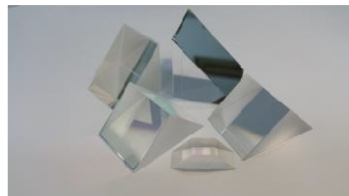
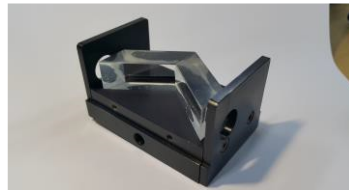


# F-theta Lens Catalog



**SP SPECTRAL PRODUCTS**

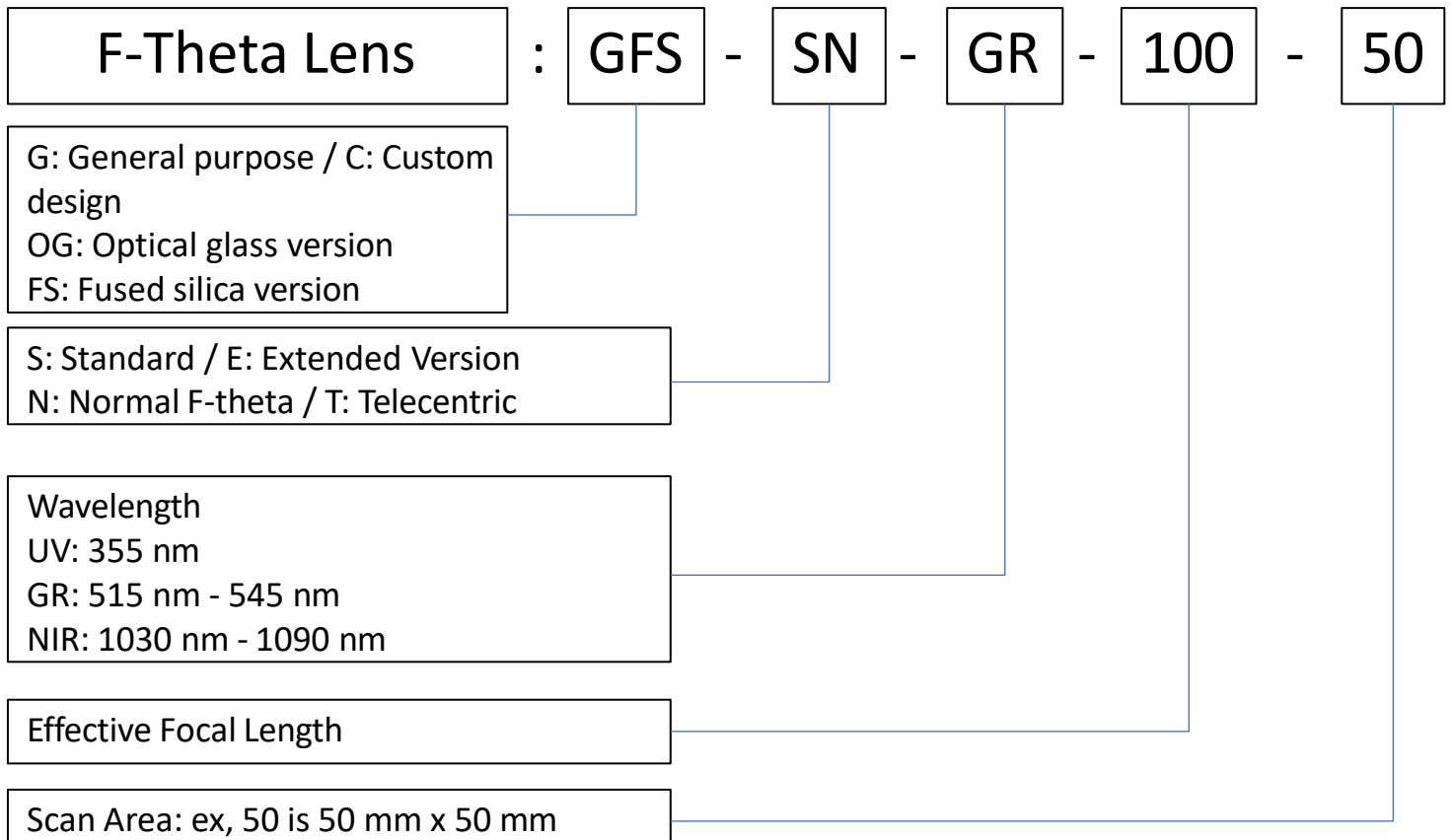
TEL: 1-860-928-5834

FAX: 1-860-928-2676

EMAIL: [optics@spectralproducts.com](mailto:optics@spectralproducts.com)

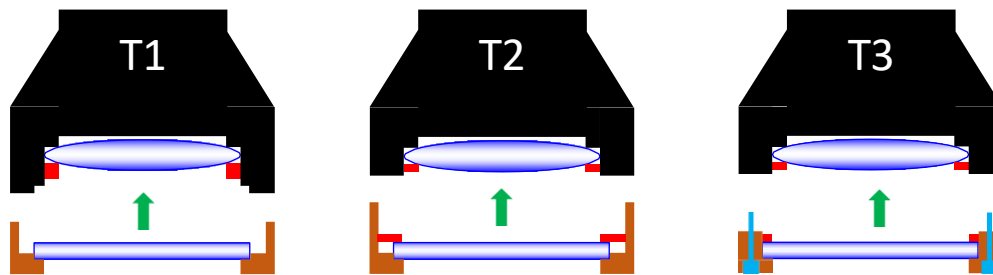
WEB: <https://optics.spectralproducts.com>

# F-theta Lens Selection Guide



- Extended version was developed by the needs of the customers.

## Mount Selection



Type	Feature
T1	<ul style="list-style-type: none"> <li>- Minimized product size.</li> <li>- No need retainer wrench.</li> <li>- Do not turn the window housing over, as the window can fall freely.</li> </ul>
T2	<ul style="list-style-type: none"> <li>- <b>The most popular type.</b></li> <li>- Improved safety by mounted window to the window housing.</li> </ul>
T3	<ul style="list-style-type: none"> <li>- Easy separation of window housing using bolts.</li> <li>- Bigger product size.</li> </ul>

## UV Product list

Model name	Max. Input beam diameter	Working distance	Page number
GFS-ST-UV-109-63	6.0 mmØ	140.16 mm	4 page
GFS-ST-UV-135-75	10.0 mmØ	187.20 mm	6 page
GFS-ST-UV-163-90	10.0 mmØ	219.79 mm	8 page

## Green Product list

Model name	Max. Input beam diameter	Working distance	Page number
GFS-ST-GR-160-55	30.0 mmØ	216.72 mm	10 page
GFS-ST-GR-254-100	30.0 mmØ	334.67 mm	12 page

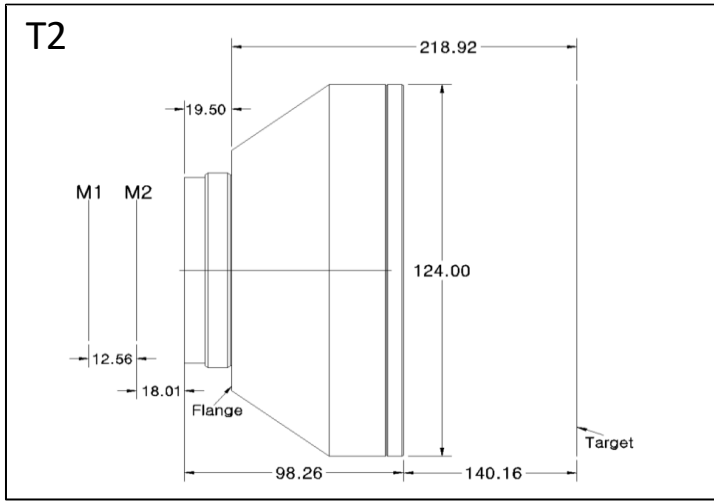
# NIR Product list

Model name	Max. Input beam diameter	Working distance	Page number
<b>Optical glass model</b>			
GOG-SN-NIR-160-106	12.0 mmØ	175.72 mm	14 page
GOG-SN-NIR-254-180	17.2 mmØ	290.00 mm	16 page
GOG-SN-NIR-420-300	20.0 mmØ	465.53 mm	18 page
<b>Fused silica model</b>			
GFS-ST-NIR-160-75	20.0 mmØ	209.52 mm	20 page
GFS-ST-NIR-254-40	12.0 mmØ	255.42 mm	22 page
GFS-ST-NIR-254-85	20.0 mmØ	320.42 mm	24 page
GFS-ST-NIR-254-108	30.0 mmØ	338.30 mm	26 page
GFS-ST-NIR-254-120	20.0 mmØ	330.62 mm	28 page
GFS-ST-NIR-254-160	20.0 mmØ	328.73 mm	30 page
GFS-ST-NIR-330-165	30.0 mmØ	418.05 mm	32 page
GFS-ST-NIR-340-40	15.0 mmØ	281.08 mm	34 page
GFS-SN-NIR-340-200	20.0 mmØ	417.38 mm	36 page
GFS-SN-NIR-420-220	20.0 mmØ	511.45 mm	38 page

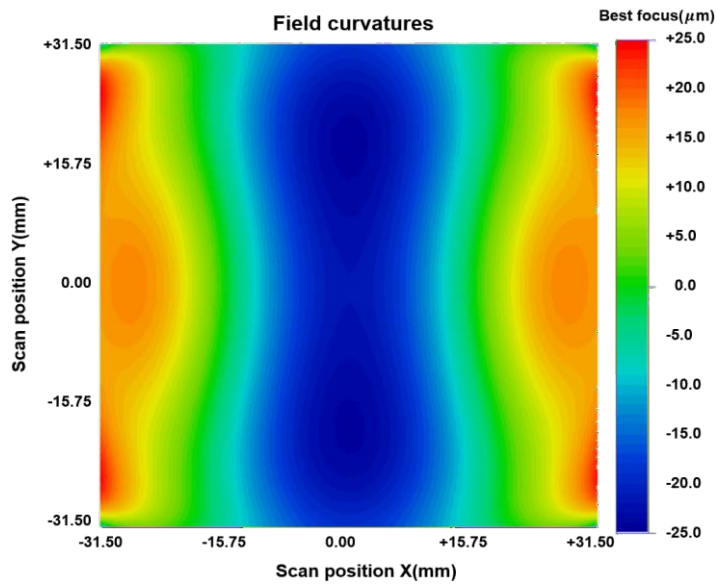
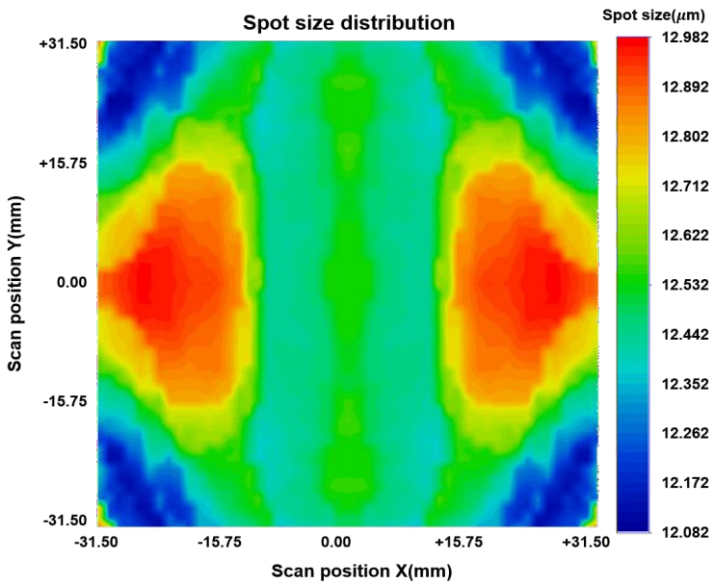
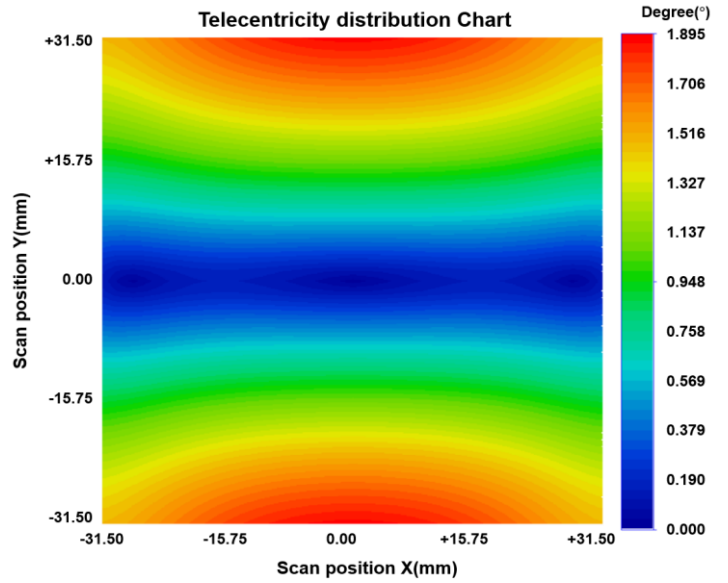
# GFS-ST-UV-109-63

Specifications	GFS-ST-UV-109-63
Design wavelength	355 nm
Effective focal length	109.0 mm
Max. Input beam diameter	6 mm $\emptyset$
Focus size diameter	11.9 $\mu$ m $\emptyset$
Diagonal Scan angle	$\pm 25.2^\circ$
Scan field	63 mm x 63 mm
A1(1 <sup>st</sup> mirror to 2 <sup>nd</sup> mirror distance)	12.56 mm
A2(2 <sup>nd</sup> mirror to Flange)	37.51 mm
Working distance	140.16 mm
Telecentricity	$< 1.9^\circ$
Flange-Focus	218.92 mm
Lens diameter	124.00 mm $\emptyset$
Lens length	98.26 mm
Mount	M85X1.0
Window	Mounted(PW2-109.0-3.0-UV-355-0)
Laser induced damage threshold(LIDT)	7.5 J/cm <sup>2</sup> , 20ns, 20Hz at 355 nm
Weight	T2 : 1.6 kg
Zemax Blackbox file is available.	

