

# inspec.x L 5.6/105 VIS-NIR 1x



For large format high-resolution sensors optimized for VIS and NIR sensitivity

The new VIS-NIR lens series from Excelitas sets standards in the field of visual and non-visual inspection. Developed for long line and large area sensors, it offers an incredibly good apochromatic design. Ultra-sharp and high-contrast images can be created at a wide range of different wavelengths from 400 to 1150nm without having to refocus. The diffraction-limited design impresses with extreme performance across the entire object field, so that optimal results can also be achieved at the edges.

The new inspec.x VIS-NIR series comes with four different lenses that are optimized for different magnifications and are equipped with the established V-groove interface.

Every version of this new series matches the Excelitas Modular Focus System and scores with flexibility and modularity.

## Your Benefits

VIS-NIR correction without refocus

Apo-chromatically corrected

Ready for Mult- and Hyperspectral Imaging

SWIR Option

Diffraction limited design

Ultra-high resolution for large area and line sensors

## Applications

PCB inspection

Print inspection

Surface inspection

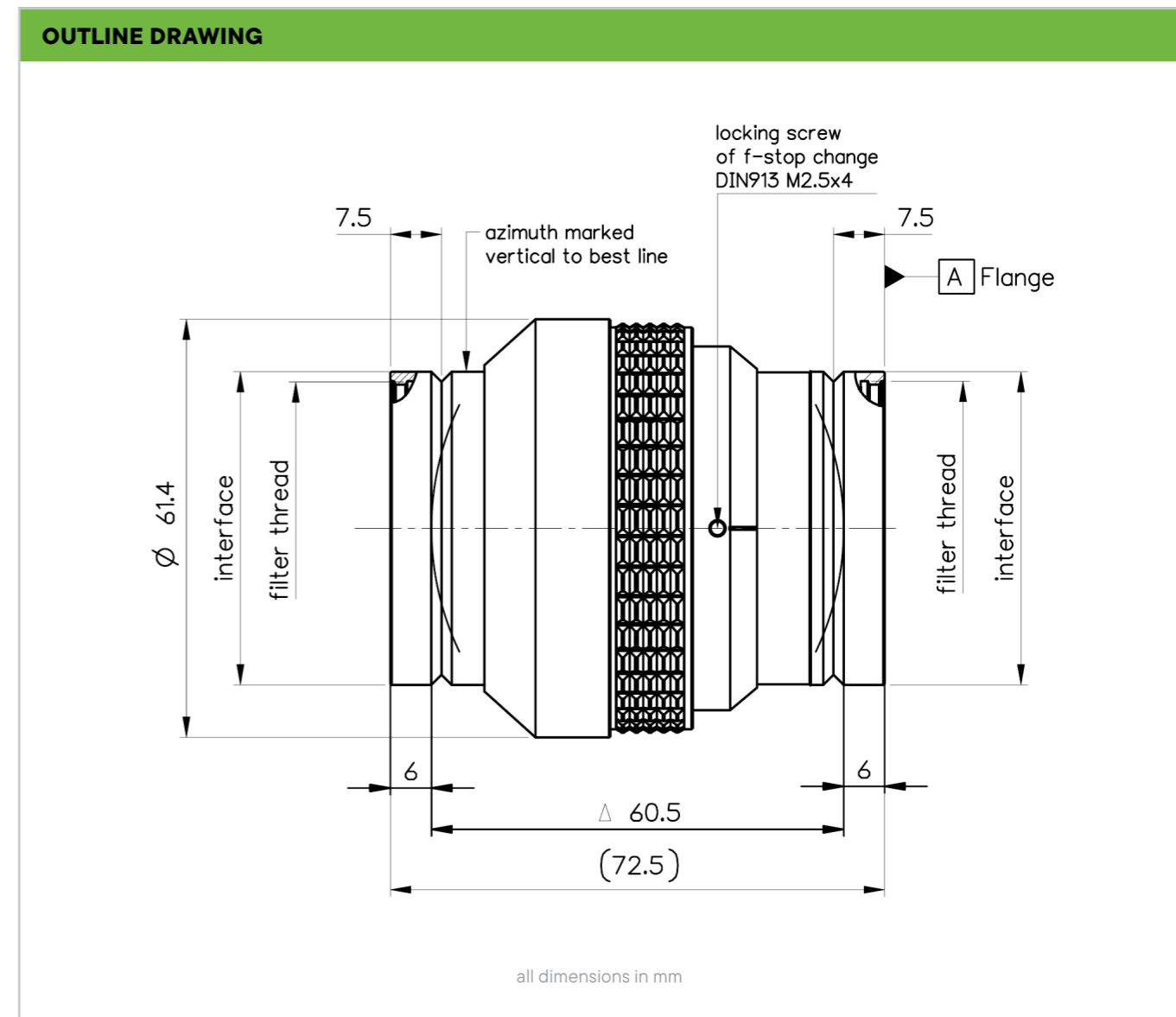
Waste inspection

Battery inspection

Food inspection

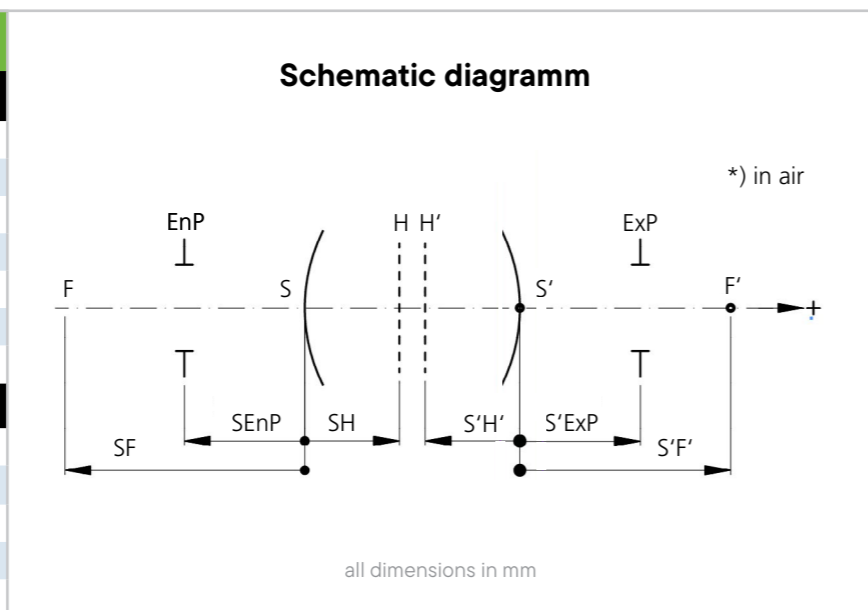


TECHNICAL SPECIFICATIONS	
<b>Part NO.</b>	<b>0703-082-000-30</b>
focal length [mm]	105.4
f-stop	5.6
f-stop range	5.6 ... 22
f-stop lockable	yes, locking screw
Numerical aperture (object/image)	0.09/0.09
Image circle max. [mm]	82
Magnification optimized	1
Rec. magnification range	0.85 ... 1.2
Rec. working distance [mm]	153 ... 190
Spectral range [nm]	400 - 1150
Azimuth marked	yes
Interface	V-groove $\varnothing 46h7$
Filter thread	M43 x 0.75
Length [mm]	72.5
Diameter [mm]	61.4
Weight [g]	370
Storage temperature [°C]	-25 ... +70
Working temperature [°C]	0 ... +50
Optical number	7608-9011
Design includes sensor cover glass	yes, 0.76mm D263



### Optical data

PART NO. 0703-082-000-30		
SF [mm]	-71.4	
S'F' *) [mm]	71.4	
HH' *) [mm]	-7.5	
SH *) [mm]	34.0	
S'H' [mm]	-34.0	
SEnP [mm]	34.1	
S'Exp *) [mm]	-34.0	
F-STOP	$\varnothing$ ENP	$\varnothing$ EXP
5.6	18.8	18.8
8	13.2	13.2
11	9.6	9.6
16	6.6	6.6
22	4.8	4.8



