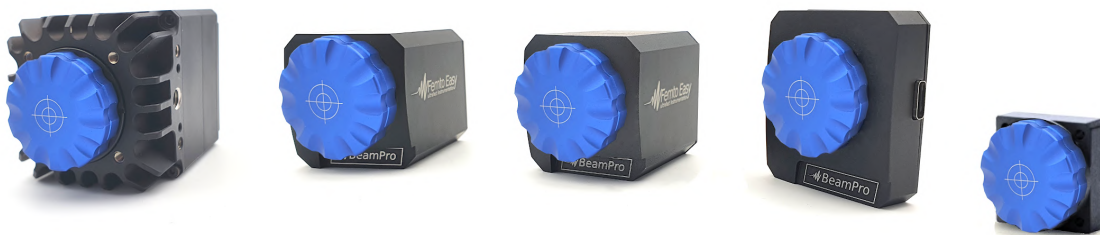


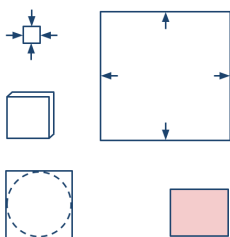
BeamPro

The Femto Easy BeamPro laser beam profilers take advantage of our user-friendly software, and provide thorough analysis and statistics of your laser beam. They are suitable for wavelengths from 190 to 1700 nm and beam diameters as large as 25 mm. There are also high resolution models with pixels as small as 1.45 μm for focused beam measurements. The BeamPro software uses standard communication protocols. It is therefore easily integrable in most complex environments. Several BeamPro can be controlled from a remote screen through the network.

BeamPro



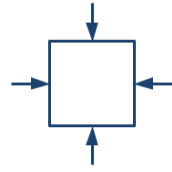
Models :



- ◆ **Small pixels** : down to 1.45 μm
- ◆ **Large area** : beams up to 25 mm in diameter
- ◆ **Compact footprint** : less than 15 mm thickness
- ◆ **Square format** : natural format for circular beams
- ◆ **SWIR range** : 900 to 1700 nm wavelengths

Options

- ◆ Windowless
- ◆ UV extension (down to 190 nm)
- ◆ Additional ND filters
- ◆ High Dynamic Range
- ◆ Vacuum compatible versions (not available for all models)
- ◆ Trigger



BeamPro small pixels

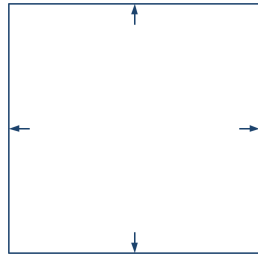
Pixel size from 1.45 μm up to 3 μm

Models	LP6.3	BP7.6	μ -BP8.4	μ -BP4.2	μ -BP6.4	BP7.5	BP13.9	μ -BP7.6	BP12.12+
Pixel size (μm) ↗	1.45	1.85	2.00	2.20	2.20	2.40	2.40	2.74	2.74
Spectral range (nm)	375 – 1100 190 – 1100 with UV option								
Sensor size (mm)	5.6 x 3.1	7.4 x 5.5	7.7 x 4.3	4.2 x 2.4	5.7 x 4.3	7.4 x 4.9	13.1 x 8.7	6.8 x 5.7	12.3 x 12.3
Sensor format	S 1/3"	M 1/1.7"	M 1/1.8"	S 1/3.7"	M 1/2.5"	M 1/1.8"	L 1"	M 1/1.8"	L 1.1"
Resolution	3864 x 2176 8.4 Mpx	4000 x 3000 12 Mpx	3840 x 2160 8.3 Mpx	1920 x 1080 2.0 Mpx	2592 x 1944 5.0 Mpx	3088 x 2076 6.4 Mpx	5472 x 3648 20.0 Mpx	2472 x 2064 5.1 Mpx	4504 x 4504 20.2 Mpx
Shutter type	Rolling	Rolling	Rolling	Rolling	Rolling	Rolling	Rolling	Global	Global
Minimum beam diameter (\varnothing FWHM, μm) ¹	7	9	10	11	11	12	12	14	14
Maximum acquisition frame rate (fps) ²	24	31	45	15	14	59	60	30	18
Exposure time min (μs)	31 ³	10 ³	80 ³	31 ³	52 ³	8 ³	20 ³	20	20
Exposure time max (s)	1	1	1	1	1	1	1	1	1
Dynamic (dB)	70	70	71	58	58	73	72	70	71
Price	■ ■	■ ■	■ ■	■	■ ■	■ ■	■ ■	■ ■	■ ■ ■
Sensor type	CMOS								
Bit depth	12 / 16 (with HDR option)								
PC Interface	USB 3.1								
Synchronization	Yes (with the Trigger option)								
Dimensions (mm)	40 x 45 x 12.5	36 x 39 x 46	33 x 29 x 10.5	33 x 29 x 10.5	33 x 29 x 10.5	36 x 39 x 46	36 x 39 x 46	33 x 29 x 10.5	36 x 39 x 46

