

Supplementary information for: Marco Wende, Jule Grunewald, Ada Bachmann, Fabian Wilde, Michael Heymann, Alois M. Herkommer, Valese Aslani, and Andrea Toulouse. "Illumination and microscopy combined in a single fibre bundle by 3D-printed micro-optics". Light: Advanced Manufacturing

Supplement 1

Endo-microscope optical system key parameters

SURFACE DATA SUMMARY:

Surf	Type	Radius	Thickness	Glass	Clear Diam	Mech Diam
OBJ	STANDARD	Infinity	0		0,176	0,176
1	STANDARD	Infinity	0,0175	IP-VISIO	0,176	0,221216
2	EVENASPH	Infinity	0,0875	IP-S	0,1853595	0,221216
3	EVENASPH	Infinity	0,105		0,221216	0,221216
4	BINARY_2	-0,2050855	0,175	IP-S	0,2521389	0,3
5	BINARY_2	0,2073333	0,28		0,3	0,3
6	BINARY_2	0,2350033	0,14	IP-S	0,361941	0,4
7	BINARY_2	-0,24975	0,1575		0,3847199	0,4
STO	BINARY_2	-0,231891	0,175	IP-S	0,3201479	0,4
9	EVENASPH	0,2462638	0	1,4	0,2390624	0,4
10	EVENASPH	0,2462638	0,2322676	1,4	0,2390624	0,4
IMA	STANDARD	Infinity		1,4	0,1288532	0,4

INDEX OF REFRACTION DATA:

Surf	Glass	WVL 0,62500000
0		1,0000000000
1	IP-VISIO	1,5096412075
2	IP-S	1,5095436306
3		1,0000000000
4	IP-S	1,5095436306
5		1,0000000000
6	IP-S	1,5095436306
7		1,0000000000
8	IP-S	1,5095436306

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9	Immersion oil	1,4000000000
10	Immersion oil	1,4000000000
11	Immersion oil	1,4000000000

Surface OBJ STANDARD

Surface 1 STANDARD

Surface 2 EVENASPH

Coefficient on r^2	:	0
Coefficient on r^4	:	0
Coefficient on r^6	:	0
Coefficient on r^8	:	0
Coefficient on r^{10}	:	0
Coefficient on r^{12}	:	0
Coefficient on r^{14}	:	0
Coefficient on r^{16}	:	0

Surface 3 EVENASPH

Coefficient on r^2	:	-2,0190337
Coefficient on r^4	:	28,322073
Coefficient on r^6	:	0
Coefficient on r^8	:	0
Coefficient on r^{10}	:	0
Coefficient on r^{12}	:	0
Coefficient on r^{14}	:	0
Coefficient on r^{16}	:	0

Surface 4 BINARY_2

Diffraction Order	:	0
Coefficient on r^2	:	-2,529061
Coefficient on r^4	:	30,285543
Coefficient on r^6	:	2788,2899

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Coefficient on r^8 : 0
Coefficient on r^{10} : 0
Coefficient on r^{12} : 0
Coefficient on r^{14} : 0
Coefficient on r^{16} : 0
Maximum term # : 0
Normalization Radius : 70
Aperture : Floating Aperture
Maximum Radius : 0,12606943

Surface 5 BINARY_2

Diffraction Order : 0
Coefficient on r^2 : -6,8469133
Coefficient on r^4 : -11,335935
Coefficient on r^6 : -328,22155
Coefficient on r^8 : 0
Coefficient on r^{10} : 0
Coefficient on r^{12} : 0
Coefficient on r^{14} : 0
Coefficient on r^{16} : 0
Maximum term # : 0
Normalization Radius : 70
Aperture : Floating Aperture
Maximum Radius : 0,15

Surface 6 BINARY_2

Diffraction Order : 0
Coefficient on r^2 : -2,1069044
Coefficient on r^4 : 35,08313
Coefficient on r^6 : -1212,2455
Coefficient on r^8 : 0
Coefficient on r^{10} : 0

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Coefficient on r^{12} : 0
Coefficient on r^{14} : 0
Coefficient on r^{16} : 0
Maximum term # : 0
Normalization Radius : 70

Surface 7 BINARY_2

Diffraction Order : 0
Coefficient on r^2 : 2,0248669
Coefficient on r^4 : -15,311717
Coefficient on r^6 : 10,300259
Coefficient on r^8 : 0
Coefficient on r^{10} : 0
Coefficient on r^{12} : 0
Coefficient on r^{14} : 0
Coefficient on r^{16} : 0
Maximum term # : 0
Normalization Radius : 70

Surface STO BINARY_2

Diffraction Order : 0
Coefficient on r^2 : 5,9664893
Coefficient on r^4 : 7,6502392
Coefficient on r^6 : -218,25199
Coefficient on r^8 : 0
Coefficient on r^{10} : 0
Coefficient on r^{12} : 0
Coefficient on r^{14} : 0
Coefficient on r^{16} : 0
Maximum term # : 0
Normalization Radius : 70

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Surface 9 EVENASPH

Coefficient on r^2	:	0
Coefficient on r^4	:	0
Coefficient on r^6	:	0
Coefficient on r^8	:	0
Coefficient on r^{10}	:	0
Coefficient on r^{12}	:	0
Coefficient on r^{14}	:	0
Coefficient on r^{16}	:	0

Surface 10 EVENASPH

Coefficient on r^2	:	0
Coefficient on r^4	:	0
Coefficient on r^6	:	0
Coefficient on r^8	:	0
Coefficient on r^{10}	:	0
Coefficient on r^{12}	:	0
Coefficient on r^{14}	:	0
Coefficient on r^{16}	:	0

Surface IMA STANDARD