# GFS-ST-UV-109-63



- Layout is different from actual product, please refer to dimension only.
- Focal length tolerance :  $\pm 1.5\%$

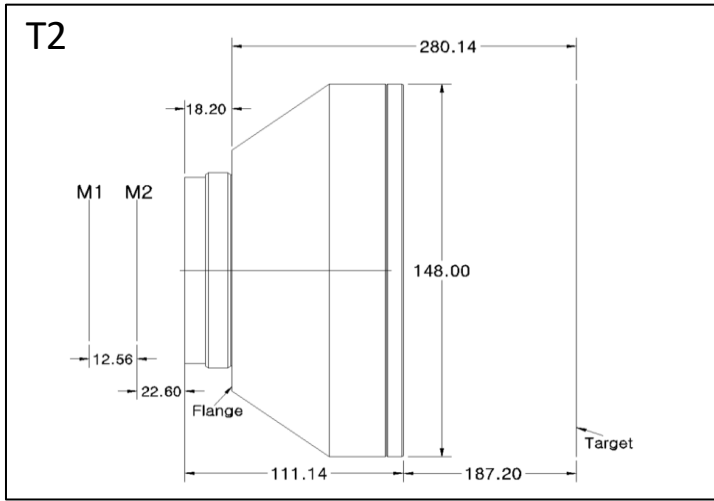


# GFS-ST-UV-135-75

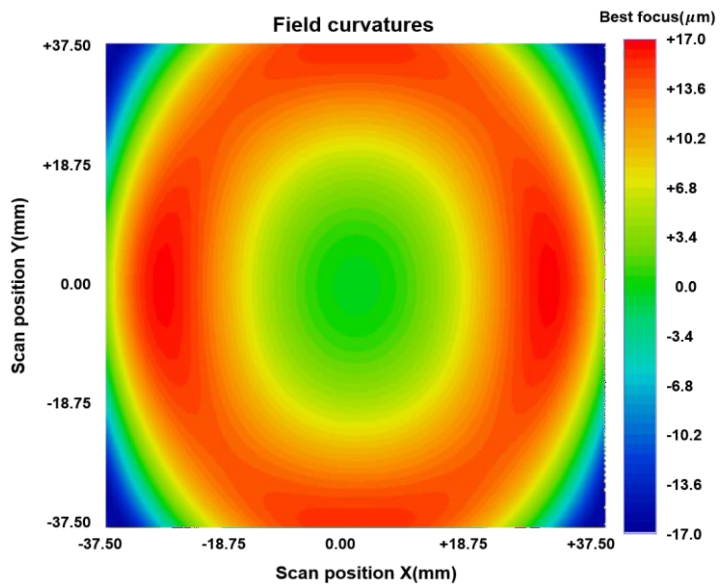
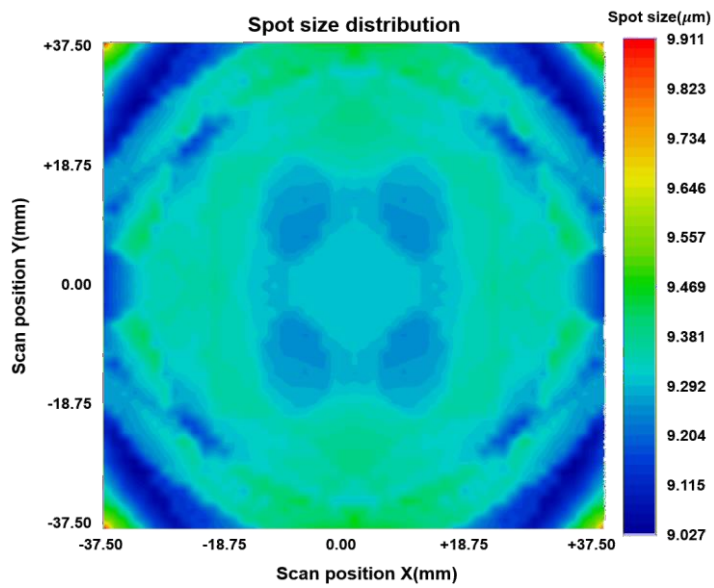
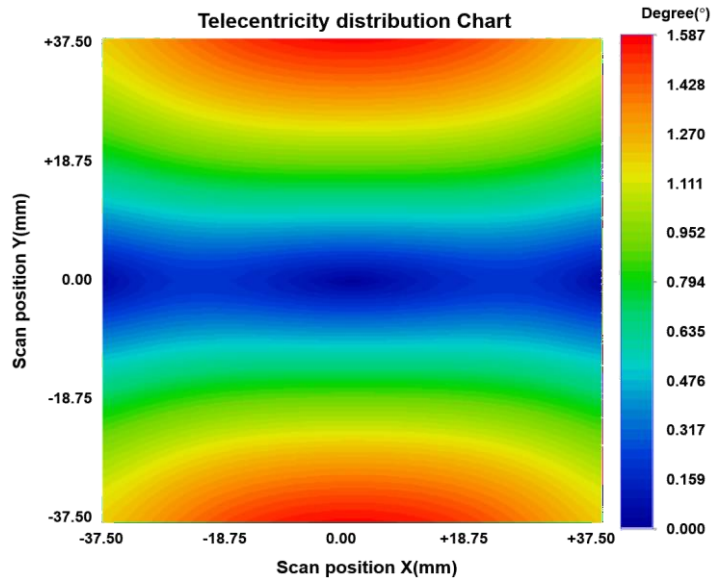
Specifications	GFS-ST-UV-135-75
Design wavelength	355 nm
Effective focal length	135.0 mm
Max. Input beam diameter	10 mm $\varnothing$
Focus size diameter	8.8 $\mu$ m $\varnothing$
Diagonal Scan angle	$\pm 24.0^\circ$
Scan field	75 mm x 75 mm
A1(1 <sup>st</sup> mirror to 2 <sup>nd</sup> mirror distance)	12.56 mm
A2(2 <sup>nd</sup> mirror to Flange)	40.80 mm
Working distance	187.20 mm
Telecentricity	$< 1.6^\circ$
Flange-Focus	280.14 mm
Lens diameter	148.00 mm $\varnothing$
Lens length	111.14 mm
Mount	M85X1.0
Window	Mounted(PW2-133.0-3.0-UV-355-0)
Laser induced damage threshold(LIDT)	7.5 J/cm <sup>2</sup> , 20ns, 20Hz at 355 nm
Weight	T2 : 2.4 kg

Zemax Blackbox file is available.

# GFS-ST-UV-135-75



- Layout is different from actual product, please refer to dimension only.
- Focal length tolerance :  $\pm 1.5\%$

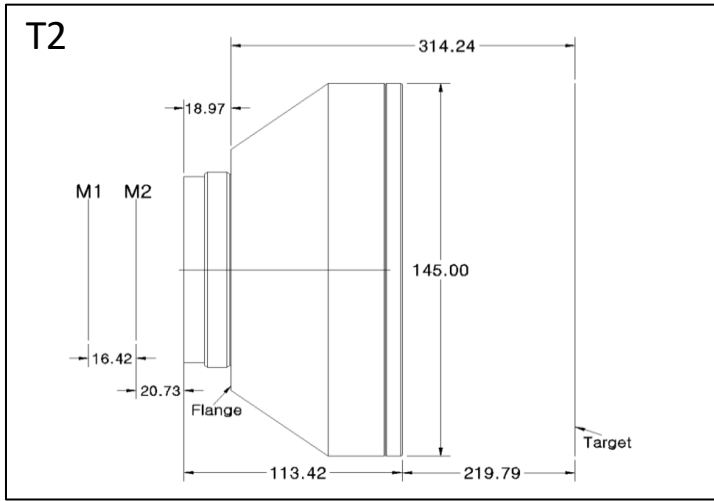




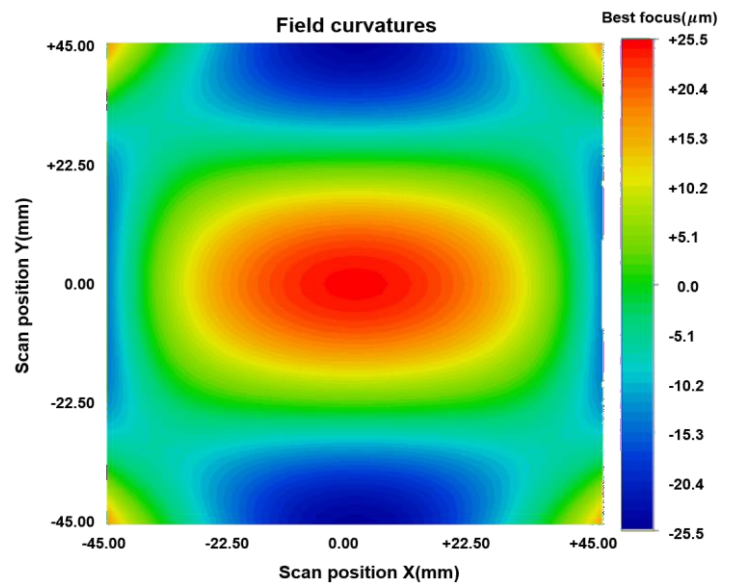
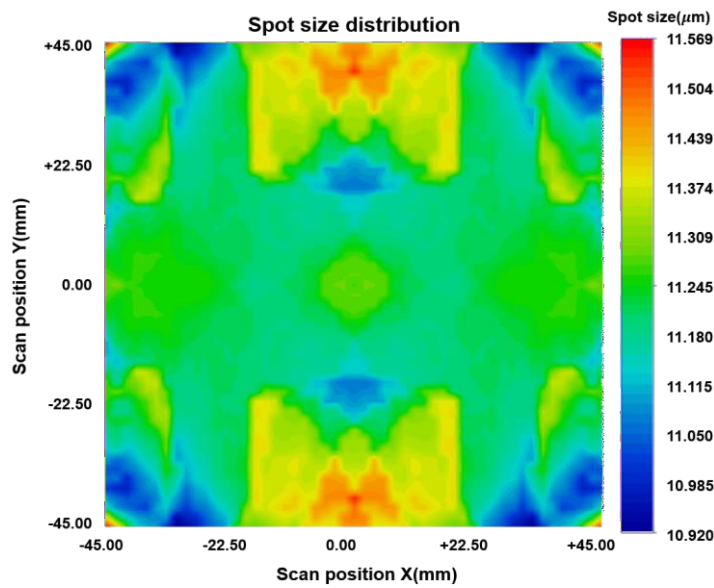
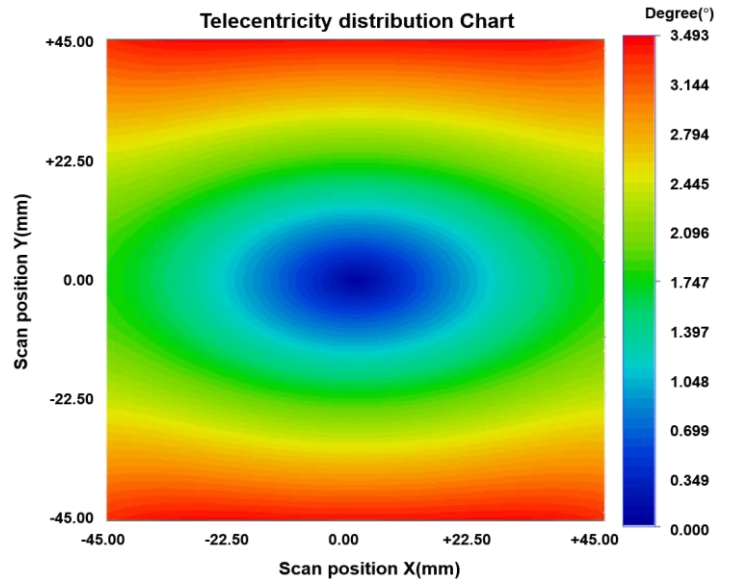
# GFS-ST-UV-163-90

Specifications	GFS-ST-UV-163-90
Design wavelength	355 nm
Effective focal length	163.4 mm
Max. Input beam diameter	10 mm $\varnothing$
Focus size diameter	10.7 $\mu$ m $\varnothing$
Diagonal Scan angle	$\pm 24.1^\circ$
Scan field	90 mm x 90 mm
A1(1 <sup>st</sup> mirror to 2 <sup>nd</sup> mirror distance)	16.42 mm
A2(2 <sup>nd</sup> mirror to Flange)	39.70 mm
Working distance	219.79 mm
Telecentricity	< 3.5 $^\circ$
Flange-Focus	314.24 mm
Lens diameter	145.00 mm $\varnothing$
Lens length	113.42 mm
Mount	M85X1.0
Window	Mounted(PW2-133.0-3.0-UV-355-0)
Laser induced damage threshold(LIDT)	7.5 J/cm <sup>2</sup> , 20ns, 20Hz at 355 nm
Weight	T2 : 2.3 kg / T3 : 2.7 kg
Zemax Blackbox file is available.	

# GFS-ST-UV-163-90



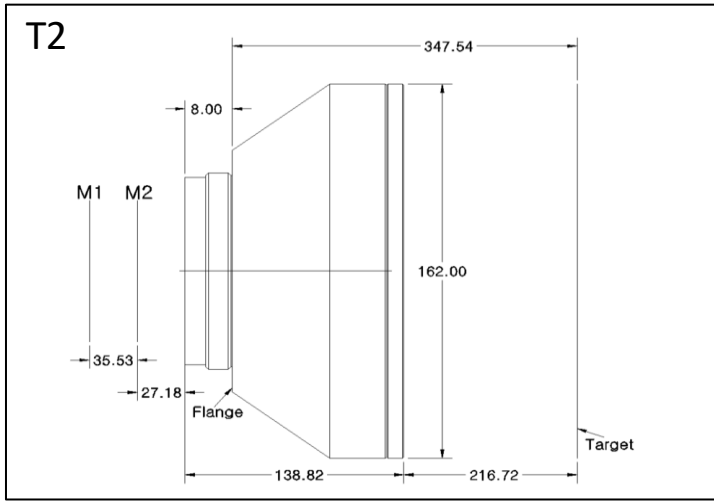
- Layout is different from actual product, please refer to dimension only.
- Focal length tolerance :  $\pm 1.5\%$



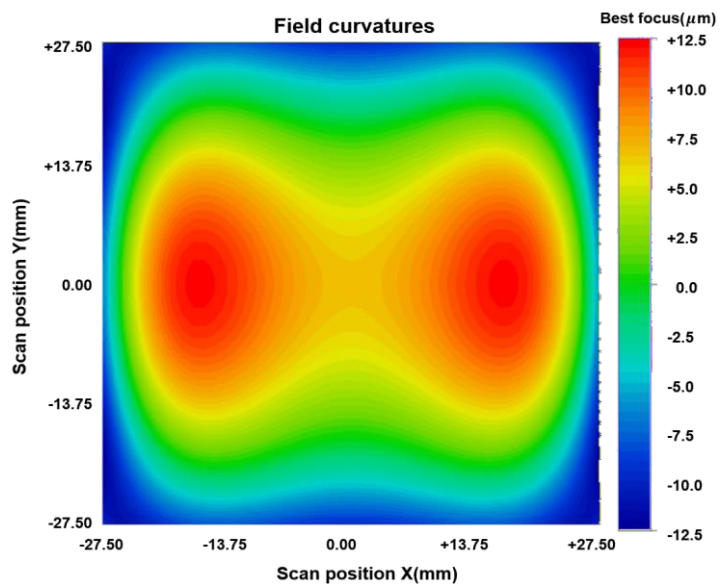
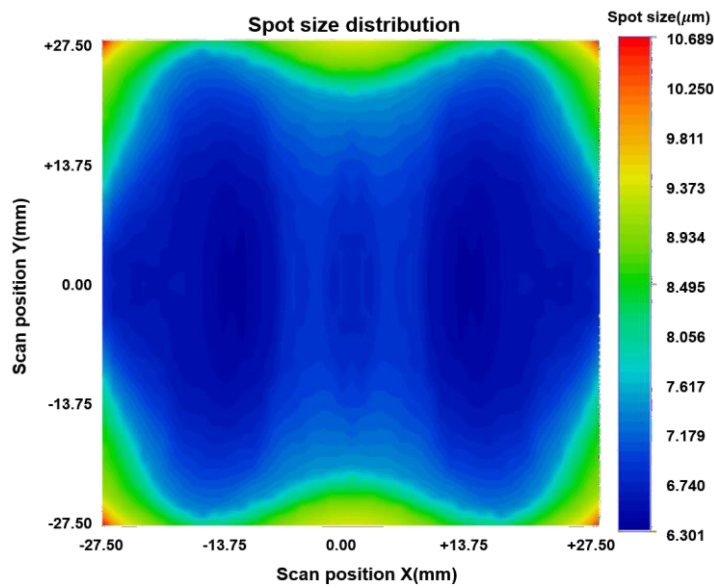
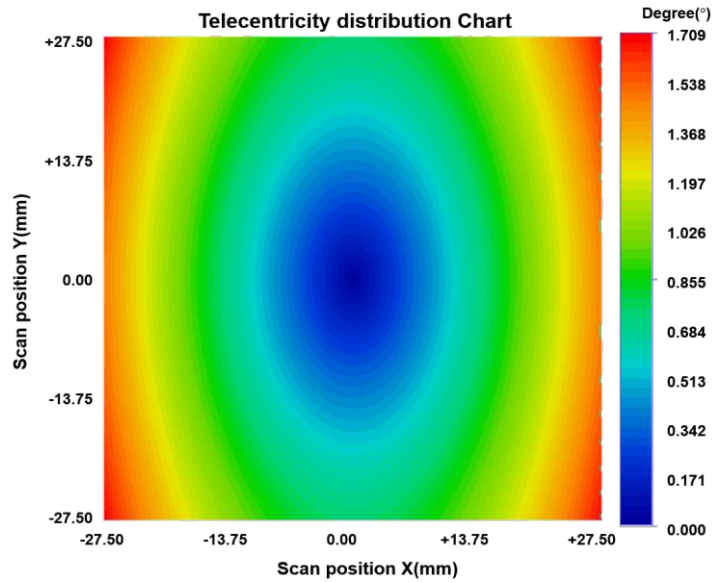
# GFS-ST-GR-160-55