¹ The minimum beam diameters are specified for a precision of measurement better than 1%. Smaller beam diameter can be measured but the error will progressively increase

² Depending on the type of calculation, frame rate may vary

³ Due to rolling shutter, the actual minimum exposure time to capture the whole beam will be limited by the beam size. The larger the beam, the longer the required minimum exposure time



BeamPro large area

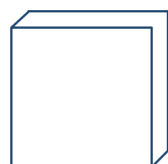
Beam diameters from 7 mm up to 25 mm

Models	BP8.7	BP11.7	SWIR 10.8	BP13.9	SWIR 13.10	BP14.10	BP11.11	BP11.11+	BP12.12	BP12.12+	BP25.16	SWIR 21.17	BPΦ25	
Sensor size (mm)	8.7 x 7.1	11.2 x 7.0	9.6 x 7.7	13.1 x 8.7	12.8 x 10.2	13.8 x 10.3	11.2 x 11.2	11.2 x 11.2	12.3 x 12.3	12.3 x 12.3	25.0 x 16.1	21.0 x 17.0	Φ 25.0	
Sensor format	L 2/3"	L 1/1.2"	L 1"	L 1"	L 1"	L 1.1"	L 1"	L 1"	L 1.1"	L 1.1"	L+ 4/3"	L+ APS-C	L+ Φ	
Spectral range (nm)	375 – 1100 190 – 1100 with UV option		900 - 1700	375 - 1100 190 - 1100 with UV option	900 - 1700	375 - 1100 190 - 1100 with UV option						900 - 1700	375 - 1100 190 - 1100 with UV option	
Resolution	2456 x 2054 5.0 Mpx	1920 x 1200 2.3 Mpx	640 x 512 0.3 Mpx	5472 x 3648 20.0 Mpx	1280 x 1024 1.3 Mpx	4096 x 3000 12.3 Mpx	2048 x 2048 4.2 Mpx	2056 x 2056 4.2 Mpx	2256 x 2256 5.1 Mpx	4512 x 4512 20.3 Mpx	1920 x 1200 2.3 Mpx	640 x 512 0.3 Mpx	2048 x 2048 4.2 Mpx	
Pixel size (µm)	3.45	5.86	15.0	2.40	10.0	3.45	5.50	5.48	5.48	2.74	13.48	33.00	12.65	
Shutter type	Global	Global	Global	Rolling	Global	Global	Global	Global	Global	Global	Global	Global	Global	
Minimum beam diameter (Ø FWHM, µm) ¹	17	29	75	12	50	17	29	28	28	14	68	23	63	
Maximum acquisition frame rate (fps) ²	36	47	230	18	60	36	80	18	18	18	47	230	80	
Exposure time min (µs)	27	20	10	67 ³	10	27	40	20	20	20	20	10	40	
Exposure time max (s)	1	1	0.5	1	0.5	1	1	1	1	1	1	0.5	1	
Dynamic (dB)	73	70	63	72	61	73	58	71	71	71	70	63	58	
Price	■ ■	■ ■	■ ■ ■ ■	■ ■	■ ■ ■ ■	■ ■	■ ■	■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■ ■	■ ■ ■	
Sensor type	CMOS		InGaAs	CMOS	InGaAs	CMOS						InGaAs	CMOS	
Bit depth	12 / 16 (with HDR option)		14	12 / 16 (with HDR option)	14	12 / 16 (with HDR option)						14	12 / 16 (with HDR option)	
PC Interface	USB 3.1													
Synchronization	Yes (with the Trigger option)													
Dimensions (mm)	36 x 39 x 46	36 x 39 x 46	46 x 46 x 57	36 x 39 x 46	58 x 58 x 70	36 x 39 x 46	36 x 39 x 46	36 x 39 x 46	36 x 39 x 46	36 x 39 x 46	36 x 39 x 46	37 x 40 x 55	46 x 46 x 57	37 x 40 x 55

