/EAN 128), EAN-8, EAN-13, UPC-A, UPC-E, Interleaved 2/5
Min. Symbol Contrast		25%

## Physical

Operating Voltage		5-24VDC±5%
Rated Power Consumption		< 3W
Current@5VDC	Operating	264mA RMS (typical)    850mA (max.)
Current@24VDC		65mA RMS (typical)    250mA (max.)
Interface		RS-232
Notification		LED indicator
Housing		Plastic
Dimensions	FM510-V	62.5(W)×57(D)×21.5(H)mm (max.)
	FM510-H	62.5(W)×50.5(D)×21.5(H)mm (max.)
Weight		120g

## Environmental

Operating Temperature	0°C to 50°C (32°F to 122°F)
Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Humidity	5% to 95% (non-condensing)
Sealing	IP54
Ambient Light	≤5000lux

## Certificates

Certificates & Protection	CE/FCC/UL IEC62471: 2006 for LED safety RoHS 2.0
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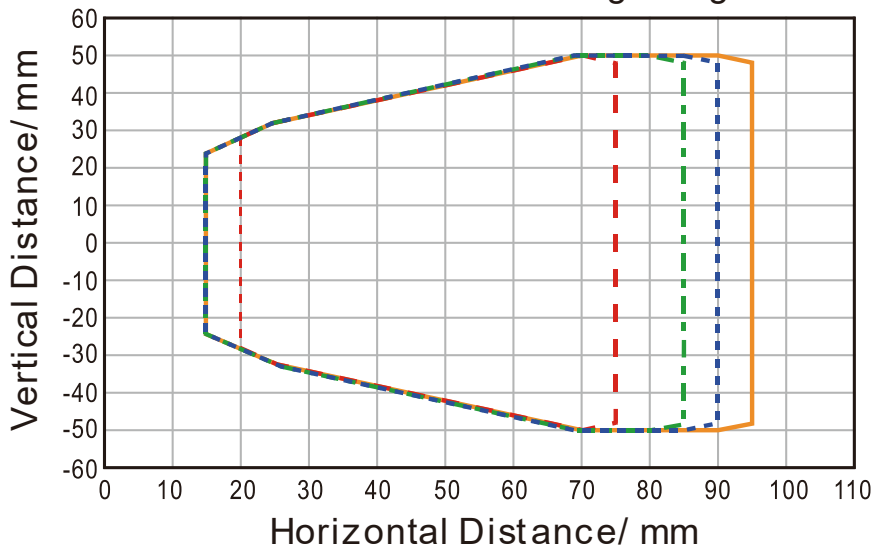
<sup>1</sup> For depth of field based on resolutions, please refer to Scanning Range.

Specifications are subject to change without notice.

