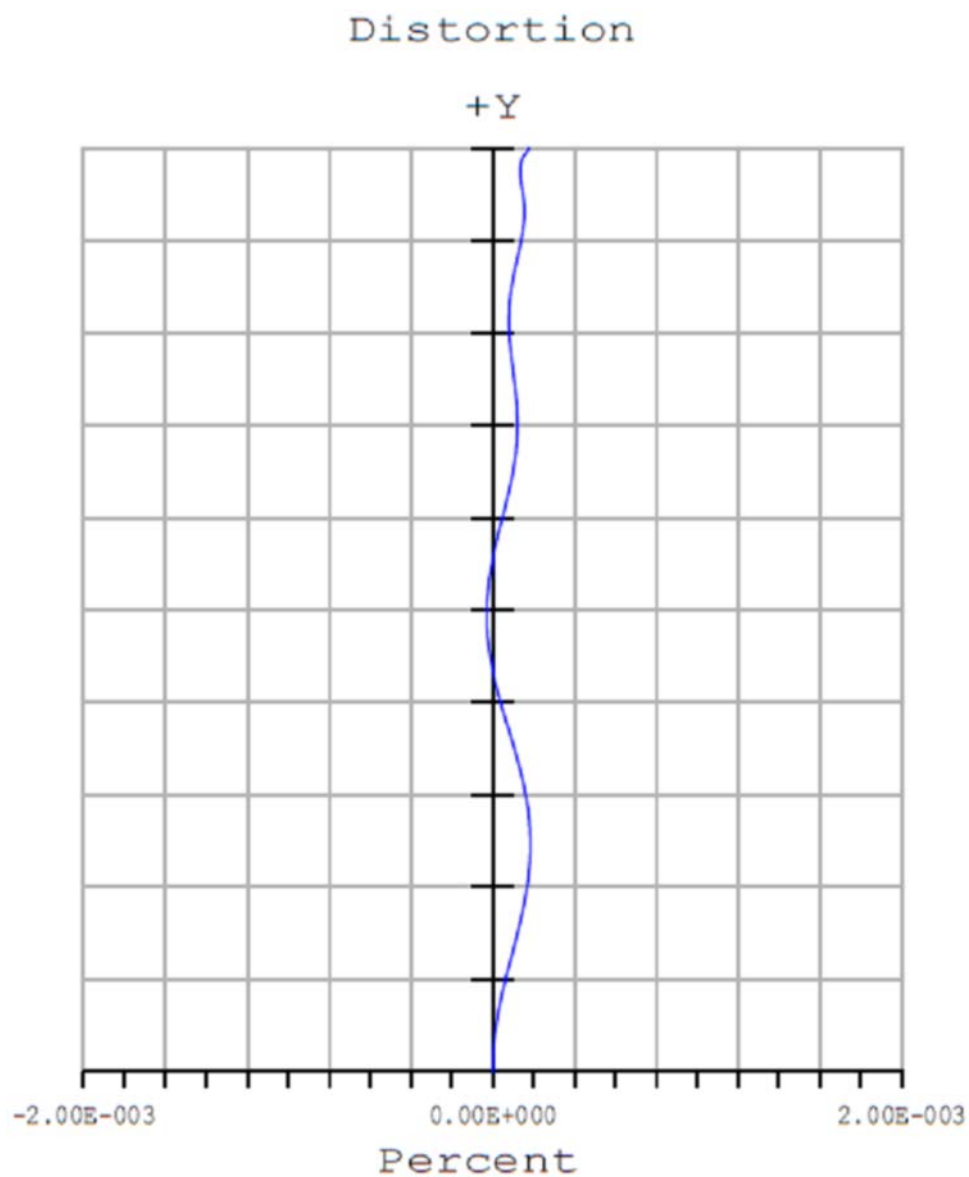


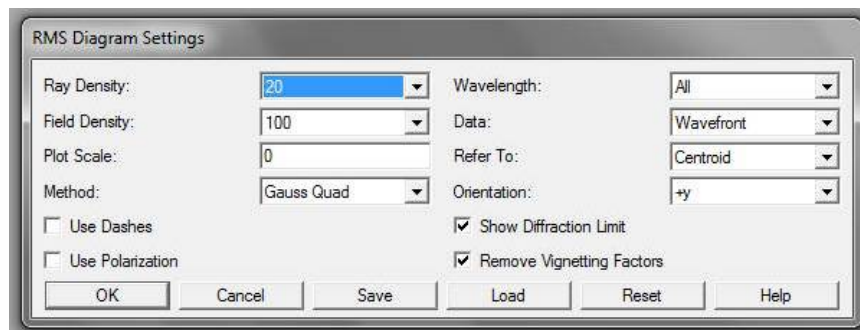
**RMS wavefront error (157 nm waves) for example 2  
(Table2, Fig. 5) in Terasawa**



