



# Programmable focusing optics

Technical data

**PFO 14****PFO 20****PFO 33****LASER PARAMETERS**

WAVELENGTH	-	-	-
POWER	up to 2000 W (cw)	up to 6000 W (cw)	up to 12000 W (cw)
NUMERICAL APERTURE	typ. 0.11 / max. 0.12	typ. 0.11 / max. 0.12	typ. 0.11 / max. 0.12
LASER LIGHT CABLE TYPE	LLK-D, LLK-B, LLK-A	LLK-D	LLK-D

**OPTICS CONFIGURATION <sup>1</sup>**

COLLIMATION	35 / 56 mm	90 mm (TruDisk, TruMicro 7000, TruFiber Multi Mode, TruFiber BrightLine Mode) 100 / 175 mm (TruFiber Single Mode)	140 mm (TruDisk, TruFiber Multi Mode, TruFiber BrightLine Mode, TruMicro 7000) 175 mm (TruMicro 7000) 150 / 200 / 300 mm (TruFiber Single Mode)
FOCAL LENGTH	100 / 160 / 163 / 254 / 330 / 420 mm	100 / 135 / 160 / 264 / 315 / 400 mm	255 / 345 / 450 mm (Standard) 160 / 265 / 345 / 450 / 550 / 700 mm (High Brightness)
Z STROKE FOR FOCAL LENGTH OF LENS	-	-	-
FIELD SIZE (ELLIPSE Y X X) FOR FOCAL LENGTH OF LENS	f100: 47 mm x 18 mm f160: 110 mm x 75 mm f163: 110 mm x 70 mm f254: 170 mm x 120 mm f330: 220 mm x 178 mm f420: 286 mm x 230 mm	-	-
FIELD SIZE (ELLIPSE Y X X) FOR LENS FOCAL LENGTH FOR TRUDISK, TRUMICRO 7000, TRUFIBER MULTI MODE ≥ 100 MM	-	-	f255: 180 mm x 112 mm f345: 244 mm x 150 mm f450: 320 mm x 196 mm
FIELD SIZE (ELLIPSE Y X X) FOR LENS FOCAL LENGTH FOR TRUDISK, TRUMICRO 7000, TRUFIBER MULTI MODE/SINGLE MODE/BRIGHTLINE MODE HIGH BRIGHTNESS OBJECTIVE	-	-	f160 HB: 80 mm x 57 mm f265 HB: 140 mm x 102 mm f345 HB: 208 mm x 152 mm f450 HB: 306 mm x 208 mm f550 HB: 388 mm x 257 mm f700 HB: 570 mm x 370 mm
FIELD SIZE (ELLIPSE Y X X) FOR FOCAL LENGTH OF LENS FOR TRUFIBER/TRUDISK IR/TRUMICRO 7000	-	f100: 51 mm x 37 mm f135: 78 mm x 57 mm f160: 92 mm x 71 mm f264: 180 mm x 148 mm f315: 250 mm x 188 mm f400: 320 mm x 237 mm	-
FIELD SIZE (ELLIPSE Y X X) FOR FOCAL LENGTH OF LENS FOR TRUDISK 515 NM	-	f100: 49 mm x 36 mm f135: 75 mm x 54 mm f160: 89 mm x 68 mm f264: 180 mm x 144 mm	f160 HB: 77 mm x 57 mm f255: 172 mm x 108 mm f265 HB: 140 mm x 102 mm f345: 234 mm x 145 mm f345 HB: 202 mm x 144 mm f450: 312 mm x 190 mm

**STRUCTURAL DESIGN**

DIMENSIONS (W X H X D)	278 mm x 391 mm x 202 mm (configuration example with fc56 and f160)	227 mm x 202 mm x 197 mm (configuration example with fc90 and f264)	336 mm x 340 mm x 227 mm (configuration example with fc140 and f450)
WEIGHT	15 kg	Approximately 30 kg	< 35 kg < 38 kg with OCT scanner

**COMPATIBILITY**

AVAILABLE LASERS	TruDiode, TruDisk, TruMicro	TruDisk, TruFiber multiple mode and single mode, TruMicro 7000	TruDisk, TruFiber, TruMicro
AVAILABLE SENSOR SYSTEM	-	VisionLine Cam/Basic/Detect/Project, CalibrationLine Power/Focus	VisionLine Cam/Basic/Detect, VisionLine OCT Detect/Check, CalibrationLine

**OPTIONS**

**PFO 14****PFO 20****PFO 33**

## AVAILABLE OPTIONS

Crossjet, camera monitoring

Crossjet, MVE nozzle, camera monitoring, sensor interface, lighting, smoke bell, beam shaping for green lasers, Simple Coordination PFO (SCP) with encoder