Version: V1.1

# NLS-FM510 Series

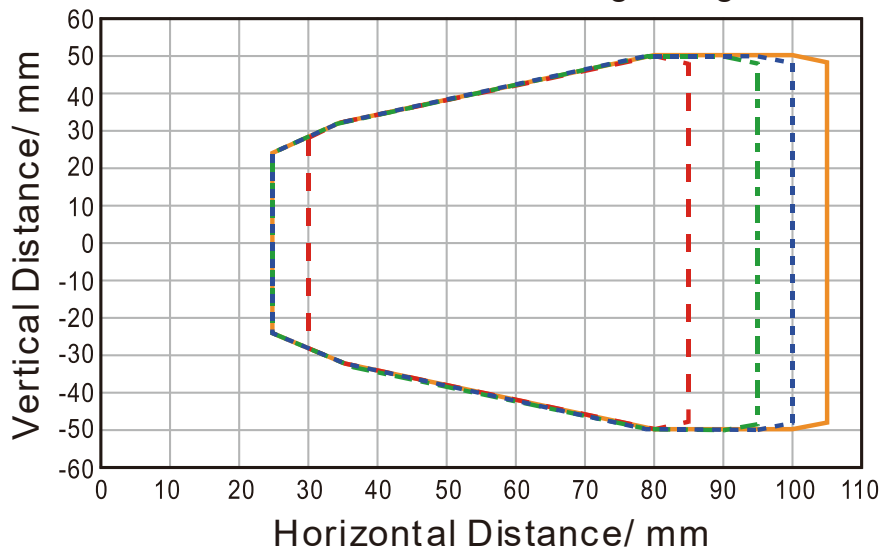
NLS-FM510-V Scanning Range



**Code 128  
Grade A**

- - - 6.67mil
- - - 8.34mil
- - - 10mil
- 13.34mil-20mil

NLS-FM510-H Scanning Range



**Code 128  
Grade A**

- - - 6.67mil
- - - 8.34mil
- - - 10mil
- 13.34mil-20mil

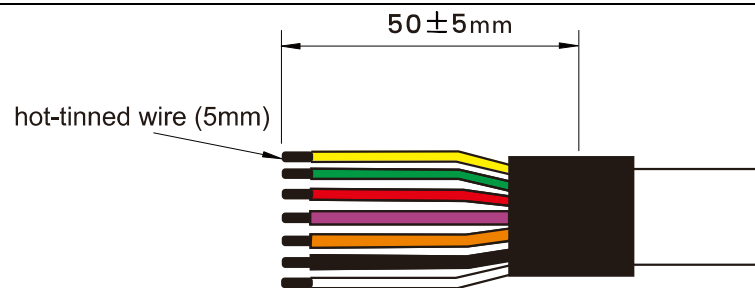
# NLS-FM510 Series

The following table lists the interface pinouts.

Wire Color	Signal	I/O	Function
Red	5-24VDC	Power supply	Power supply
Orange	SW IN	I	Switching input
Purple	GND	Power supply	Power supply ground
Black	SW OUT	O	Switching output
White	RS-232 RXD	I	RS-232 Input
Green	RS-232 TXD	O	RS-232 Output
Yellow	FE/Shield	Power supply	Shield

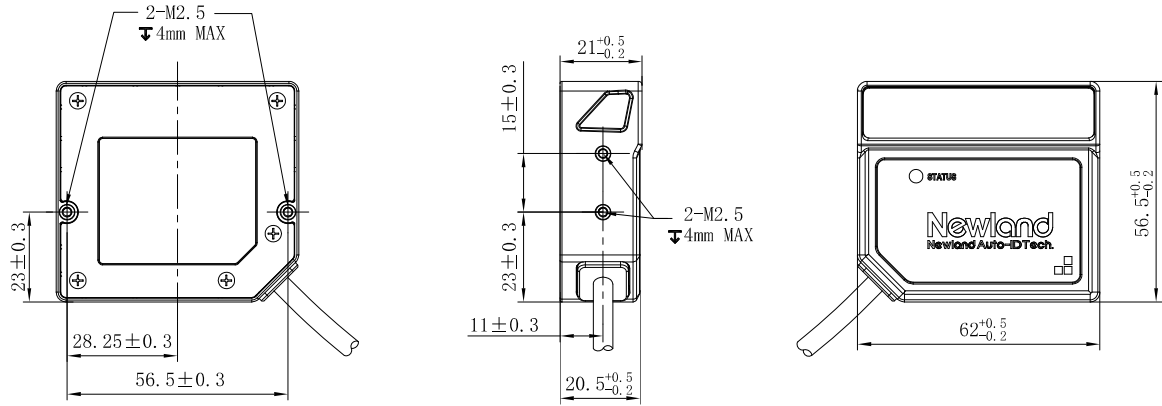
## Interface

### Pinouts

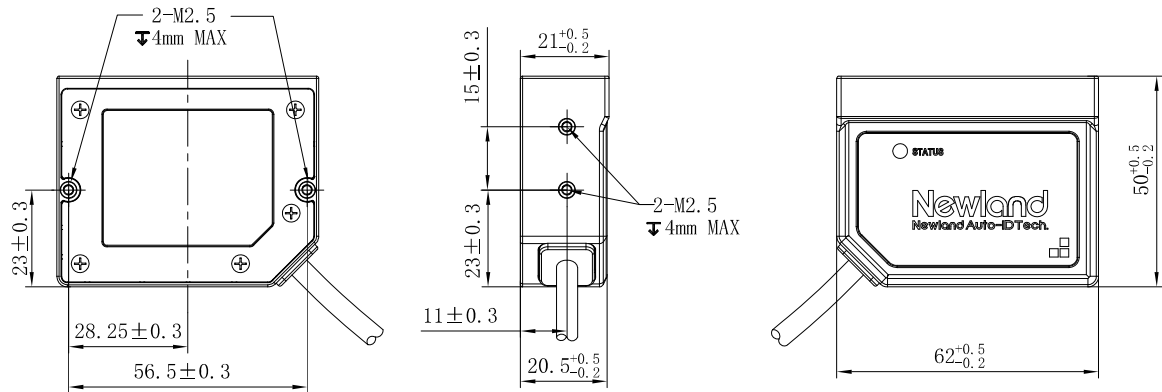


# NLS-FM510 Series

Mechanical  
Mounting  
Dimensions  
(unit: mm)



Dimensions: 62.5(W)×57(D)×21.5(H)mm (max) (FM510-V)



Dimensions: 62.5(W)×50.5(D)×21.5(H)mm (max) (FM510-H)

Specifications are subject to change without notice.

Version: V1.1

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