Specifications	GFS-ST-GR-160-55
Design wavelength	515 nm
Effective focal length	160.0 mm
Max. Input beam diameter	30 mm $\emptyset$
Focus size diameter	5.2 $\mu$ m $\emptyset$
Diagonal Scan angle	$\pm 14.5^\circ$
Scan field	55 mm x 55 mm
A1(1 <sup>st</sup> mirror to 2 <sup>nd</sup> mirror distance)	35.53 mm
A2(2 <sup>nd</sup> mirror to Flange)	35.18 mm
Working distance	216.72 mm
Telecentricity	$< 1.8^\circ$
Flange-Focus	347.54 mm
Lens diameter	162.00 mm $\emptyset$
Lens length	138.82 mm
Mount	M85X1.0
Window	Mounted(PW2-149.0-3.0-UV-515-0)
Laser induced damage threshold(LIDT)	10 J/cm <sup>2</sup> , 20ns, 20Hz at 532 nm
Weight	T2 : 3.3 kg
Zemax Blackbox file is available.	

# GFS-ST-GR-160-55



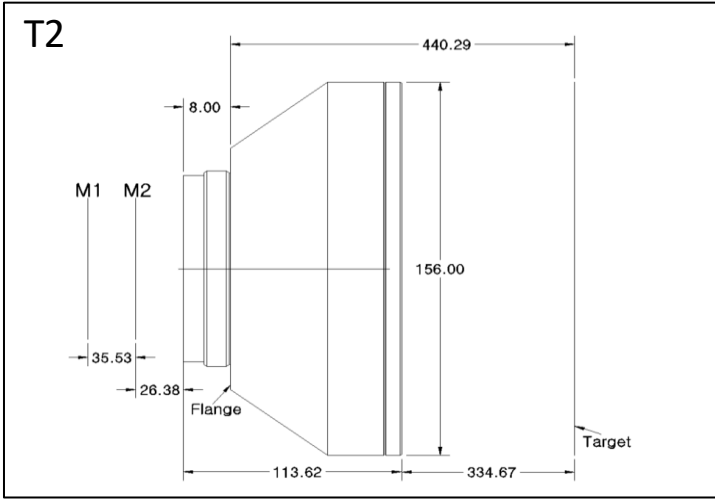
- Layout is different from actual product, please refer to dimension only.
- Focal length tolerance :  $\pm 1.5\%$



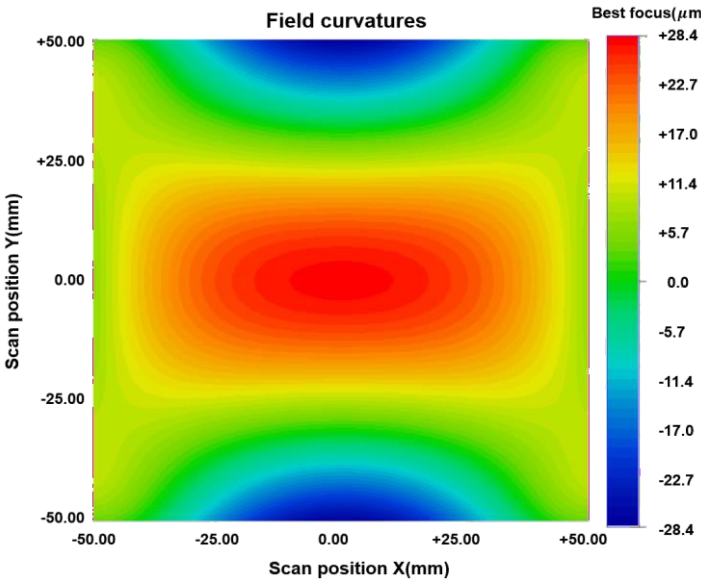
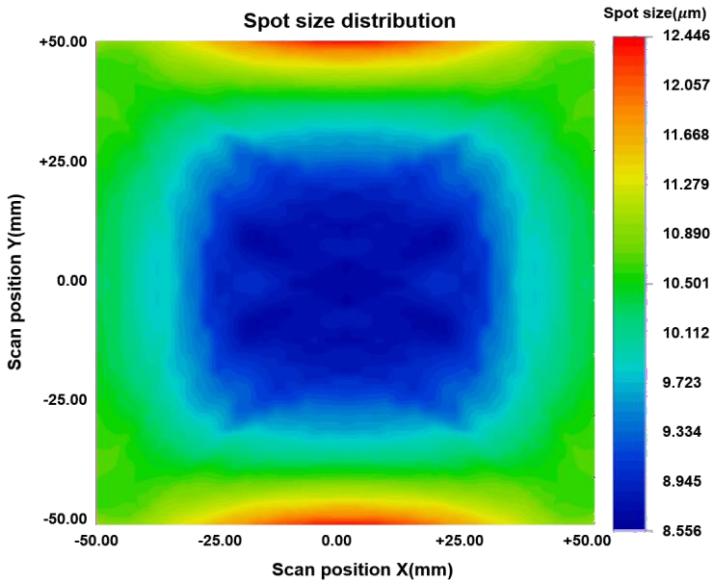
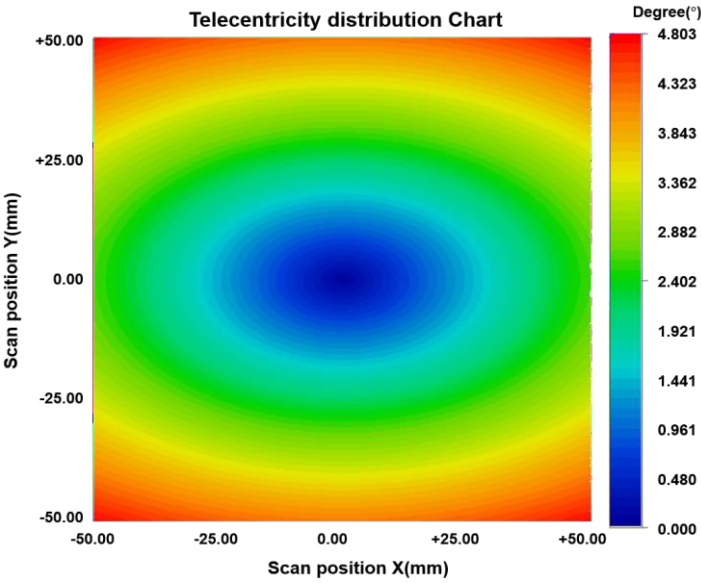
# GFS-ST-GR-254-100

Specifications	GFS-ST-GR-254-100
Design wavelength	515 nm
Effective focal length	254.0 mm
Max. Input beam diameter	30 mm $\varnothing$
Focus size diameter	8.3 $\mu$ m $\varnothing$
Diagonal Scan angle	$\pm 16.4^\circ$
Scan field	100 mm x 100 mm
A1(1 <sup>st</sup> mirror to 2 <sup>nd</sup> mirror distance)	35.53 mm
A2(2 <sup>nd</sup> mirror to Flange)	34.38 mm
Working distance	334.67 mm
Telecentricity	$< 4.9^\circ$
Flange-Focus	440.29 mm
Lens diameter	156.00 mm $\varnothing$
Lens length	113.62 mm
Mount	M85X1.0
Window	Mounted(PW2-143.0-3.0-UV-515-0)
Laser induced damage threshold(LIDT)	10 J/cm <sup>2</sup> , 20ns, 20Hz at 532 nm
Weight	T2 : 2.7 kg
Zemax Blackbox file is available.	

# GFS-ST-GR-254-100



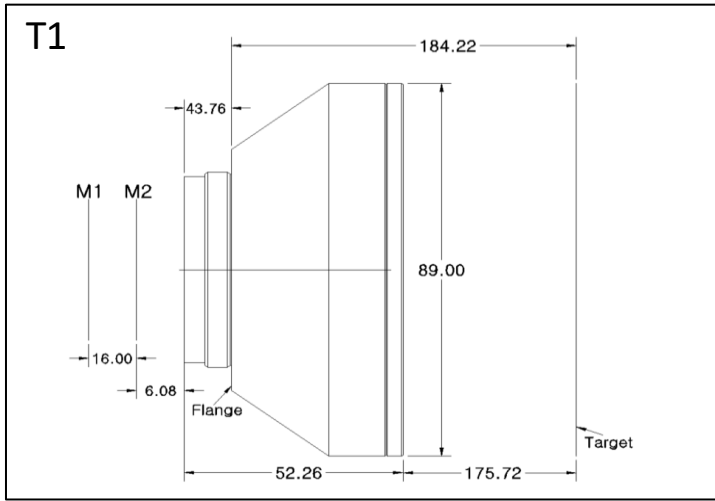
- Layout is different from actual product, please refer to dimension only.
- Focal length tolerance :  $\pm 1.5\%$



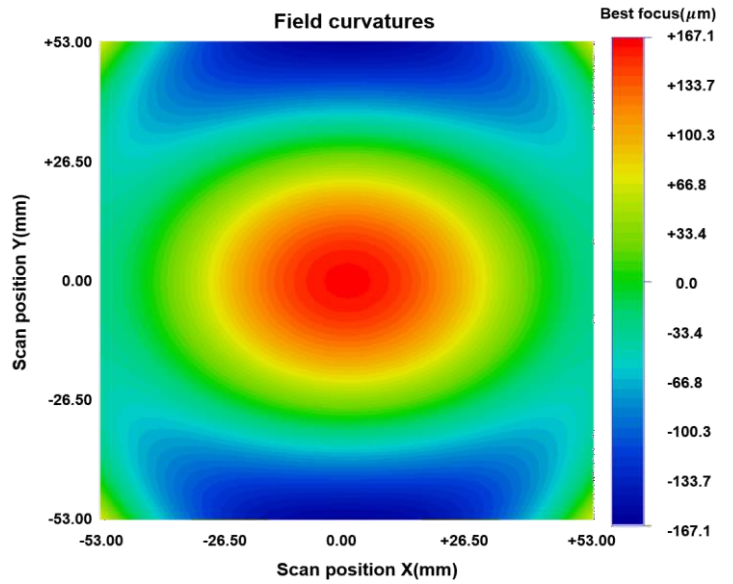
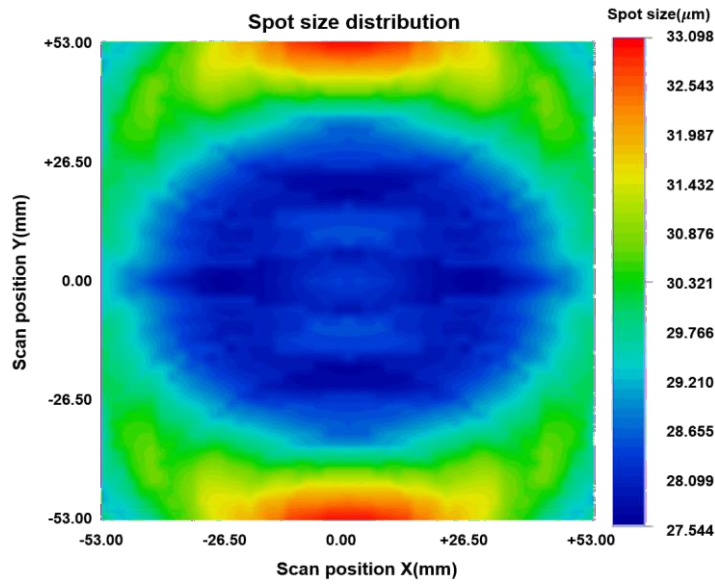
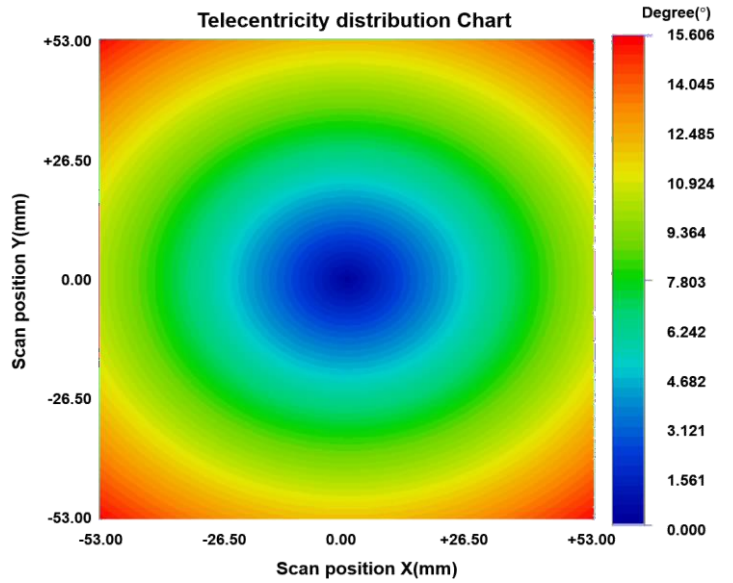
# GOG-SN-NIR-160-106

Specifications	GOG-SN-NIR-160-106
Design wavelength	1064 nm
Effective focal length	160 mm
Max. Input beam diameter	12 mm $\varnothing$
Focus size diameter	26.0 $\mu$ m $\varnothing$
Diagonal Scan angle	$\pm 26.8^\circ$
Scan field	106 mm x 106 mm
A1(1 <sup>st</sup> mirror to 2 <sup>nd</sup> mirror distance)	16 mm
A2(2 <sup>nd</sup> mirror to Flange)	49.84 mm
Working distance	175.72 mm
Telecentricity	$< 15.7^\circ$
Flange-Focus	184.22 mm
Lens diameter	89.00 mm $\varnothing$
Lens length	52.26 mm
Mount	M85X1.0
Window	Mounted(PW2-76.0-2.0-C-1064-0)
Laser induced damage threshold(LIDT)	15 J/cm <sup>2</sup> , 20ns, 20Hz at 1064 nm
Weight	T1 : 0.5 kg
Zemax Blackbox file is available.	

