

ECHO 7 UNDULATOR
NLCTA U 55

10/17/2012
BR, LG

Undulator Values(in.)

Undlator Values (mm)

TB	X	Y	Z	TB	X	Y	Y
1	2.521	10.181	11.650	1	64.0334	258.5974	295.92176
2	-2.475	10.180	11.659	2	-62.8650	258.5720	296.13358
3	-2.475	10.182	-11.677	3	-62.8650	258.6228	-296.60369
4	-2.514	10.182	-11.681	4	-63.8556	258.6228	-296.68736
5	0.008	6.931	-14.185	5	0.2032	176.0474	-360.30236
6	-4.987	6.924	-11.681	6	-126.6698	175.8696	-296.69052
7	-4.989	6.920	11.655	7	-126.7206	175.768	296.03487
8	0.026	6.922	14.153	8	0.6604	175.8188	359.48487
9	0.023	-6.928	14.100	9	0.5842	-175.9712	358.14391
10	-4.982	-6.930	11.614	10	-126.5428	-176.022	295.00527
11	-4.991	-6.929	-11.716	11	-126.7714	-175.9966	-297.58852
12	0.008	-6.928	-14.227	12	0.2032	-175.9712	-361.35353

X & Y Optical tooling, Z's from CMM



(X)

MMF
ECHO 7 UND.
USS

10-17-12
BR, LG.

PMIX1 = 5.477

PM4X1 = 5.471

- 20,000 + 1
- 22,000 + 1
- 24,000 + 1
- 23,091 + 1
- 23,742 - 1
- 23,748 - 1
- 29,219 LOS

17.604 Ft

$$\begin{array}{r} 1) \quad 9.094 \\ 17.604 \\ \hline 26.698 \\ 29.219 \\ \hline 2.521 \end{array}$$

$$\begin{array}{r} 2) \quad 14.090 \\ 17.604 \\ \hline 31.694 \\ 29.219 \\ \hline -2.475 \end{array}$$

$$\begin{array}{r} 3) \quad 14.090 \\ 17.604 \\ \hline 31.694 \\ 29.219 \\ \hline -2.475 \end{array}$$

$$\begin{array}{r} 4) \quad 9.101 \\ 17.604 \\ \hline 26.705 \\ 29.219 \\ \hline 2.514 \end{array}$$

$$\begin{array}{r} 5) \quad 11.607 \\ 17.604 \\ \hline 29.211 \\ 29.219 \\ \hline +.008 \end{array}$$

$$\begin{array}{r} 6) \quad 16.602 \\ 17.604 \\ \hline 34.206 \\ 29.219 \\ \hline -4.987 \end{array}$$

$$\begin{array}{r} 7) \quad 16.604 \\ 17.604 \\ \hline 34.208 \\ 29.219 \\ \hline -4.989 \end{array}$$

$$\begin{array}{r} 8) \quad 11.589 \\ 17.604 \\ \hline 29.193 \\ 29.219 \\ \hline +.026 \end{array}$$

$$\begin{array}{r} 9) \quad 11.592 \\ 17.604 \\ \hline 29.196 \\ 29.219 \\ \hline +.023 \end{array}$$

$$\begin{array}{r} 10) \quad 16.597 \\ 17.604 \\ \hline 34.201 \\ 29.219 \\ \hline -4.982 \end{array}$$

$$\begin{array}{r} 11) \quad 16.606 \\ 17.604 \\ \hline 34.210 \\ 29.219 \\ \hline -4.991 \end{array}$$

$$\begin{array}{r} 12) \quad 11.607 \\ 17.604 \\ \hline 29.211 \\ 29.219 \\ \hline +.008 \end{array}$$

Y

MMF
ECHO-7 UNDU LATO
USS

10-17-12
BR, LG

$$\begin{array}{r}
 \text{PM 4 YI} \\
 \hline
 9.078 \\
 1 \text{ ---} \\
 \hline
 10.078 \\
 3.599 \\
 \hline
 13.677
 \end{array}$$

$$\begin{array}{r}
 \text{PM 1 YI} \\
 \hline
 9.080 \\
 1 \text{ ---} \\
 \hline
 10.080 \\
 3.611 \\
 \hline
 13.691
 \end{array}$$

31.728
31.739

U/S TABLE
D/S

13.684 HI

$$\begin{array}{r}
 1) 2.503 \\
 1 \text{ ---} \\
 \hline
 3.503 \\
 13.684 \\
 \hline
 10.181
 \end{array}$$

$$\begin{array}{r}
 2) 2.504 \\
 1 \text{ ---} \\
 \hline
 3.504 \\
 13.684 \\
 \hline
 10.180
 \end{array}$$

$$\begin{array}{r}
 3) 2.502 \\
 1 \text{ ---} \\
 \hline
 3.502 \\
 13.684 \\
 \hline
 10.182
 \end{array}$$

$$\begin{array}{r}
 4) 2.502 \\
 1 \text{ ---} \\
 \hline
 3.502 \\
 13.684 \\
 \hline
 10.182
 \end{array}$$

$$\begin{array}{r}
 5) 5.753 \\
 1 \text{ ---} \\
 \hline
 6.753 \\
 13.684 \\
 \hline
 6.931
 \end{array}$$

$$\begin{array}{r}
 6) 5.760 \\
 1 \text{ ---} \\
 \hline
 6.760 \\
 13.684 \\
 \hline
 6.924
 \end{array}$$

$$\begin{array}{r}
 7) 5.764 \\
 1 \text{ ---} \\
 \hline
 6.764 \\
 13.684 \\
 \hline
 6.920
 \end{array}$$

$$\begin{array}{r}
 8) 5.762 \\
 1 \text{ ---} \\
 \hline
 6.762 \\
 13.684 \\
 \hline
 6.922
 \end{array}$$

$$\begin{array}{r}
 9) 19.612 \\
 1 \text{ ---} \\
 \hline
 20.612 \\
 13.684 \\
 \hline
 -6.928
 \end{array}$$

$$\begin{array}{r}
 10) 19.614 \\
 1 \text{ ---} \\
 \hline
 20.614 \\
 13.684 \\
 \hline
 -6.930
 \end{array}$$

$$\begin{array}{r}
 11) 19.613 \\
 1 \text{ ---} \\
 \hline
 20.613 \\
 13.684 \\
 \hline
 -6.929
 \end{array}$$

$$\begin{array}{r}
 12) 19.612 \\
 1 \text{ ---} \\
 \hline
 20.612 \\
 13.684 \\
 \hline
 -6.928
 \end{array}$$