

Table S1. Input parameters of the designed ellipsoidal mirror scanning system for Zemax simulation.

Surf: Type		Comment	Radius	Thickness	Glass	Semi-Diameter	Conic	Diffract Order	Decenter X	Decenter Y	Tilt About X	Order
OBJ	Standard		Infinity	Infinity		0	0.00					
STO	Standard		Infinity	30.00		12.88	0.00					
2*	Standard	f=200mm	67.14	12.00	N-LAK22	25.4	0.00					
3*	Standard		-87.57	3.00	N-SF6HT	25.4	0.00					
4*	Standard		234.27	142.95		25.4	0.00					
5	Cordinate Break			0.00	-	0.00			0.000	0	-23.597	0
6*	Standard	RM No.1	Infinity	0.00	MIRROR	2.95	0.00					
7	Cordinate Break			-158.28	-	0.00			0.000	0	23.597	0
8	Standard	EM No.1	191.30	0.00	MIRROR	129.30	-0.043					
9	Cordinate Break			241.72	-	0.00			0.000	0	0.000	0
10	Cordinate Break			0.00	-	0.00			0.000	0	-90.000	0
11	Cordinate Break			0.00	-	0.00			0.000	0	0.000	0
12*	Standard	RM No.2	Infinity	0.00	MIRROR	7.17	0.00					
13	Cordinate Break			0.00	-	0.00			0.000	0	0.000	1
14	Cordinate Break			-323.48	-	0.00			0.000	0	270.000	0
15	Standard	EM No.2	143.89	0.00	MIRROR	145.1	-0.308					
16	Cordinate Break			92.52	-	0.00			0.000	0	0.000	1
17	Cordinate Break			0.00	-	0.00			0.000	0	90.000	0
18*	Paraxial	EYE		0.00		1.95			16.051	1		
19	Cordinate Break			0.00	-	0.00			0.000	0	0.000	0
20	Zernike Standard Phase	Aberration	Infinity	0.00		1.95	0.00	-1	1 (Extrapolate)			
21	Standard		Infinity	16.05		1.95	0.00					
22	Standard	Defocus	Infinity	-0.07		0.07	0.00					
IMA	Standard		Infinity			0.07	0.00					

The Table shows the Zemax parameters of the ellipsoidal mirror system. For the Zernike Standard Phase, the Diffract Order is -1 the Extrapolate is 1.