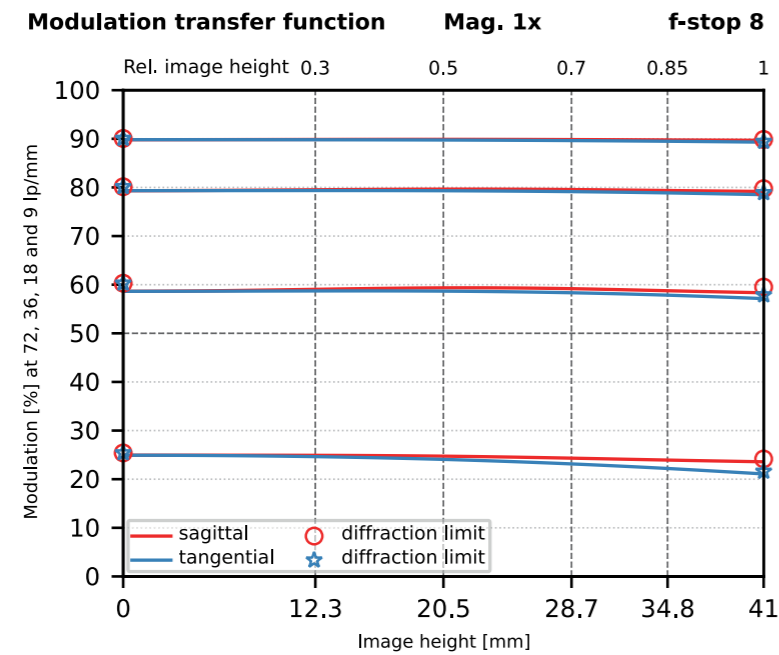
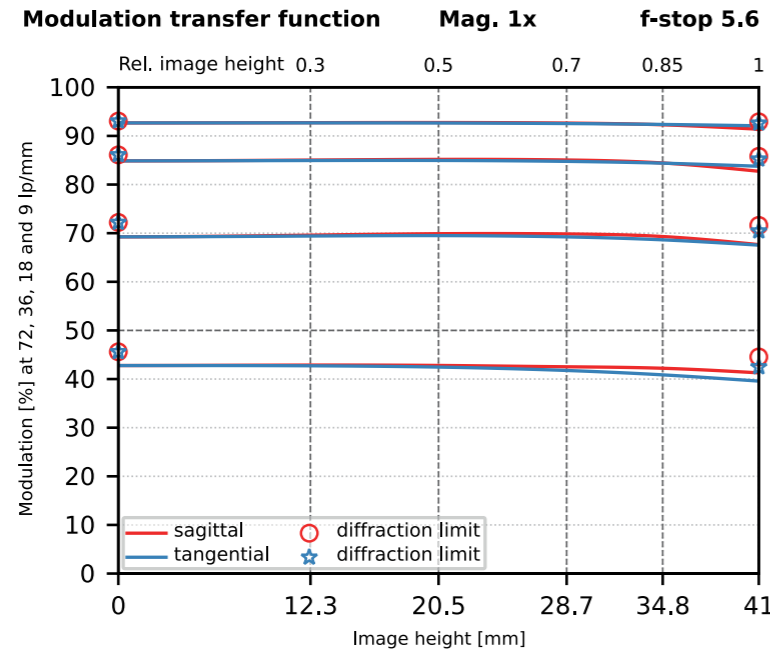
For further information about our inspec.x L series, please scan or click the QR-Code.