Crossjet, dual Crossjet, MVE nozzle, smoke bell, camera monitoring, sensor interface, lighting, protective glass monitoring unit, Simple Coordination PFO (SCP) with encoder, multifocus element, beam shaping for green lasers

## AVAILABLE SOFTWARE OPTIONS

TruTops PFO, PFO Smart Teach App

TruTops PFO, PFO Smart Teach App, Real-time Contour Check (RCC)

TruTops PFO, PFO Smart Teach App, Real-time Contour Check (RCC)

**PFO 3D****PFO SF****LASER PARAMETERS**

## WAVELENGTH

-

-

## POWER

up to 8000 W (cw)

PFO SF20: to 8000 W (cw)  
PFO SF33: to 12000 W (cw)

## NUMERICAL APERTURE

typ. 0.11 / max. 0.12

typ. 0.11 / max. 0.12

## LASER LIGHT CABLE TYPE

LLK-D

LLK-D

**OPTICS CONFIGURATION <sup>1</sup>**

## COLLIMATION

138 mm

PFO SF20: 90 mm (TruDisk, TruMicro 7000, TruFiber Multi Mode)  
PFO SF20: 150 / 200 mm (TruFiber Single Mode)  
PFO SF33: 140 mm (TruDisk, TruMicro 7000, TruFiber Multi Mode, TruFiber BrightLine Mode)  
PFO SF33: 300 mm (TruFiber Single Mode)

## FOCAL LENGTH

255 / 345 / 450 / 600 / 900 mm

200 / 250 / 300 / 400 / 500 / 600 mm

## Z STROKE FOR FOCAL LENGTH OF LENS

f345: ± 40 mm  
f450: ± 70 mm  
f600: ± 100 mm  
f900: ± 220 mm

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## FIELD SIZE (ELLIPSE Y X X) FOR FOCAL LENGTH OF LENS

f255: 174 mm x 102 mm (z=0)  
f345: 240 mm x 140 mm (z=0)  
f450: 320 mm x 190 mm (z=0)  
f900: 525 mm x 340 mm (z=0)f200: 11 mm x 17 mm  
f250: 14 mm x 21 mm  
f300: 17 mm x 25 mm  
f400: 22 mm x 34 mm  
f500: 28 mm x 42 mm  
f600: 28 mm x 42 mm

## FIELD SIZE (ELLIPSE Y X X) FOR LENS FOCAL LENGTH FOR TRUDISK, TRUMICRO 7000, TRUFIBER MULTI MODE ≥ 100 MM

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## FIELD SIZE (ELLIPSE Y X X) FOR LENS FOCAL LENGTH FOR TRUDISK, TRUMICRO 7000, TRUFIBER MULTI MODE/SINGLE MODE/BRIGHTLINE MODE HIGH BRIGHTNESS OBJECTIVE

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## FIELD SIZE (ELLIPSE Y X X) FOR FOCAL LENGTH OF LENS FOR TRUFIBER/TRUDISK IR/TRUMICRO 7000

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## FIELD SIZE (ELLIPSE Y X X) FOR FOCAL LENGTH OF LENS FOR TRUDISK 515 NM

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**STRUCTURAL DESIGN**

## PFO 3D

## PFO SF

DIMENSIONS (W X H X D)

412 mm x 266 mm x 366 mm

223 mm x 200 mm x 198 mm  
(Scanner head without objective lens)  
120 mm x 195 mm x 252 mm (PFO control unit)

WEIGHT

35 kg

13 kg (Scanner head)  
4 kg (PFO control unit)

### COMPATIBILITY

AVAILABLE LASERS

TruDisk

PFO SF 20: TruDisk, TruMicro 7000, TruFiber multiple mode, TruFiber single mode  
PFO SF 33: TruDisk, TruMicro 7000, TruFiber multimode, TruFiber single mode, TruFiber BrightLine Mode

AVAILABLE SENSOR SYSTEM

VisionLine, CalibrationLine, SeamLine Remote, OCT seam position control

VisionLine Cam/Basic/Detect, CalibrationLine

### OPTIONS

AVAILABLE OPTIONS

I-PFO, crossjet, MVE nozzle, smoke bell, lighting version

Crossjet, MVE nozzle, various shielding gas nozzles, camera monitoring, sensor interface, lighting, protective glass contamination monitoring, coolant monitor, adjustable line laser

AVAILABLE SOFTWARE OPTIONS

TruTops I-PFO and TruTops PFO, PFO Smart Teach App

TruTops PFO, PFO Smart Teach App, Real-time Contour Check (RCC)

## Footnotes

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1 — Other optics configurations are available on request.

2 — Other wavelengths are available on request.