# GOG-SN-NIR-160-106



- Layout is different from actual product, please refer to dimension only.
- Focal length tolerance :  $\pm 1.5\%$

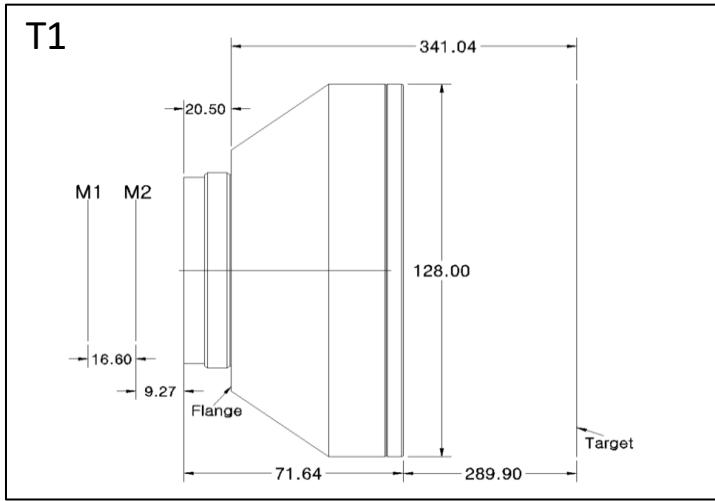




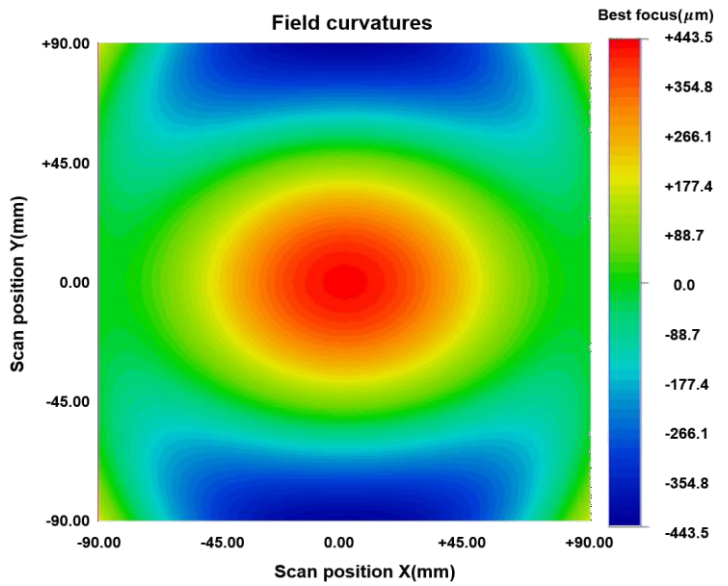
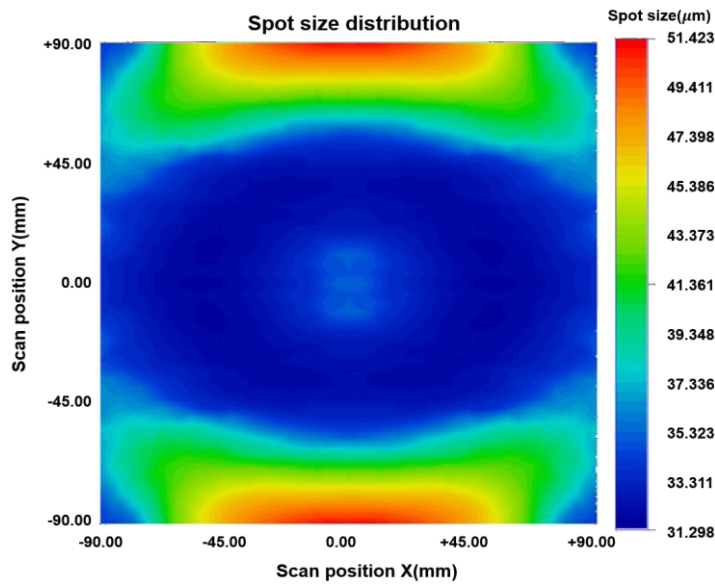
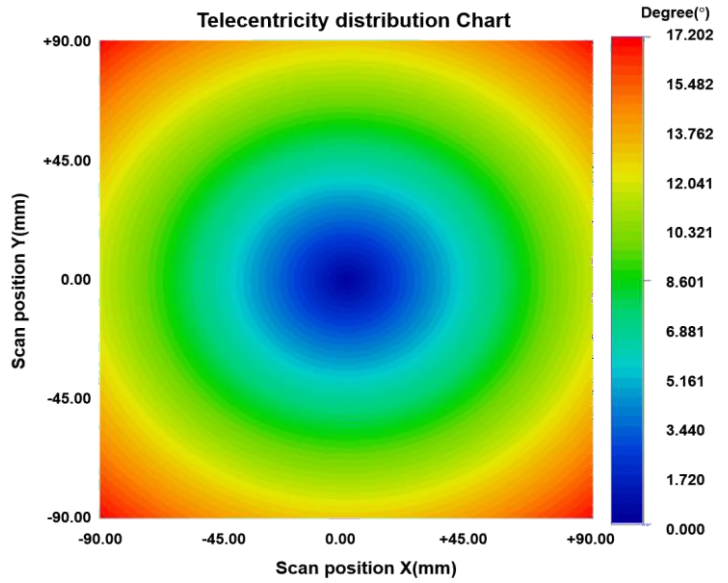
# GOG-SN-NIR-254-180

Specifications	GOG-SN-NIR-254-180
Design wavelength	1064 nm
Effective focal length	254.5 mm
Max. Input beam diameter	17.2 mm $\emptyset$
Focus size diameter	28.9 $\mu$ m $\emptyset$
Diagonal Scan angle	$\pm 29.7^\circ$
Scan field	180 mm x 180 mm
A1(1 <sup>st</sup> mirror to 2 <sup>nd</sup> mirror distance)	16.60 mm
A2(2 <sup>nd</sup> mirror to Flange)	29.77 mm
Working distance	289.90 mm
Telecentricity	$< 17.3^\circ$
Flange-Focus	341.04 mm
Lens diameter	128.00 mm $\emptyset$
Lens length	71.64 mm
Mount	M85X1.0
Window	Mounted(PW2-121.0-3.0-C-1064-0)
Laser induced damage threshold(LIDT)	15 J/cm <sup>2</sup> , 20ns, 20Hz at 1064 nm
Weight	T1 : 1.2 kg
Zemax Blackbox file is available.	

# GOG-SN-NIR-254-180



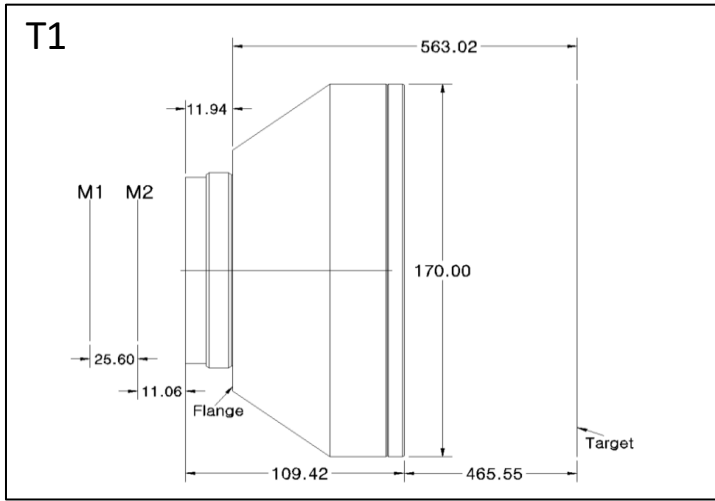
- Layout is different from actual product, please refer to dimension only.
- Focal length tolerance :  $\pm 1.5\%$



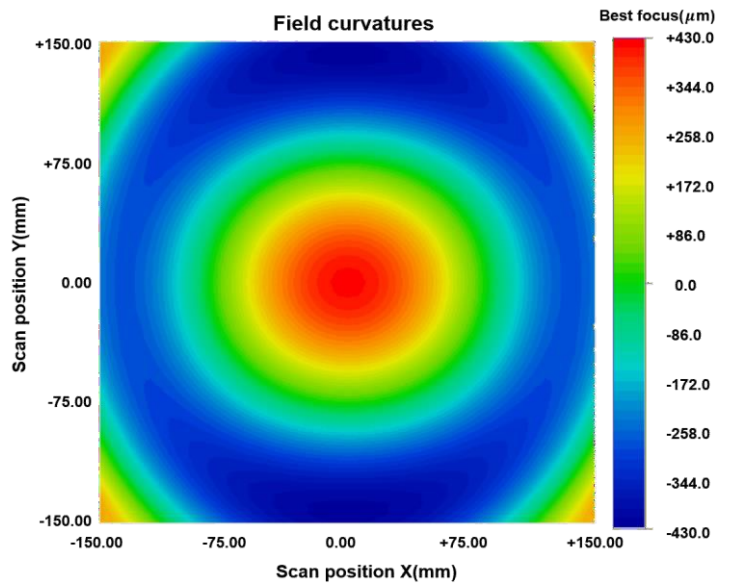
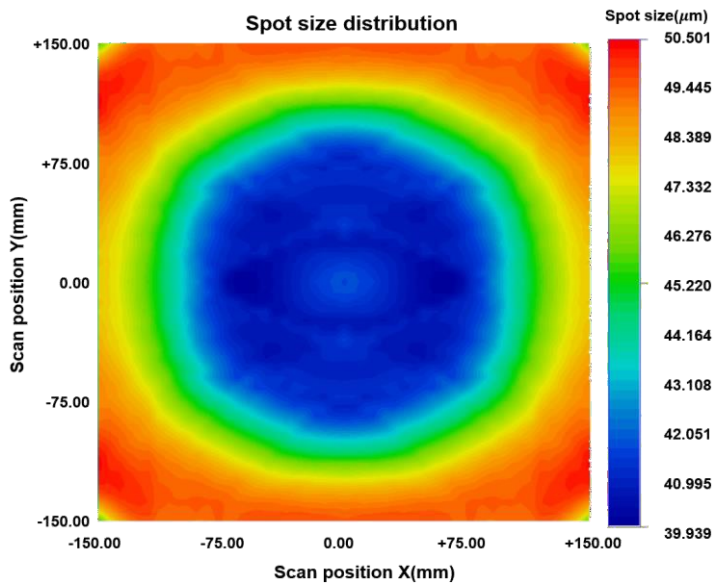
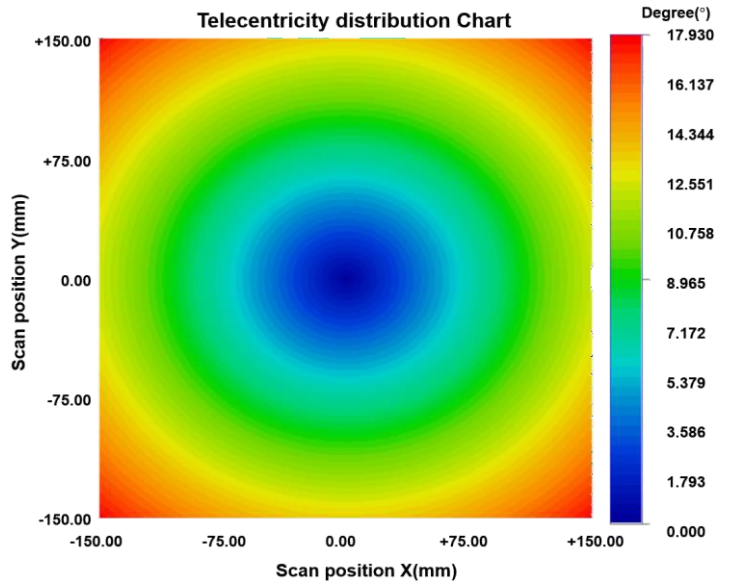
# GOG-SN-NIR-420-300

Specifications	GOG-SN-NIR-420-300
Design wavelength	980 nm
Effective focal length	420 mm
Max. Input beam diameter	20.0 mm $\varnothing$
Focus size diameter	37.7 $\mu$ m $\varnothing$
Diagonal Scan angle	$\pm 29.7^\circ$
Scan field	300 mm x 300 mm
A1(1 <sup>st</sup> mirror to 2 <sup>nd</sup> mirror distance)	25.60 mm
A2(2 <sup>nd</sup> mirror to Flange)	23.00 mm
Working distance	465.55 mm
Telecentricity	$< 18.0^\circ$
Flange-Focus	563.02 mm
Lens diameter	170.00 mm $\varnothing$
Lens length	109.42 mm
Mount	M85X1.0
Window	Mounted(PW2-158.0-3.0-C-1064-0)
Laser induced damage threshold(LIDT)	15 J/cm <sup>2</sup> , 20ns, 20Hz at 1064 nm
Weight	T1 : 3.5 kg
Zemax Blackbox file is available.	

# GOG-SN-NIR-420-300



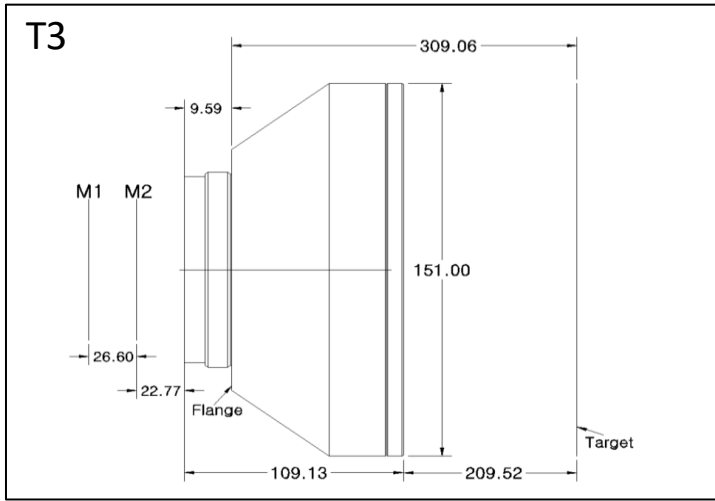
- Layout is different from actual product, please refer to dimension only.
- Focal length tolerance :  $\pm 1.5\%$