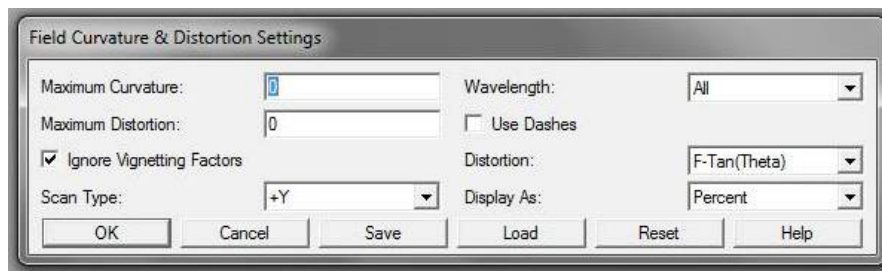
**Distortion for Example 2, Table 2, in Terasawa.  
The max distortion scale is 0.002 %**

## Analysis of Example 2 in Table 2 and Figure 5 in Terasawa

- 1) Analysis performed with Zemax 13 Release 2 SP1 Professional.
- 2) The lens prescription as input in Zemax is given below.
- 3) Ray aiming to the aperture stop was used.
- 4) RMS wavefront error was generated with the settings:



- 5) Distortion plot was generated with the settings:



SURFACE DATA SUMMARY:

Surf	Type	Radius	Thickness	Glass	Diameter	Conic
OBJ	STANDARD	Infinity	75.685		130	0
1	EVENASPH	297.627	19.775	1.560000, 0.000000	156.7034	0
2	STANDARD	-1115.696	328.484		156.5714	0
3	EVENASPH	-160.548	18	1.560000, 0.000000	120.2976	0
4	STANDARD	2147.16	22.18		125.0863	0
5	EVENASPH	-203.139	-22.18	MIRROR	128.2715	0 M1
6	STANDARD	2147.16	-18	1.560000, 0.000000	117.9967	0
7	EVENASPH	-160.548	-313.164		105.9657	0
8	STANDARD	Infinity	365.344	MIRROR	165.4502	0 M2
9	STANDARD	1040.329	38.055	1.560000, 0.000000	268.1259	0
10	EVENASPH	-387.846	1		269.5584	0
11	EVENASPH	190.26	45.524	1.560000, 0.000000	269.0574	0
12	STANDARD	634.071	120.149		265.4429	0
13	STANDARD	249.471	18	1.560000, 0.000000	177.975	0
14	EVENASPH	127.136	325.385		155.7477	0
STO	STANDARD	Infinity	1		96.13229	0 stop
16	STANDARD	234.78	33.014	1.560000, 0.000000	100.0504	0
17	EVENASPH	-336.281	1		105.4321	0
18	STANDARD	144.606	35	1.560000, 0.000000	110.8094	0
19	STANDARD	968.534	16.804		109.1169	0
20	EVENASPH	-793.316	35	1.560000, 0.000000	108.6517	0
21	STANDARD	-100	1		111.3648	0
22	EVENASPH	88.381	25	1.560000, 0.000000	91.5245	0
23	STANDARD	Infinity	32.94669		81.25708	0
IMA	STANDARD	Infinity			32.50053	0

SURFACE DATA DETAIL:

Surface OBJ STANDARD

Surface 1 EVENASPH

Coefficient on  $r^2$  : 0  
Coefficient on  $r^4$  : 1.372961e-008  
Coefficient on  $r^6$  : 3.473252e-013  
Coefficient on  $r^8$  : -3.19572e-016  
Coefficient on  $r^{10}$  : 9.094243e-020  
Coefficient on  $r^{12}$  : -1.434764e-023  
Coefficient on  $r^{14}$  : 1.206555e-027  
Coefficient on  $r^{16}$  : -4.210407e-032

Surface 2 STANDARD

Surface 3 EVENASPH

Coefficient on  $r^2$  : 0  
Coefficient on  $r^4$  : 2.151239e-008  
Coefficient on  $r^6$  : 9.541648e-012  
Coefficient on  $r^8$  : 4.776084e-016  
Coefficient on  $r^{10}$  : 7.380865e-020  
Coefficient on  $r^{12}$  : -2.06359e-023  
Coefficient on  $r^{14}$  : 4.825958e-027  
Coefficient on  $r^{16}$  : -5.593776e-031

Surface 4 STANDARD

Surface 5 EVENASPH M1

Coefficient on  $r^2$  : 0  
Coefficient on  $r^4$  : 4.532898e-009  
Coefficient on  $r^6$  : 1.823606e-012  
Coefficient on  $r^8$  : 1.222571e-016  
Coefficient on  $r^{10}$  : 1.631434e-020  
Coefficient on  $r^{12}$  : -8.711867e-025  
Coefficient on  $r^{14}$  : 2.964757e-028  
Coefficient on  $r^{16}$  : 1.525109e-033

Surface 6 STANDARD

Surface 7 EVENASPH

Coefficient on  $r^2$  : 0  
Coefficient on  $r^4$  : 2.151239e-008  
Coefficient on  $r^6$  : 9.541648e-012  
Coefficient on  $r^8$  : 4.776084e-016

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