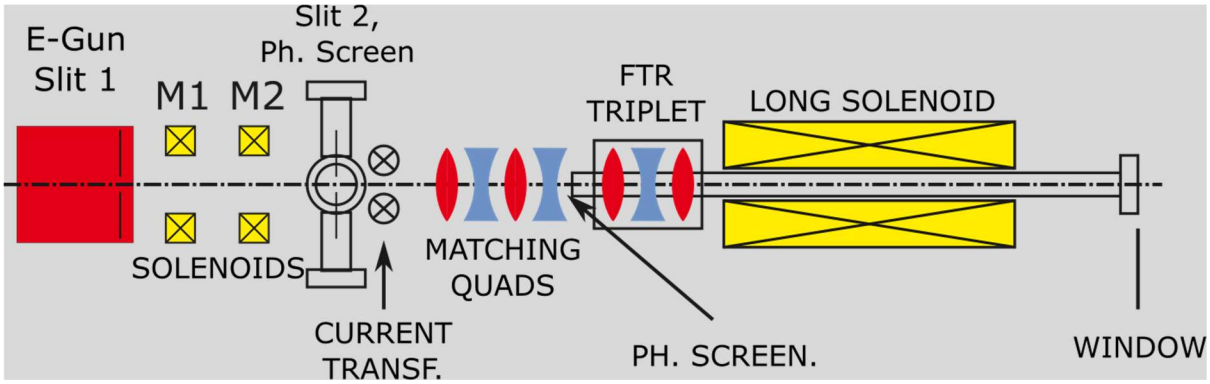
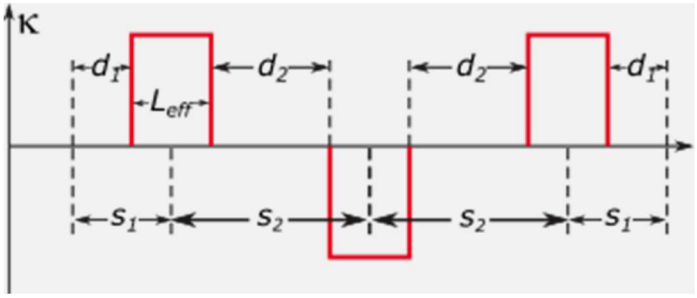
MATCHING PARAMETERS FOR BUROV-DANILOV FTR SYMMETRIC TRIPLET AT 5 keV, 0 mA: SLIT 3, 12 CM SPACING BETWEEN MATCHING QUADS, (PBOLab SOLUTION)

S. Bernal and D. Sutter, Feb 22, 2023 (2 pages)



ELEMENT	CENTER LOCATION Z (m)	EFFECTIVE GRADIENT (T/m)	CURRENT (A)
SLIT3: 10×1.0 mm	0.0000	N/A	N/A
MATCH QUAD Q1	0.2100	− 0.037913	− 1.371
MATCH QUAD Q2	0.3300	+ 0.047133	+ 1.704
MATCH QUAD Q3	0.4500	− 0.028188	− 1.019
MATCH QUAD Q4	0.5700	− 0.010840	− 0.392
TRIPLET QUAD QR1	0.6941	− 0.017229	− 0.623
TRIPLET QUAD QR2	0.9128	+ 0.020904	+ 0.756
TRIPLET QUAD QR3	1.1315	− 0.017229	− 0.623
6.85 G LONG SOLENOID CTR	1.8573	N/A	0.313