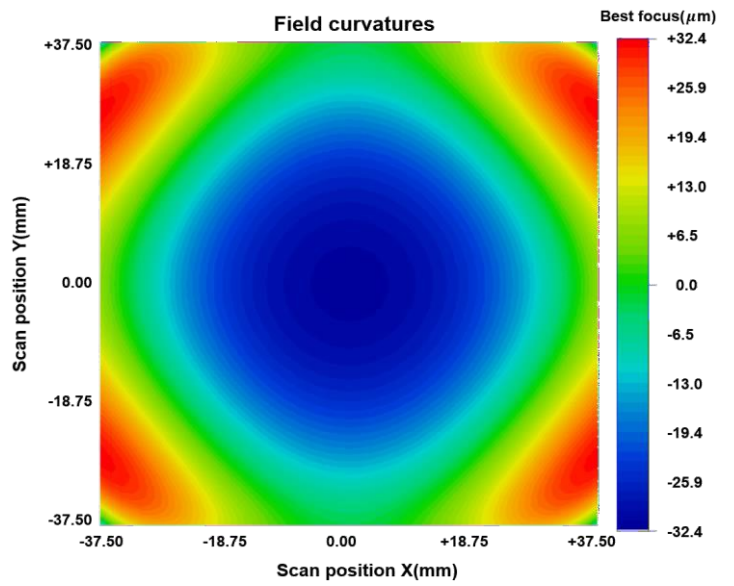
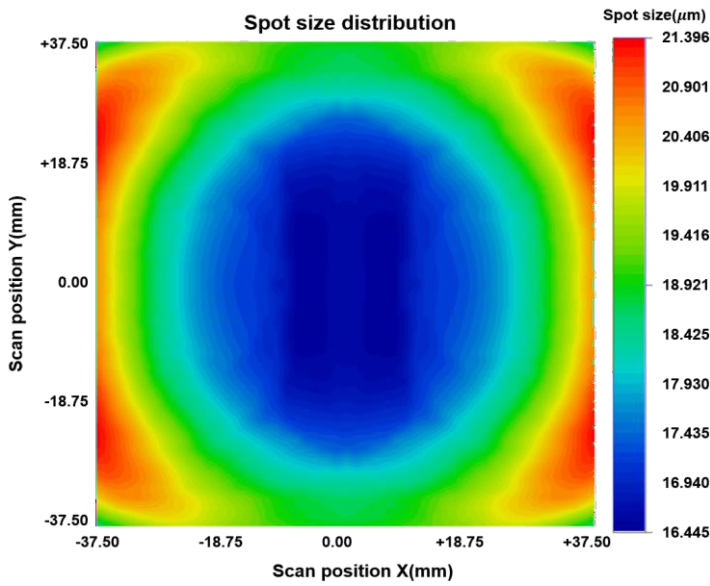
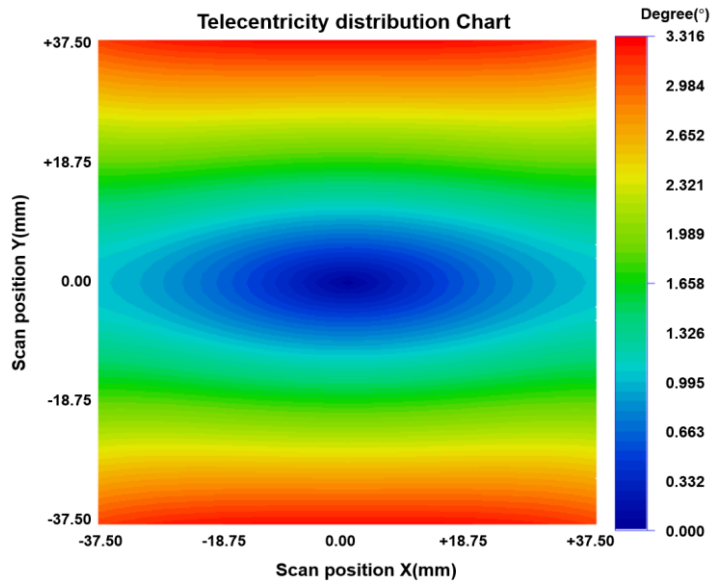
# GFS-ST-NIR-160-75

Specifications	GFS-ST-NIR-160-75
Design wavelength	1064 nm
Effective focal length	160 mm
Max. Input beam diameter	20.0 mm $\emptyset$
Focus size diameter	15.6 $\mu$ m $\emptyset$
Diagonal Scan angle	$\pm 20.1^\circ$
Scan field	75 mm x 75 mm
A1(1 <sup>st</sup> mirror to 2 <sup>nd</sup> mirror distance)	26.6 mm
A2(2 <sup>nd</sup> mirror to Flange)	32.36 mm
Working distance	209.52 mm
Telecentricity	< 3.4 $^\circ$
Flange-Focus	309.06 mm
Lens diameter	151.00 mm $\emptyset$
Lens length	109.13 mm
Mount	M85X1.0
Window	Mounted(T1 : PW2-128.0-3.0-UV-1064-0) Mounted(T3 : PW2-124.0-3.0-UV-1064-0)
Laser induced damage threshold(LIDT)	15 J/cm <sup>2</sup> , 20ns, 20Hz at 1064 nm
Weight	T1 : 2.2 kg / T3 : 2.3 kg
Zemax Blackbox file is available.	

# GFS-ST-NIR-160-75



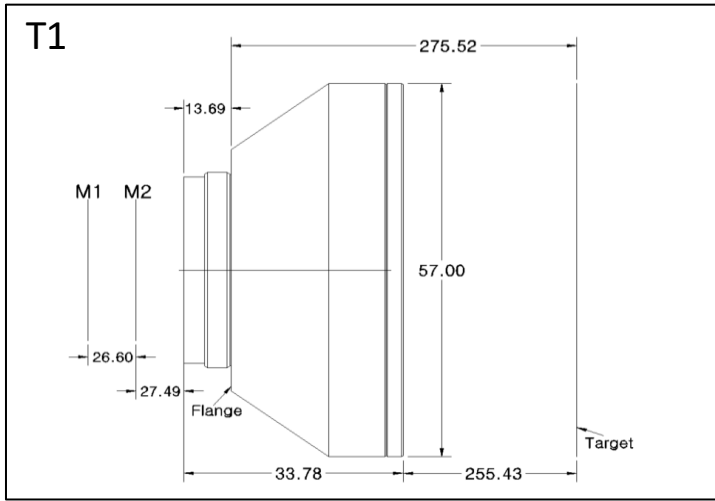
- Layout is different from actual product, please refer to dimension only.
- Focal length tolerance :  $\pm 1.5\%$



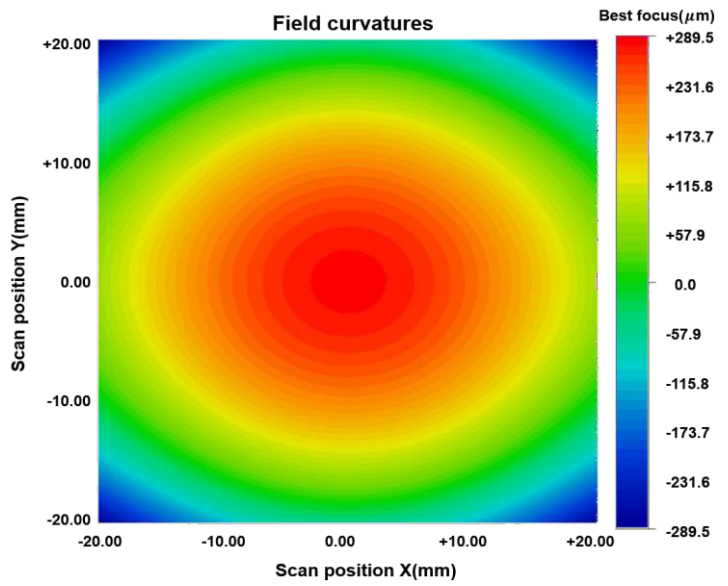
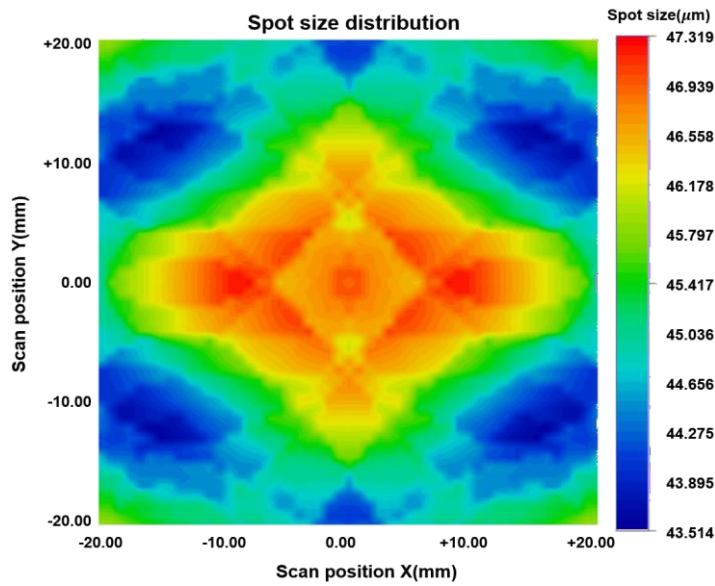
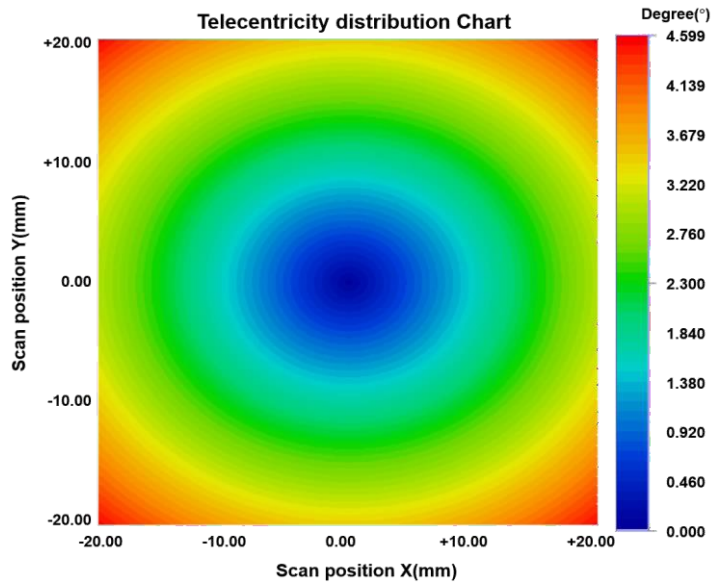
# GFS-ST-NIR-254-40

Specifications	GFS-ST-NIR-254-40
Design wavelength	1064 nm
Effective focal length	254 mm
Max. Input beam diameter	12.0 mm $\varnothing$
Focus size diameter	41.3 $\mu$ m $\varnothing$
Diagonal Scan angle	$\pm 6.5^\circ$
Scan field	40 mm x 40 mm
A1(1 <sup>st</sup> mirror to 2 <sup>nd</sup> mirror distance)	26.60 mm
A2(2 <sup>nd</sup> mirror to Flange)	41.19 mm
Working distance	255.43 mm
Telecentricity	< 4.6 $^\circ$
Flange-Focus	275.52 mm
Lens diameter	57.00 mm $\varnothing$
Lens length	33.78 mm
Mount	M55X1.0
Window	Mounted(PW2-45.0-3.0-UV-1064-0)
Laser induced damage threshold(LIDT)	15 J/cm <sup>2</sup> , 20ns, 20Hz at 1064 nm
Weight	T1 : 0.15 kg
Zemax Blackbox file is available.	

# GFS-ST-NIR-254-40



- Layout is different from actual product, please refer to dimension only.
- Focal length tolerance :  $\pm 1.5\%$

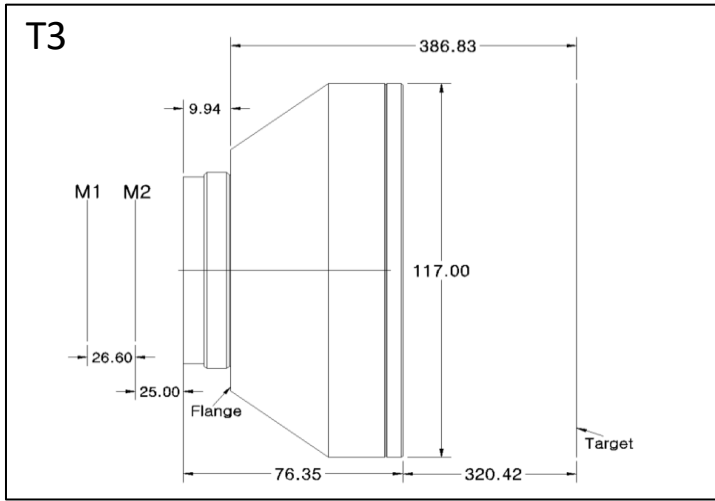




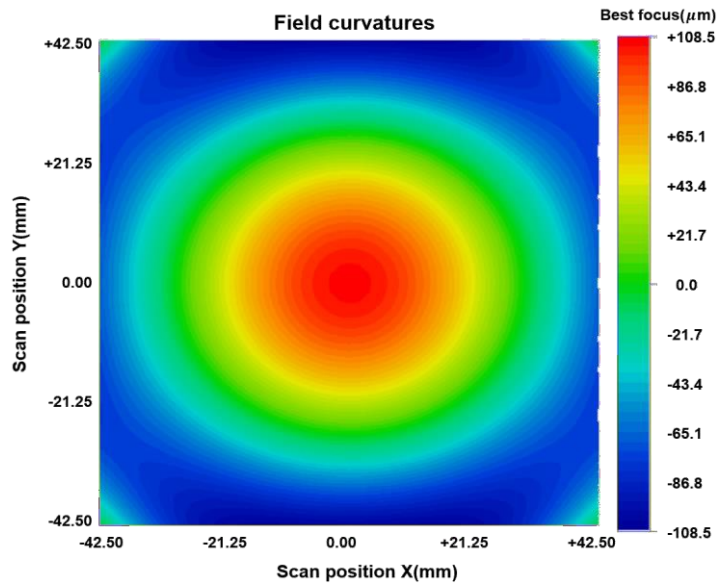
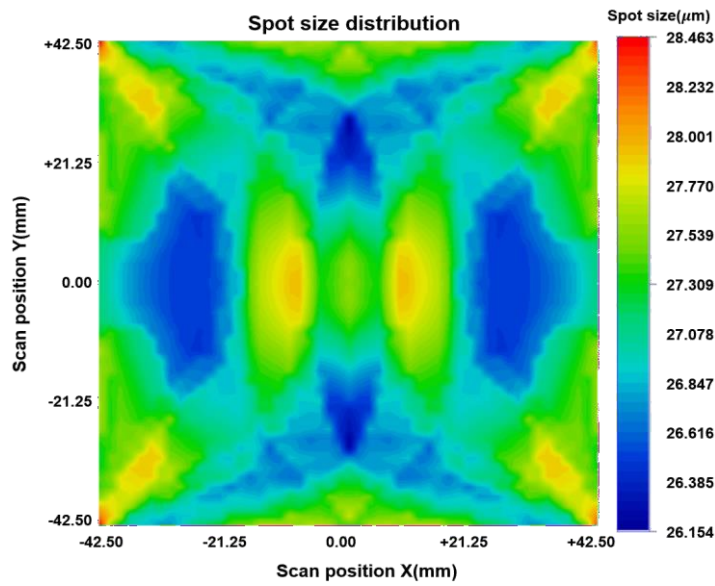
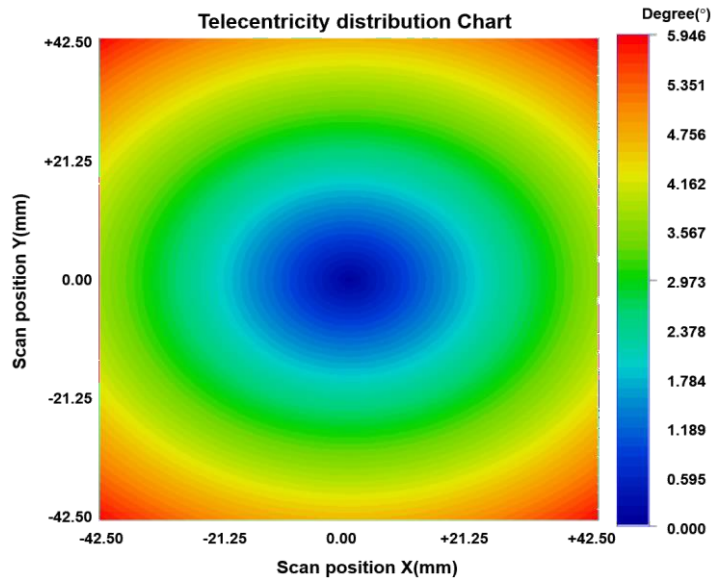
# GFS-ST-NIR-254-85

Specifications	GFS-ST-NIR-254-85
Design wavelength	1064 nm
Effective focal length	254.0 mm
Max. Input beam diameter	20.0 mm $\varnothing$
Focus size diameter	24.8 $\mu$ m $\varnothing$
Diagonal Scan angle	$\pm 13.9^\circ$
Scan field	85 mm x 85 mm
A1(1 <sup>st</sup> mirror to 2 <sup>nd</sup> mirror distance)	26.6 mm
A2(2 <sup>nd</sup> mirror to Flange)	34.94 mm
Working distance	320.42 mm
Telecentricity	$< 6.0^\circ$
Flange-Focus	386.83 mm
Lens diameter	117.00 mm $\varnothing$
Lens length	76.35 mm
Mount	M85X1.0
Window	Mounted(PW2-90.0-3.0-UV-1064-0)
Laser induced damage threshold(LIDT)	15 J/cm <sup>2</sup> , 20ns, 20Hz at 1064 nm
Weight	T3 : 1.0 kg
Zemax Blackbox file is available.	