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BeamPro compact footprint

Less than 15 mm thickness

Models	LP6.3	μ-BP8.4	μ-BP4.2	μ-BP6.4	μ-BP7.6	μ-BP7.4	LP5.4	LP7.5	μ-BP5.4	μ-BP7.5	
Pixel size (μm) ↗	1.45	2.00	2.20	2.20	2.74	3.45	3.45	3.45	3.75	4.50	
Spectral range (nm)	375 – 1100 190 – 1100 with UV option										
Sensor size (mm)	5.6 x 3.1	7.7 x 4.3	4.2 x 2.4	5.7 x 4.3	6.8 x 5.7	6.6 x 4.2	5.0 x 3.7	7.1 x 5.3	4.8 x 3.7	7.2 x 5.4	
Sensor format	S 1/3"	M 1/1.8"	S 1/3.7"	M 1/2.5"	M 1/1.8"	M 1/2.3"	S 1/3"	M 1/1.8"	S 1/3"	M 1/1.8"	
Resolution	3864 x 2176 8.4 Mpx	3840 x 2160 8.3 Mpx	1920 x 1080 2.0 Mpx	2592 x 1944 5.0 Mpx	2472 x 2064 5.1 Mpx	1920 x 1200 2.3 Mpx	1448 x 1086 1.6 Mpx	2056 x 1542 3.2 Mpx	1280 x 960 1.2 Mpx	1600 x 1200 2.0 Mpx	
Shutter type	Rolling	Rolling	Rolling	Rolling	Global	Global	Global	Global	Global	Global	
Minimum beam diameter (Ø FWHM, μm) ¹	7	10	11	11	14	17	17	17	19	23	
Maximum acquisition frame rate (fps) ²	24	45	15	14	30	160	230	57	54	60	
Exposure time	min (μs) max (s)	31 ³ 1	80 ³ 1	31 ³ 1	52 ³ 1	20 1	17 1	17 1	24 1	30 1	20 1
Dynamic (dB)	70	71	58	58	70	71	71	72	58	49	
Price	■ ■	■ ■	■	■ ■	■ ■	■ ■	■	■ ■	■	■ ■	
Sensor type	CMOS										
Bit depth	12 / 16 (with HDR option)										
PC Interface	USB 3.1										
Synchronization	Yes (with the Trigger option)										
Dimensions (mm)	40 x 45 x 12.5	33 x 29 x 10.5	33 x 29 x 10.5	33 x 29 x 10.5	33 x 29 x 10.5	33 x 29 x 10.5	40 x 45 x 12.5	40 x 45 x 12.5	33 x 29 x 10.5	33 x 29 x 10.5	

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

² Depending on the type of calculation, frame rate may vary

³ Due to rolling shutter, the actual minimum exposure time to capture the whole beam will be limited by the beam size. The larger the beam, the longer the required minimum exposure time



BeamPro square format

The most natural shape for circular beams

Models	BP11.11	BP11.11+	BP12.12	BP12.12+
Sensor size (mm) ↗	 11.2 x 11.2	 11.2 x 11.2	 12.3 x 12.3	 12.3 x 12.3
Sensor format	L 1"	L 1"	L 1.1"	L 1.1"
Spectral range (nm)	375 – 1100 190 – 1100 with UV option			
Resolution	2048 x 2048 4.2 Mpx	2056 x 2056 4.2 Mpx	2256 x 2256 5.1 Mpx	4512 x 4512 20.3 Mpx
Pixel size (µm)	5.50	5.48	5.48	2.74
Shutter type	Global	Global	Global	Global
Minimum beam diameter (∅ FWHM, µm) ¹	29	28	28	14
Maximum acquisition frame rate (fps) ²	80	18	18	18
Exposure time min (µs)	40	20	20	20
max (s)	1	1	1	1
Dynamic (dB)	58	71	71	71
Price	■ ■	■ ■	■ ■ ■	■ ■ ■
Sensor type	CMOS			
Bit depth	12 / 16 (HDR option)			
PC Interface	USB 3.1			
Synchronization	Yes (with the Trigger option)			
Dimensions (mm)	36 x 39 x 46	36 x 39 x 46	36 x 39 x 46	36 x 39 x 46





¹ The minimum beam diameters are specified for a precision of measurement better than 1%. Smaller beam diameter can be measured but the error will progressively increase