## SPECTRAL DISTRIBUTION

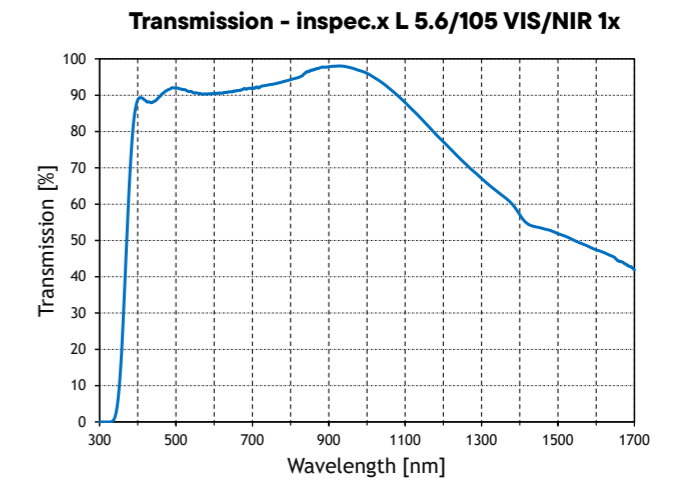
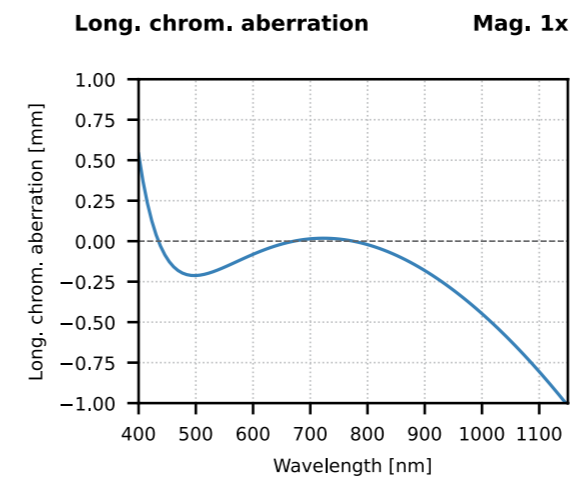
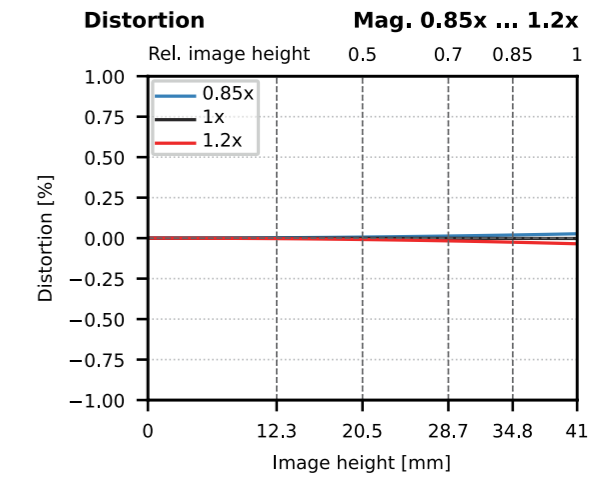
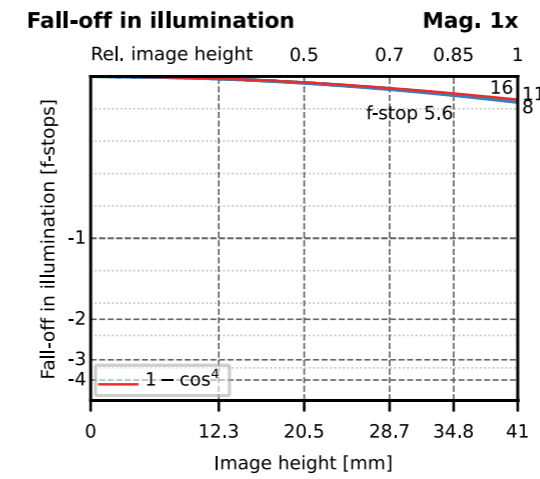
Wavelength [nm]	438	474	510	534	558	582	606	642	678
Weight [%]	2.0	10.8	50.3	90.5	99.8	84.9	55.4	16.0	1.9

## OPTICAL PERFORMANCE



All spatial frequencies [lp/mm], image heights [mm] and magnifications are related to sensor side.

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Mechanical accessories, including helical focus mounts, adapters and extension tubes are described @ [excelitas.com/product/linos-machine-vision-accessories](https://www.excelitas.com/product/linos-machine-vision-accessories)



# MACHVIS

## Lens Selection and Configurator Software



ACCESS FOR FREE!

For further information about our Lens Selection Software MachVis and MachVis OnLine, please scan or click the QR-Code.



The screenshot displays the MachVis OnLine web application interface. On the left, there are input fields for 'Object Distance' (set to 160 mm), 'Object Size' (set to 45 mm), and 'Image [sensor] size' (set to 35 mm). Below these are 'Standard Sensor Value' (Full Height: 29 mm, Full Width: 38 mm) and 'Camera Adapter Type' (set to F-Mount/Nikon, Camera Body Depth: 48.5 mm). The main area features a table with the following data:

#	Lens Name	Focus Device	Ext	Lens EFL	Total W.D.	Free W.D.	Object Size	Image Size	Mag. Value	Mag. Range
	Theory			78.5mm	314.0mm	160.00mm	45.0mm	43.3mm	-0.962x	
1	Apo Rodagon D 1x	Modular Focus	1	74.9mm	285.4mm	117.2mm	45.0mm	43.3mm	-0.962x	-1.2 to -0.8
2	Apo Rodagon D 1x	Smart Focus	2	74.9mm	285.4mm	117.2mm	45.0mm	43.3mm	-0.962x	-1.2 to -0.8

Below the table, a 'Solution 1 Lens: Apo Rodagon D 1x [0703-005-000-40]' is detailed with technical specifications: [H: 12.9mm LA: 3.7mm Ext: 60.0mm Foc: 15.8-40.8mm CA: 3.7mm CBD: 46.5mm] Flange FD Range: 126.7-151.7mm. A 'Summary' checkbox is present. The 'COMPONENTS DRAWING' section shows three parts: 'Lens Adapter 2408-009-118-00', 'Extension Tube [1x] 2408-009-123-00', and 'Camera Adapter 2408-009-142-00'. The bottom navigation bar includes 'SPECIFICATIONS', 'RESULTS', 'SCHEMATIC SYSTEM DRAWING', 'COMPONENTS DRAWING' (highlighted), and 'PROJECT NOTES'.

MachVis Online: Example of the user face