# GFS-ST-NIR-254-85



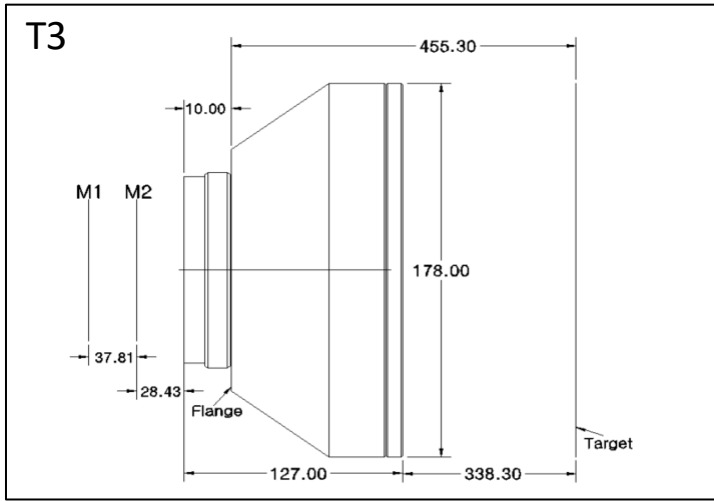
- Layout is different from actual product, please refer to dimension only.
- Focal length tolerance :  $\pm 1.5\%$



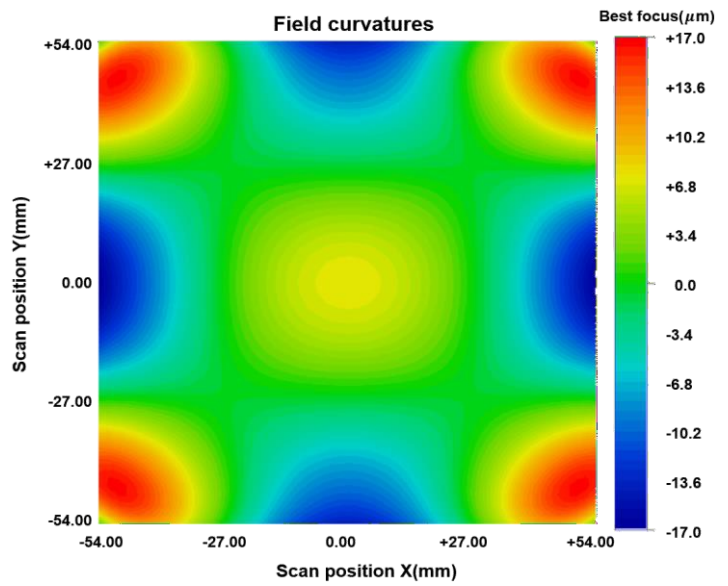
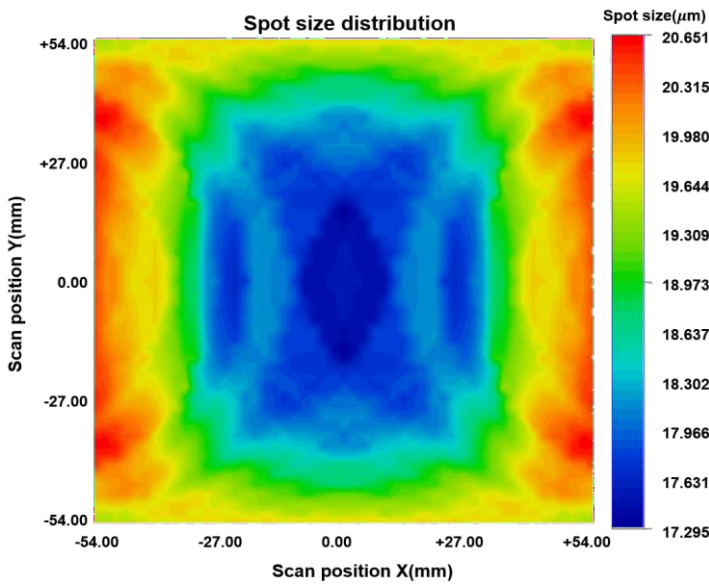
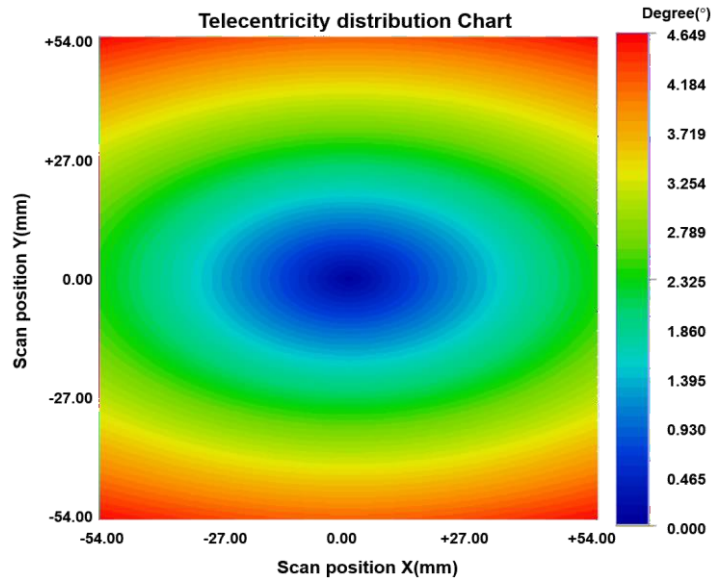
# GFS-ST-NIR-254-108

Specifications	GFS-ST-NIR-254-108
Design wavelength	1064 nm
Effective focal length	254 mm
Max. Input beam diameter	30.0 mm $\emptyset$
Focus size diameter	16.5 $\mu$ m $\emptyset$
Diagonal Scan angle	$\pm 17.9^\circ$
Scan field	108 mm x 108 mm
A1(1 <sup>st</sup> mirror to 2 <sup>nd</sup> mirror distance)	37.81 mm
A2(2 <sup>nd</sup> mirror to Flange)	38.43 mm
Working distance	338.30 mm
Telecentricity	$< 4.7^\circ$
Flange-Focus	455.30 mm
Lens diameter	178.00 mm $\emptyset$
Lens length	127.00 mm
Mount	M102X1.0
Window	Mounted(T3 : PW2-159.0-3.0-UV-1064-0)
Laser induced damage threshold(LIDT)	15 J/cm <sup>2</sup> , 20ns, 20Hz at 1064 nm
Weight	T3 : 3.6 kg
Zemax Blackbox file is available.	

# GFS-ST-NIR-254-108



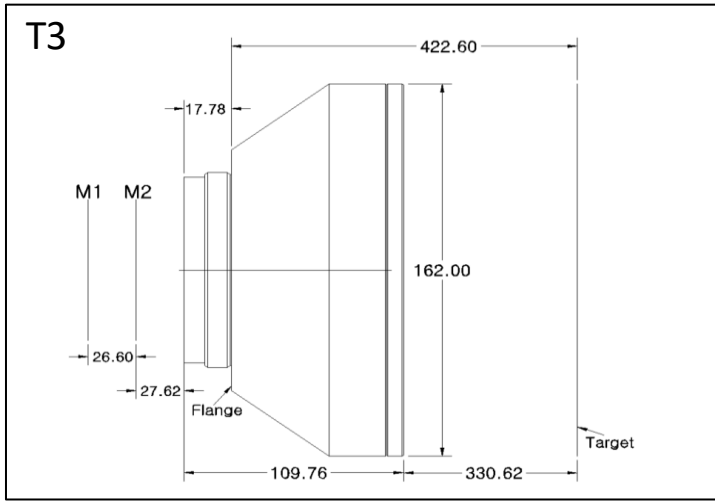
- Layout is different from actual product, please refer to dimension only.
- Focal length tolerance :  $\pm 1.5\%$



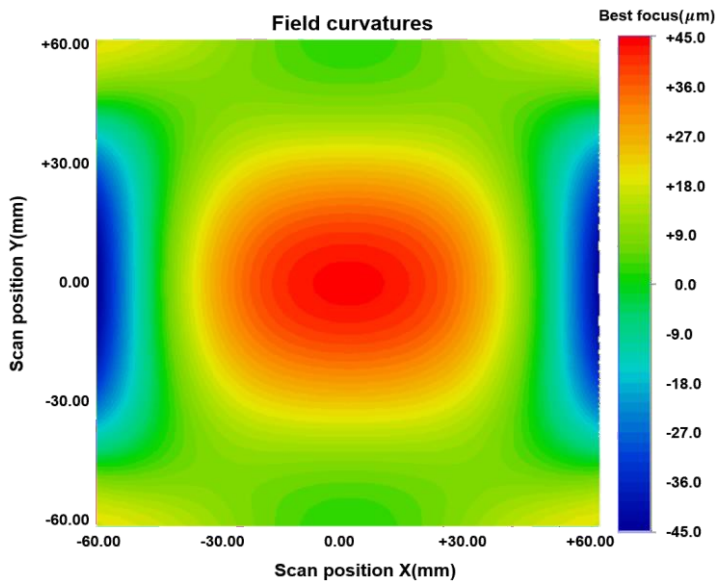
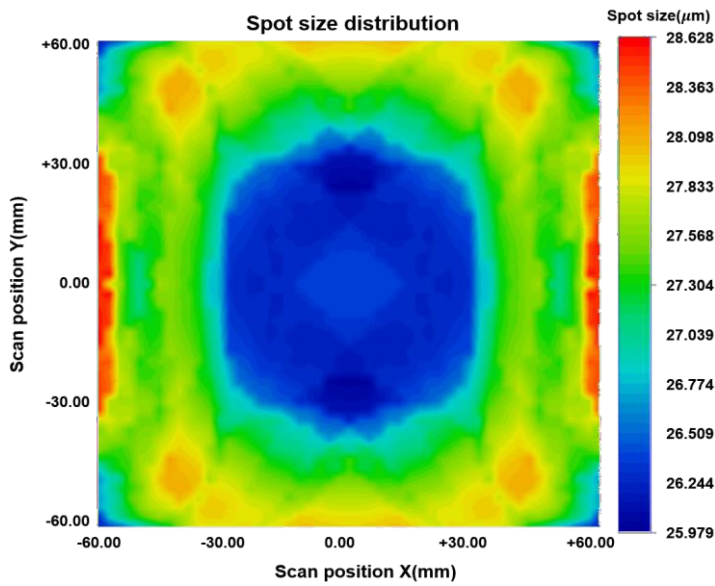
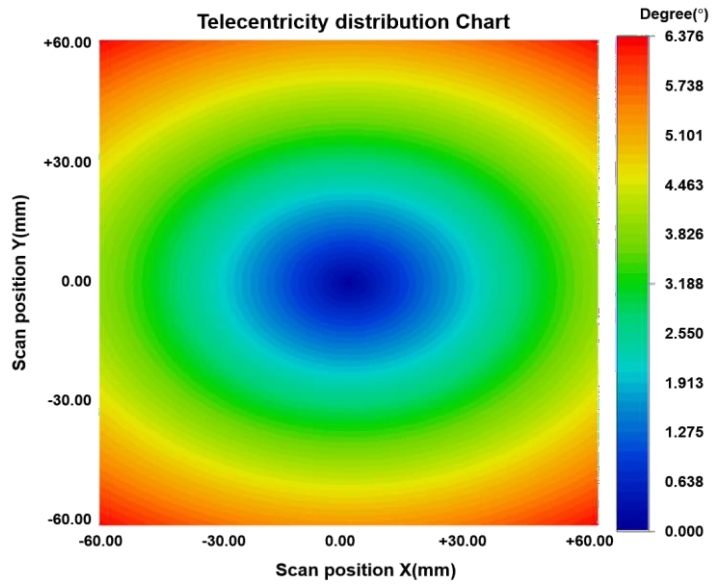
# GFS-ST-NIR-254-120

Specifications	GFS-ST-NIR-254-120
Design wavelength	1064 nm
Effective focal length	255 mm
Max. Input beam diameter	20.0 mm $\emptyset$
Focus size diameter	24.9 $\mu$ m $\emptyset$
Diagonal Scan angle	$\pm 20.1^\circ$
Scan field	120 mm x 120 mm
A1(1 <sup>st</sup> mirror to 2 <sup>nd</sup> mirror distance)	26.6 mm
A2(2 <sup>nd</sup> mirror to Flange)	45.40 mm
Working distance	330.62 mm
Telecentricity	$< 6.4^\circ$
Flange-Focus	422.60 mm
Lens diameter	162.00 mm $\emptyset$
Lens length	109.76 mm
Mount	M85X1.0
Window	Mounted(T1 : PW2-139.0-3.0-UV-1064-0) Mounted(T3 : PW2-135.0-3.0-UV-1064-0)
Laser induced damage threshold(LIDT)	15 J/cm <sup>2</sup> , 20ns, 20Hz at 1064 nm
Weight	T1 : 2.3 kg / T3 : 2.5 kg
Zemax Blackbox file is available.	