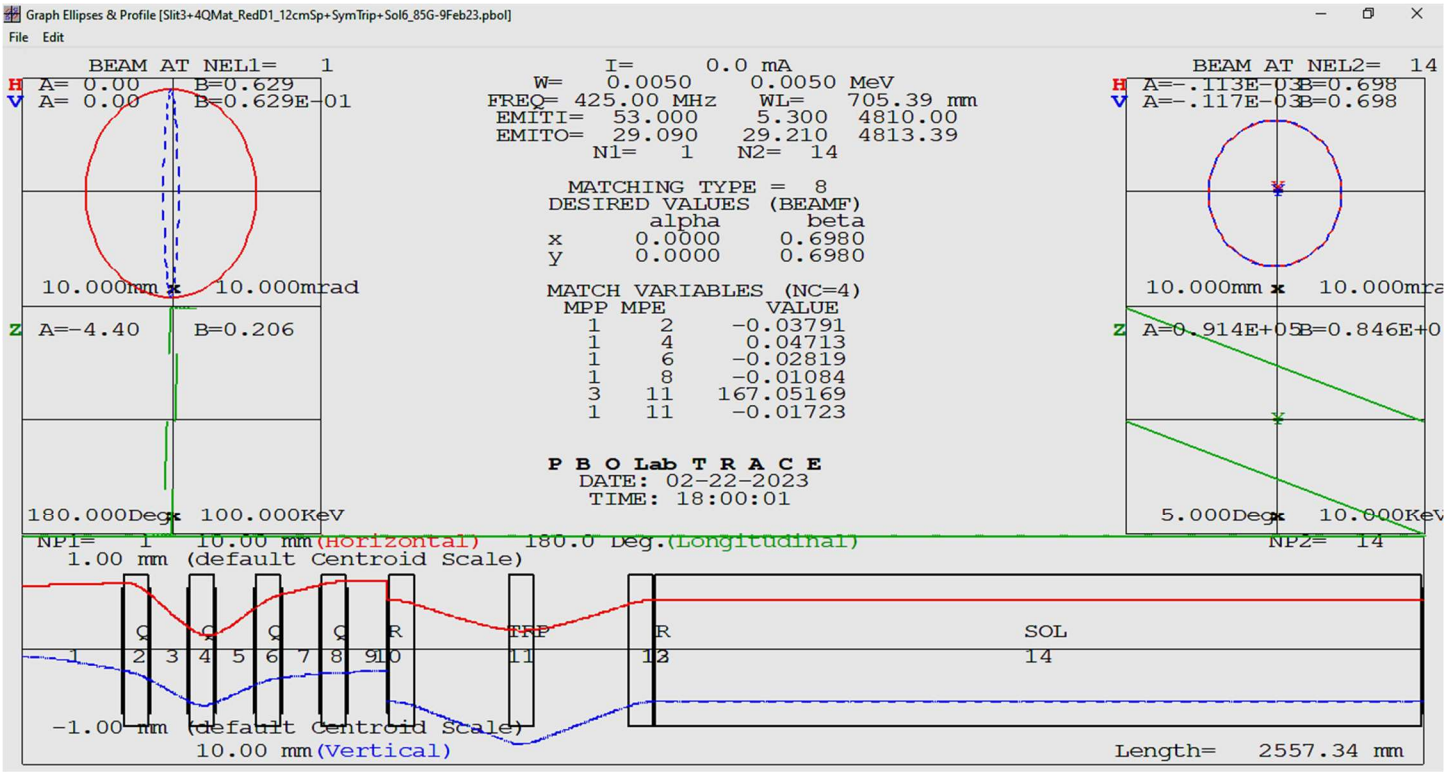


Triplet Configuration (Single Element in PBOLab)

ELEMENT	LENGTH (m)
DRIFT D1 = d_1	0.07250
QUAD QR1 = L_{eff}	0.05164
DRIFT D2 = d_2	0.16705
QUAD QR2 = L_{eff}	0.05164
DRIFT D3 = d_2	0.16705
QUAD QR3 = L_{eff}	0.05164
DRIFT D4 = d_1	0.00000

INITIAL CONDITIONS (Courant-Snyder parameters at z = 0, SLIT 3):
$\alpha_{x1} = \alpha_{y1} = 0$; $\beta_{x1} = 0.629\,\text{m}, \beta_{y1} = 0.0629\,\text{m}$; $\varepsilon_x = 53\,\text{mm-mrad}$, $\varepsilon_y = 5.3\,\text{mm-mrad}$ **,** rms emittances**.** See ApertureCalcFlatBeams-5keV.pdf and Slit3+4QMat_RedD1_12cmSp+SymTrip+Sol6_85G-9Feb23.pbol or *.t3d version.

SYMMETRIC TRIPLET MATCHING CONDITIONS: $\alpha_{x1} = \alpha_{y1} = 0$; $\beta_{x1} = 0.698\,\text{m}, \beta_{y1} = 0.698\,\text{m}$; $\varepsilon_x = 53\,\text{mm-mrad}$, $\varepsilon_y = 5.3\,\text{mm-mrad}$ **.**

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ER=    0.51100   Q=-1.    W=    0.00500   XI=    0.000
EMITI=     53.0000      5.3000    4810.0000
BEAMI =     0.0000      0.6290      0.0000      0.0629     -4.3974      0.2060
BEAMCI=     0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
BEAMC =     0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
BEAMF =     0.0000      0.6980      0.0000      0.6980      0.0490      1.5097
FREQ=  425.000,  PQEXT=  2.50, ICHROM= 1, IBS= 0 XC=  1.00
XM=  5.0,  XPM= 10.0000,  YM= 10.0,  DPM=180.,  DWM=  100.,  DPP= 180.
N1=    1,  N2=   14,  SMAX=  1.0,  PQSMAX=  2.5
NEL1 =   1,  NEL2 =  14,  NP1 =   1,  NP2 =  14
MT=  8   NC=  4   LOC=   0   0   0

     MP(1,N)  MP(2,N)   VALUE        MVC      VALUE
        1        2      -.3791E-01

        1        4      0.4713E-01

        1        6      -.2819E-01

        1        8      -.1084E-01

          n  NT(n)   A(1,n)     A(2,n)     A(3,n)     A(4,n)     A(5,n)
          1    1    184.1800
          2    3     -0.0379    51.6400     0.0000     0.0000     0.0000
          3    1     68.3600
          4    3      0.0471    51.6400     0.0000     0.0000     0.0000
          5    1     68.3600
          6    3     -0.0282    51.6400     0.0000     0.0000     0.0000
          7    1     68.3600
          8    3     -0.0108    51.6400     0.0000     0.0000     0.0000
          9    1     72.5000
         10   15     45.0000     1.0000     0.0000     0.0000
         11    7     -0.0172    51.6400   167.0517     0.0209    51.6400
         12   15    -45.0000     1.0000     0.0000     0.0000
         13    1      0.0000
         14    5      6.8500  1400.0000
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