

***** inputs *****

Material: Be
E (Photon Beam Energy) [eV]: 7400.0000
R (Holes' curvature radius) [mm]: 0.200000
N (Number of holes): 7.00000
p (source-CRL distance) [m]: 66.9000
d (inter-hole distance) [microns]: 50.0000
S Sorce Size RMS [microns]: 10.0000

***** references *****

Ref 1: P. Elleaume, NIM A412 (1988) pp.483-505
Ref 2: A. Snigirev et al. Applied Optics (1998) pp.653-656

***** outputs *****

Delta and Beta from DABAX file: flf2_Windt.dat
Mu from DABAX file: CrossSec_XCOM.dat
Delta: 6.2331019e-06
Beta: 2.8926777e-09
Mu [cm⁻¹]: 2.5685619

Focal distance [m] $F=R/(2N \Delta)$: 2.2919110
q CRL-focus distance [m] $(1/F)=(1/p)+(1/q)$: 2.3732144

Effective "transparent" lens aperture [mm] (Ref 2 eq.15): 0.17706058
Effective "absorber" lens aperture [mm] (Ref 2 eq. 16): 2.9830873
Diffraction Limited Resolution [microns] (Ref 2 eq. 18): 2.2452511
Ideal RMS image size [microns] $S^*(q/p)$: 0.35474056
RMS lens acceptance [mm] (Ref 1 eq. 9) : 0.23583376

Nmax (maximum number of holes) (Ref 1 eq. 21): 198
Ideal Gain: (Ref 1 eq. 19) 81.657526
Maximum Ideal Gain (with $N=N_{max}$, Ref 1 eq. 21): 2743.5589
Real Gain (Ref 1 eq. 22): 472.39726

***** inputs *****

Material: Be
E (Photon Beam Energy) [eV]: 7400.0000
R (Holes' curvature radius) [mm]: 1.00000
N (Number of holes): 36.0000
p (source-CRL distance) [m]: 66.9000
d (inter-hole distance) [microns]: 50.0000
S Sorce Size RMS [microns]: 10.0000

***** references *****

Ref 1: P. Elleaume, NIM A412 (1988) pp.483-505
Ref 2: A. Snigirev et al. Applied Optics (1998) pp.653-656

***** outputs *****

Delta and Beta from DABAX file: flf2_Windt.dat
Mu from DABAX file: CrossSec_XCOM.dat
Delta: 6.2331019e-06
Beta: 2.8926777e-09
Mu [cm⁻¹]: 2.5685619

Focal distance [m] $F=R/(2N \Delta)$: 2.2282468
q CRL-focus distance [m] $(1/F)=(1/p)+(1/q)$: 2.3050204

Effective "transparent" lens aperture [mm] (Ref 2 eq.15): 0.39314094
Effective "absorber" lens aperture [mm] (Ref 2 eq. 16): 2.9413637
Diffraction Limited Resolution [microns] (Ref 2 eq. 18): 0.98214666
Ideal RMS image size [microns] $S*(q/p)$: 0.34454714
RMS lens acceptance [mm] (Ref 1 eq. 9) : 0.23253522

Nmax (maximum number of holes) (Ref 1 eq. 21): 201
Ideal Gain: (Ref 1 eq. 19) 414.07921
Maximum Ideal Gain (with $N=N_{max}$, Ref 1 eq. 21): 2743.5589
Real Gain (Ref 1 eq. 22): 743.39379