² Depending on the type of calculation, frame rate may vary



BeamPro SWIR range

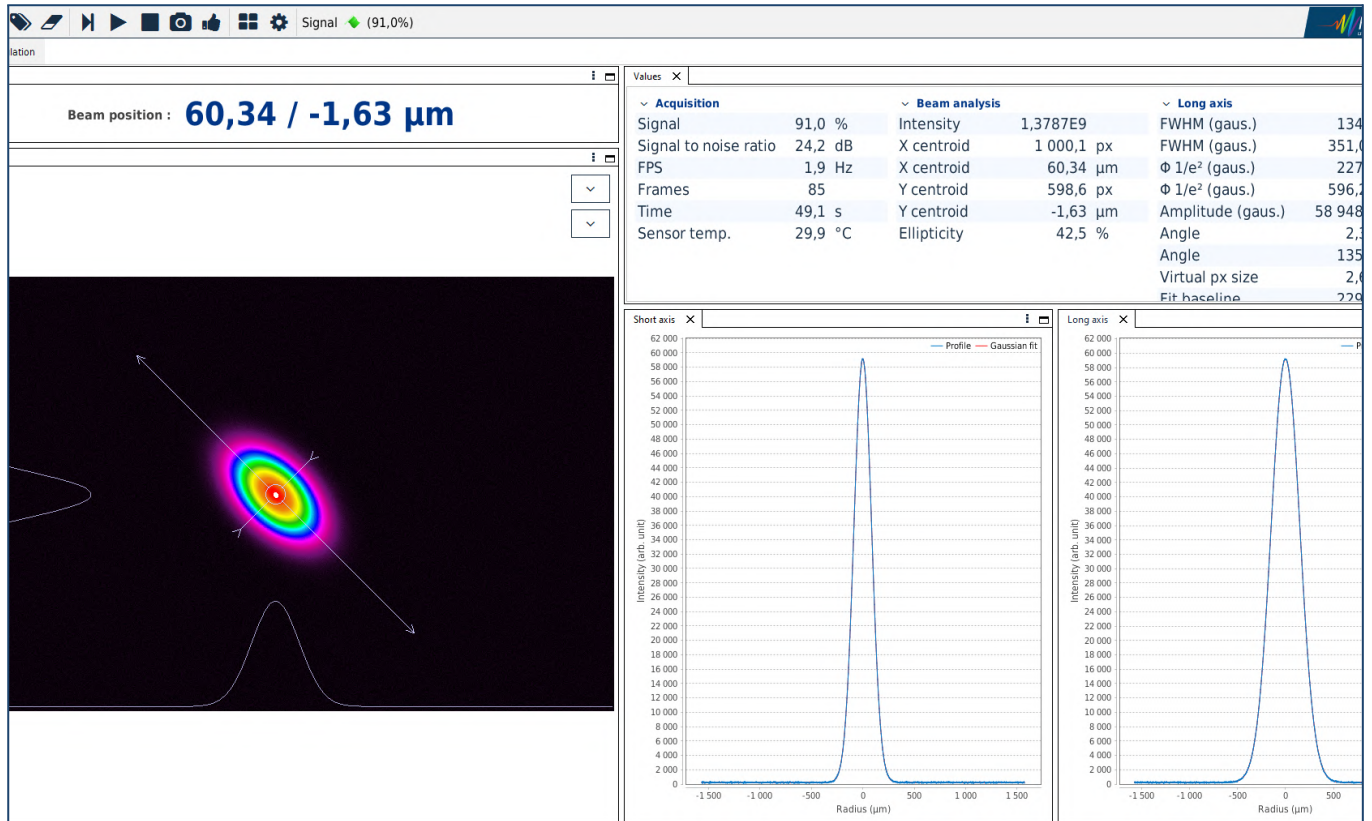
Wavelength from 900 to 1700 nm

Models	SWIR 5.4	SWIR 10.8	SWIR 13.10	SWIR 21.17
Sensor size (mm) ↗	 4.8 x 3.8	 9.6 x 7.7	 12.8 x 10.2	 21.0 x 17.0
Sensor format	S 1/2"	L 1"	L 1"	L+ APS-C
Spectral range (nm)	900 - 1700			
Resolution	320 x 256 0.08 Mpx	640 x 512 0.3 Mpx	1280 x 1024 1.3 Mpx	640 x 512 0.3 Mpx
Pixel size (µm)	15.0	15.0	10.0	33.0
Shutter type	Global	Global	Global	Global
Minimum beam diameter (Ø FWHM, µm) ¹	75	75	50	270
Maximum acquisition frame rate (fps) ²	1000	230	60	230
Exposure time min (µs) max (s)			10 0.5	
Dynamic (dB)	63	63	61	63
Price	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■
Sensor type	InGaAs			
Bit depth	14			
PC Interface	USB 3.1			
Synchronization	Yes (with the Trigger option)			
Dimensions (mm)	46 x 46 x 57	46 x 46 x 57	58 x 58 x 70	46 x 46 x 57

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² Depending on the type of calculation, frame rate may vary

Thanks to a highly optimized C++ and Java architecture, the STAR software is fast, touchscreen-enabled, intuitive and user-friendly.



Live extraction of beam properties, even with resolutions larger than 20 Mpix



Several parameters and methods supported (ISO calculation included)



Enhanced background & hot pixels treatment, for optimum dynamic and signal to noise ratio



Client / Server interface, allowing remote control through network



Advanced logging and permanent access to 10 last acquisitions



Live comparison with up to 10 different reference acquisitions



1-click, completely configurable, export assistant