# GFS-ST-NIR-254-120



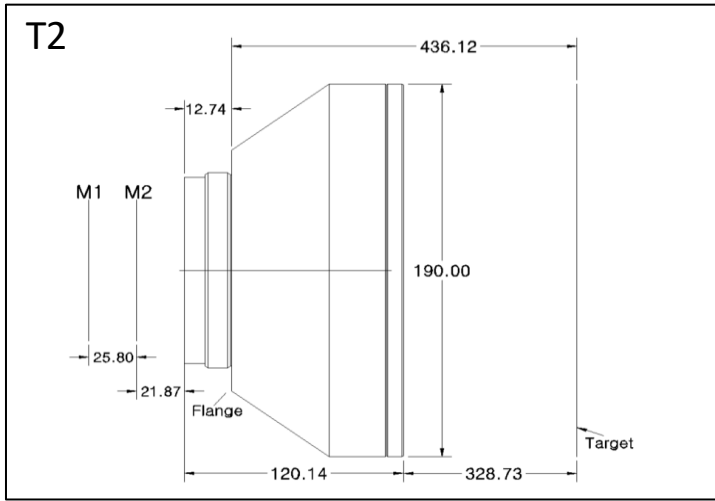
- Layout is different from actual product, please refer to dimension only.
- Focal length tolerance :  $\pm 1.5\%$



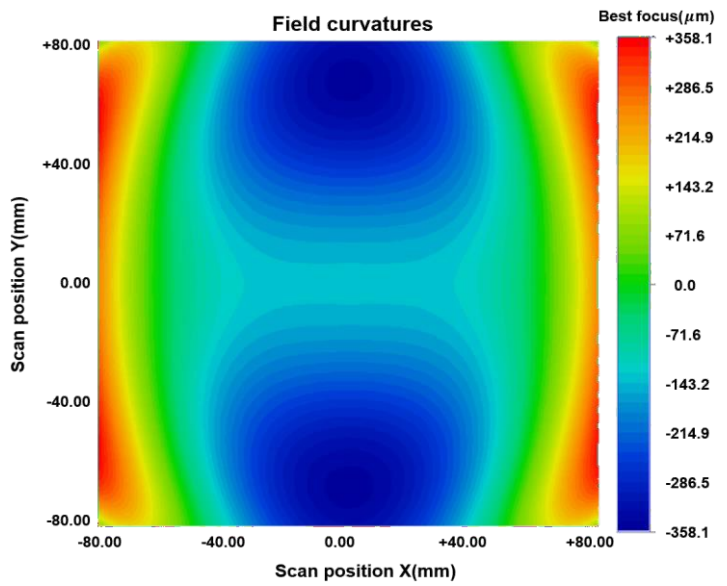
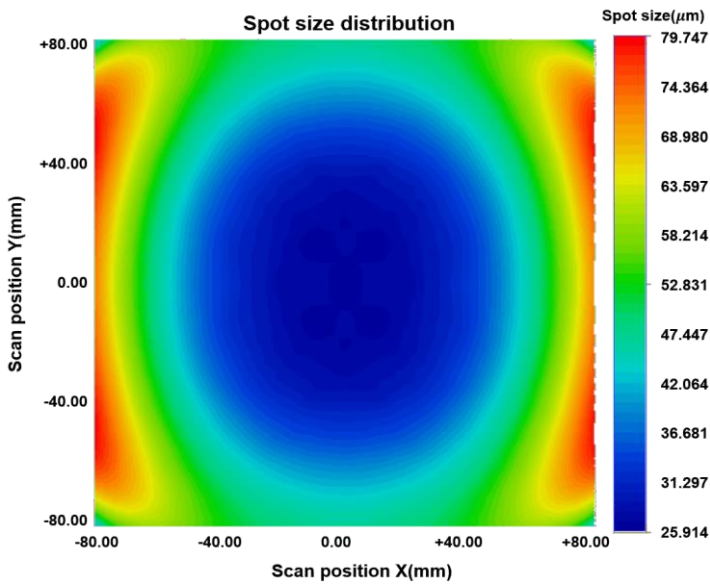
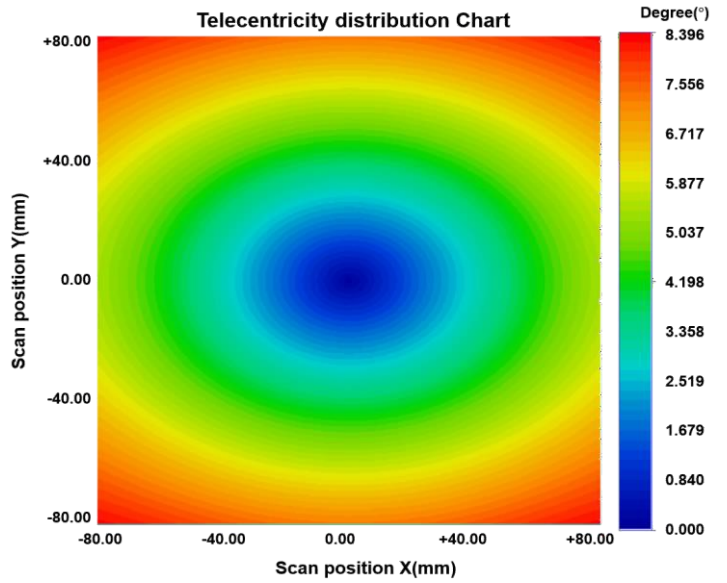
# GFS-ST-NIR-254-160

Specifications	GFS-ST-NIR-254-160
Design wavelength	1064 nm
Effective focal length	254 mm
Max. Input beam diameter	20.0 mm $\varnothing$
Focus size diameter	24.8 $\mu$ m $\varnothing$
Diagonal Scan angle	$\pm 28.0^\circ$
Scan field	160 mm x 160 mm
A1(1 <sup>st</sup> mirror to 2 <sup>nd</sup> mirror distance)	25.80 mm
A2(2 <sup>nd</sup> mirror to Flange)	34.61 mm
Working distance	328.73 mm
Telecentricity	$< 8.4^\circ$
Flange-Focus	436.12 mm
Lens diameter	190.00 mm $\varnothing$
Lens length	120.14 mm
Mount	M85X1.0
Window	Mounted(PW2-179.0-3.0-UV-1064-0)
Laser induced damage threshold(LIDT)	15 J/cm <sup>2</sup> , 20ns, 20Hz at 1064 nm
Weight	T2 : 4.2 kg
Zemax Blackbox file is available.	

# GFS-ST-NIR-254-160



- Layout is different from actual product, please refer to dimension only.
- Focal length tolerance :  $\pm 1.5\%$

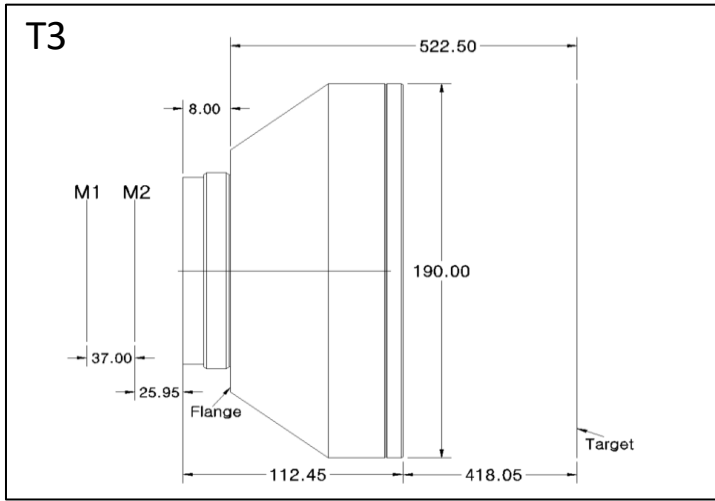




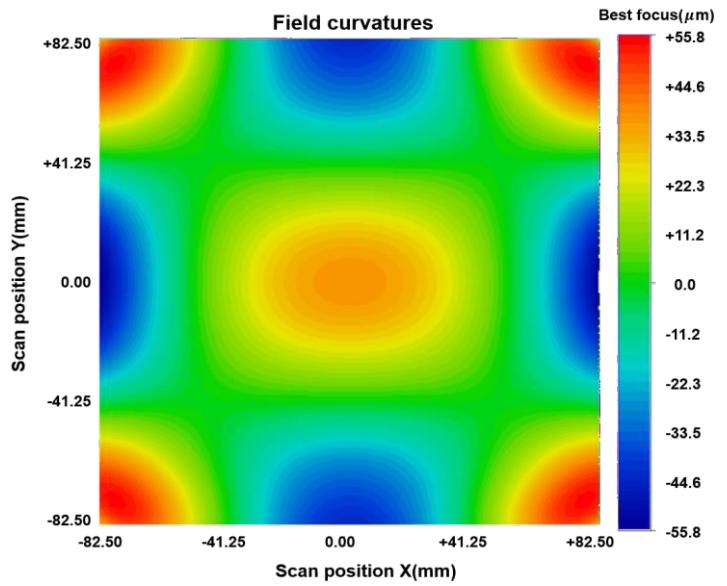
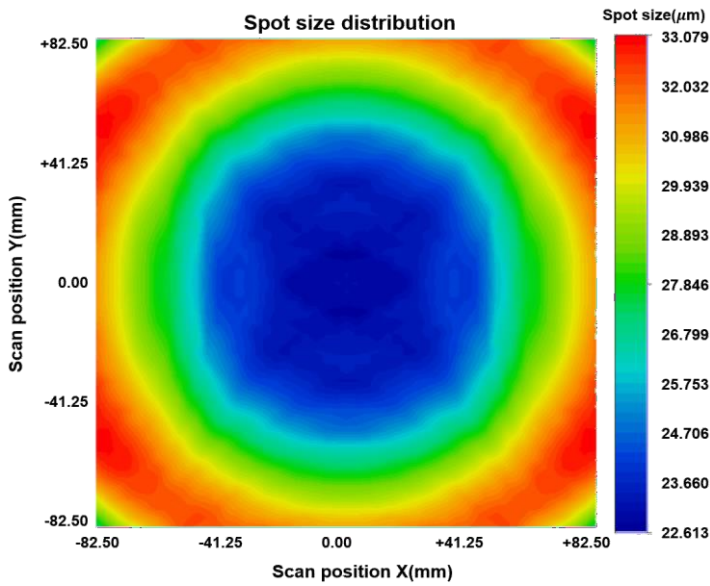
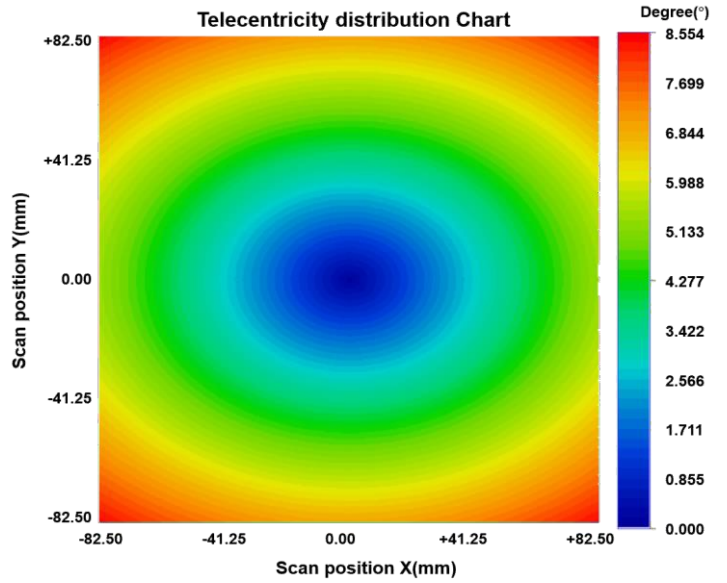
# GFS-ST-NIR-330-165

Specifications	GFS-ST-NIR-330-165
Design wavelength	1064 nm
Effective focal length	330 mm
Max. Input beam diameter	30.0 mm $\varnothing$
Focus size diameter	21.5 $\mu$ m $\varnothing$
Diagonal Scan angle	$\pm 21.3^\circ$
Scan field	165 mm x 165 mm
A1(1 <sup>st</sup> mirror to 2 <sup>nd</sup> mirror distance)	37.00 mm
A2(2 <sup>nd</sup> mirror to Flange)	33.95 mm
Working distance	418.05 mm
Telecentricity	$< 8.6^\circ$
Flange-Focus	522.50 mm
Lens diameter	190.00 mm $\varnothing$
Lens length	112.45 mm
Mount	M85X1.0
Window	Mounted(PW2-161.0-3.0-UV-1064-0)
Laser induced damage threshold(LIDT)	15 J/cm <sup>2</sup> , 20ns, 20Hz at 1064 nm
Weight	T3 : 3.6 kg
Zemax Blackbox file is available.	

# GFS-ST-NIR-330-165



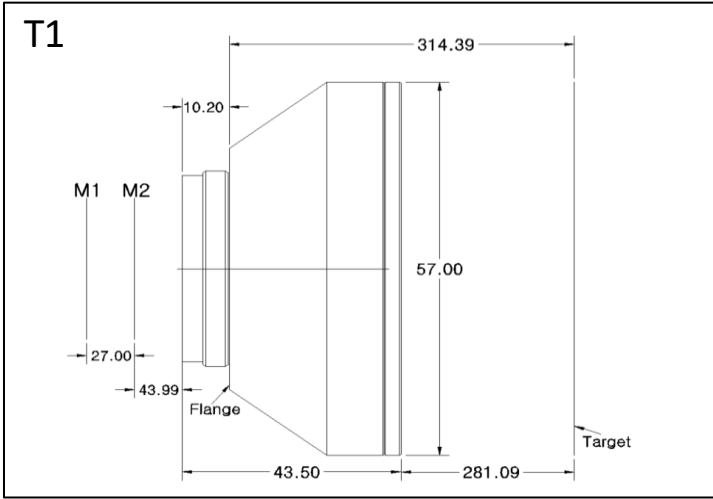
- Layout is different from actual product, please refer to dimension only.
- Focal length tolerance :  $\pm 1.5\%$



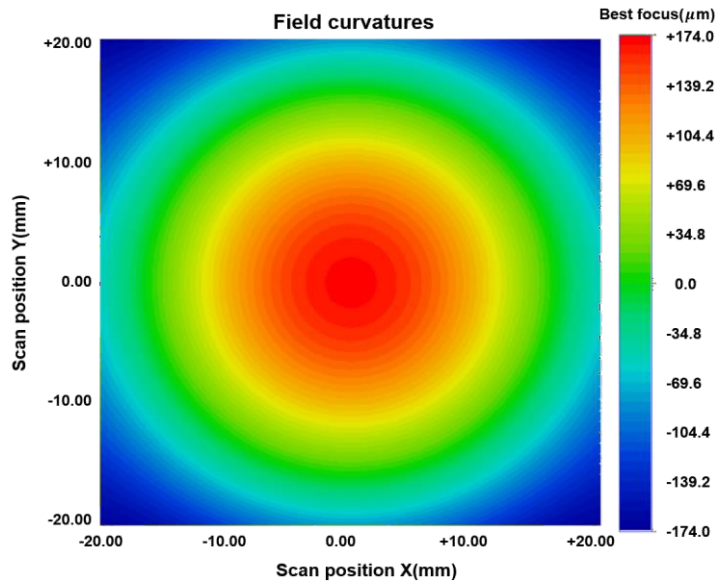
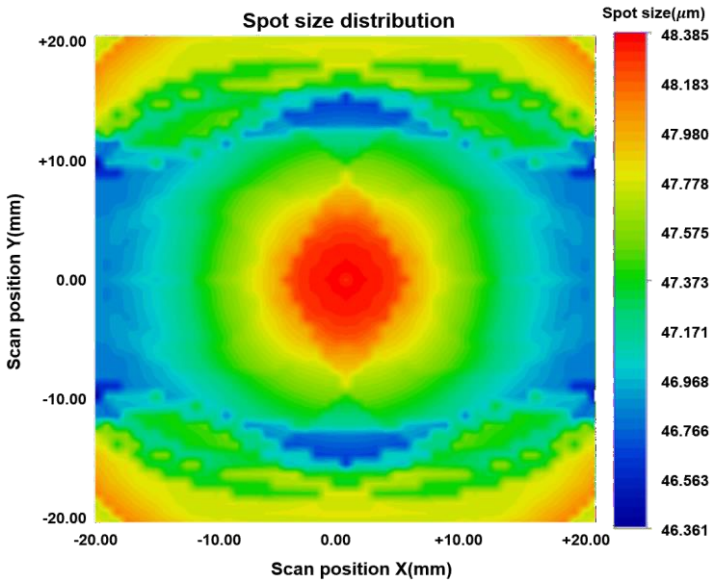
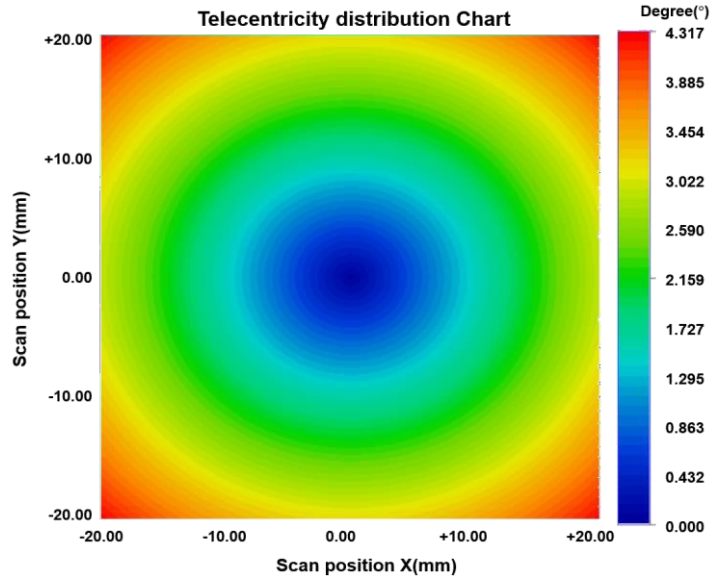
# GFS-ST-NIR-340-40

Specifications	GFS-ST-NIR-340-40
Design wavelength	1064 nm
Effective focal length	340 mm
Max. Input beam diameter	15.0 mm $\varnothing$
Focus size diameter	44.2 $\mu$ m $\varnothing$
Diagonal Scan angle	$\pm 4.8^\circ$
Scan field	40 mm x 40 mm
A1(1 <sup>st</sup> mirror to 2 <sup>nd</sup> mirror distance)	27.0 mm
A2(2 <sup>nd</sup> mirror to Flange)	54.19 mm
Working distance	281.09 mm
Telecentricity	$< 4.4^\circ$
Flange-Focus	314.39 mm
Lens diameter	57.00 mm $\varnothing$
Lens length	43.50 mm
Mount	M55X1.0
Window	Mounted(PW2-50.0-3.0-UV-1064-0)
Laser induced damage threshold(LIDT)	15 J/cm <sup>2</sup> , 20ns, 20Hz at 1064 nm
Weight	T1 : 0.18 kg
Zemax Blackbox file is available.	

# GFS-ST-NIR-340-40



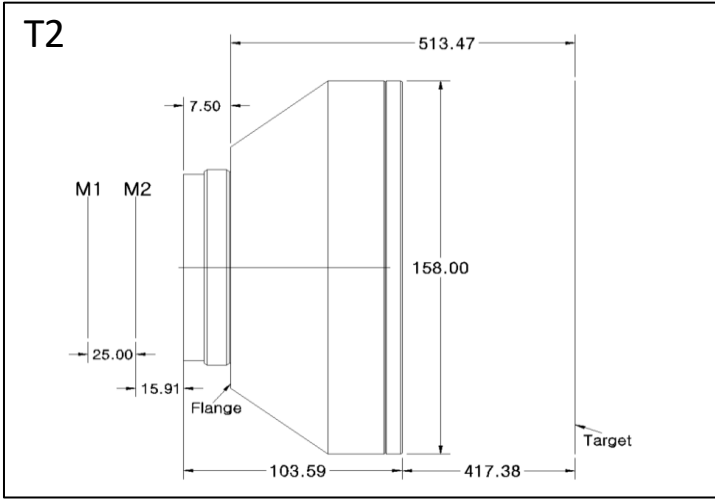
- Layout is different from actual product, please refer to dimension only.
- Focal length tolerance :  $\pm 1.5\%$



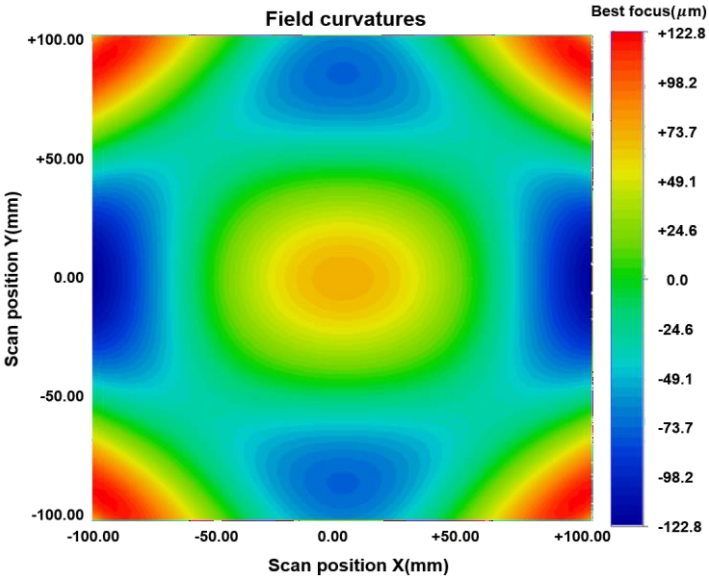
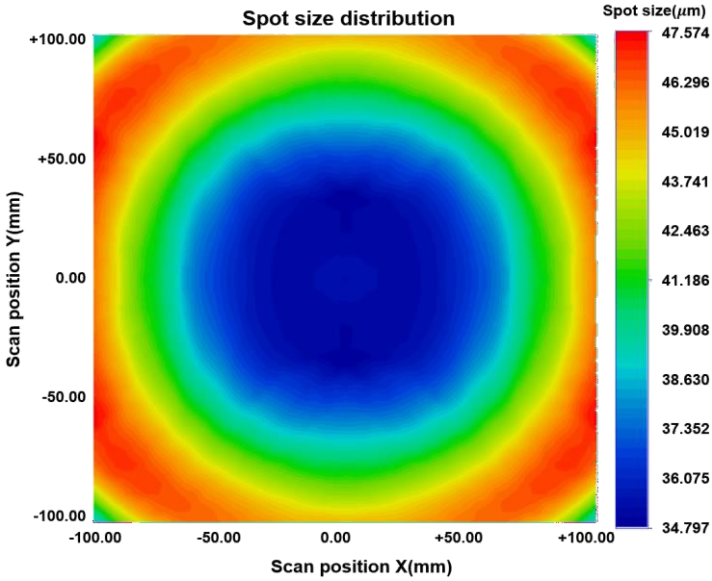
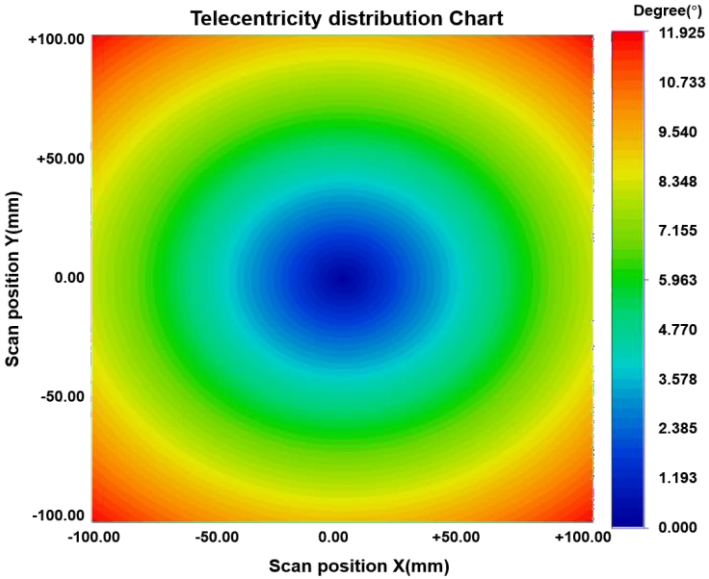
# GFS-SN-NIR-340-200

Specifications	GFS-SN-NIR-340-200
Design wavelength	1064 nm
Effective focal length	340 mm
Max. Input beam diameter	20.0 mm $\varnothing$
Focus size diameter	33.2 $\mu$ m $\varnothing$
Diagonal Scan angle	$\pm 25.2^\circ$
Scan field	200 mm x 200 mm
A1(1 <sup>st</sup> mirror to 2 <sup>nd</sup> mirror distance)	25.0 mm
A2(2 <sup>nd</sup> mirror to Flange)	23.41 mm
Working distance	417.38 mm
Telecentricity	$< 12.0^\circ$
Flange-Focus	513.47 mm
Lens diameter	158.00 mm $\varnothing$
Lens length	103.59 mm
Mount	M85X1.0
Window	Mounted(PW2-145.0-3.0-UV-1064-0)
Laser induced damage threshold(LIDT)	15 J/cm <sup>2</sup> , 20ns, 20Hz at 1064 nm
Weight	T2 : 2.6 kg
Zemax Blackbox file is available.	

# GFS-SN-NIR-340-200



- Layout is different from actual product, please refer to dimension only.
- Focal length tolerance :  $\pm 1.5\%$

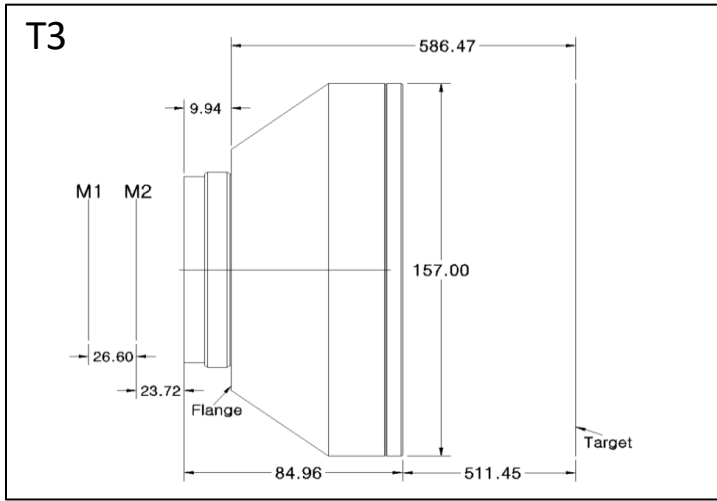


# GFS-SN-NIR-420-220

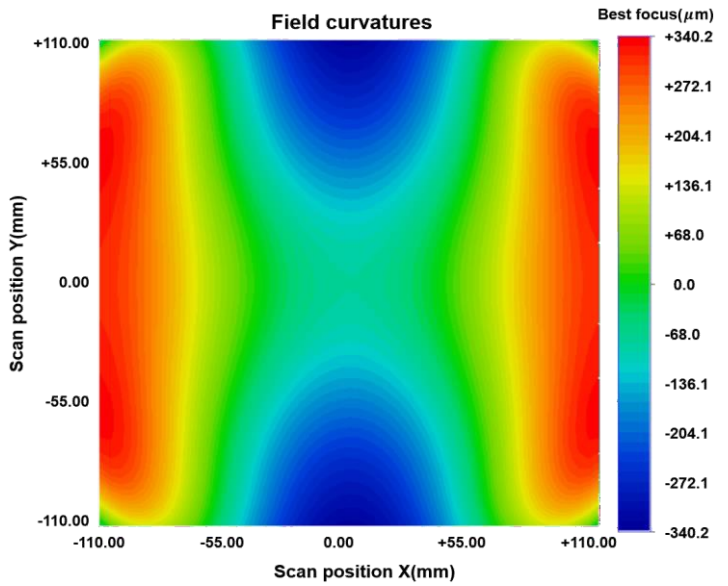
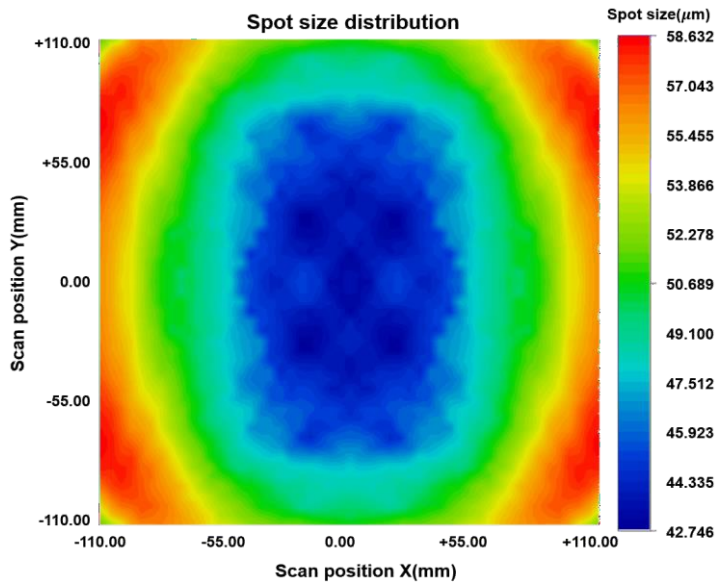
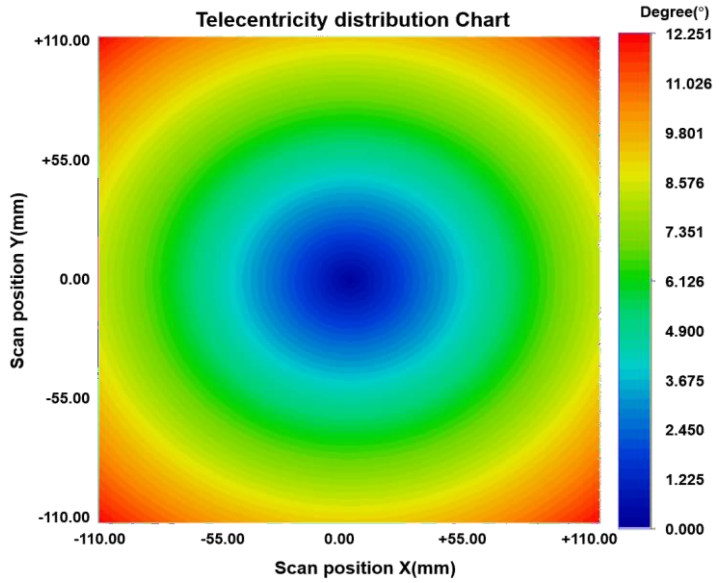
Specifications	GFS-ST-NIR-420-220
Design wavelength	1064 nm
Effective focal length	420 mm
Max. Input beam diameter	20.0 mm $\varnothing$
Focus size diameter	40.9 $\mu$ m $\varnothing$
Diagonal Scan angle	$\pm 22.0^\circ$
Scan field	220 mm x 220 mm
A1(1 <sup>st</sup> mirror to 2 <sup>nd</sup> mirror distance)	26.60 mm
A2(2 <sup>nd</sup> mirror to Flange)	33.66 mm
Working distance	511.45 mm
Telecentricity	$< 12.3^\circ$
Flange-Focus	586.47 mm
Lens diameter	157.00 mm $\varnothing$
Lens length	84.96 mm
Mount	M85X1.0
Window	Mounted(PW2-130.0-3.0-UV-1064-0)
Laser induced damage threshold(LIDT)	15 J/cm <sup>2</sup> , 20ns, 20Hz at 1064 nm
Weight	T3 : 1.7 kg

Zemax Blackbox file is available.

# GFS-SN-NIR-420-220



- Layout is different from actual product, please refer to dimension only.
- Focal length tolerance :  $\pm 1.5\%$







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