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Tables of Phase Shifts and Experimental Observables for $p\text{-}^4\text{He}$ Elastic Scattering

by

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TABLES OF PHASE SHIFTS AND EXPERIMENTAL OBSERVABLES FOR

$p\text{-}^4\text{He}$ ELASTIC SCATTERING

by

D. C. Dodder, G. M. Hale, Nelson Jarmie, and E. Witte

ABSTRACT

These tables contain calculated phase shifts and experimental observables for $p\text{-}^4\text{He}$ elastic scattering from 0 - 17 MeV. The phase shifts are given at intervals suitable for linear interpolation.

Elastic scattering of protons on ^4He is frequently used for instrumental calibration and as a proton polarization analyzer. A large body of experimental data has been accumulated for the process. These tables of phase shifts and observables are the results of a study which critically evaluates and analyzes the available data. They are calculated from an energy-dependent R-matrix fit to the data, using 14 energy-independent parameters. Details of this work, including data selection and a comparison of the fit with the data will be given in a forthcoming publication.¹ The phase shifts given here fit the final selected data set with a χ^2 per degree of freedom of 1.001. Phase shifts are given with $\delta \leq 3$. Phase shifts for $\ell \geq 4$ are predicted to be 0 within their uncertainties. The table of observables lists calculated center-of-mass values for the differential cross section $\sigma(\theta)$, analyzing power A_y , and the polarization transfers K_z^x and K_x^x , where the primes denote laboratory coordinates. K_z^x and K_x^x are identical to the Wolfenstein parameters A and R , respectively.

The estimated errors given in the tables are standard deviations and are calculated from the complete covariance matrix for the R-matrix parameters. The phase-shift errors should not be used to calculate uncertainties in predicted values of observables. The errors are highly correlated and we present only the diagonal terms of the phase-shift

error matrix. The most suitable way of calculating the observable uncertainties is to calculate them directly from the R-matrix parameter covariance matrix as we have done for the values in the tables.

The errors are all to be considered as minimum values. We do not believe the present data can determine the values any more precisely. However, inadequacies in the energy parameterization or undetected errors in the data could have resulted in erroneous values of our predictions outside the error estimates. Indeed, new data recently available caused changes in the predicted phase shifts that were larger than the error estimates. Phase shifts from an earlier data set were given in the report LA-6186-MS, which is now superseded by the present report. The main difference is that the new phase shifts correspond to a change in the overall magnitude of the proton polarizations in the neighborhood of 17 MeV.

The intervals given in the table should allow linear interpolation of phase shifts over essentially the entire range. In some regions the observables are changing too rapidly to permit this; however, such regions are probably of less interest for calibration and measurement purposes, and in any event such values of the observables can always be calculated from the phase shifts.

The phase shifts may differ by an inconsequential 180° from those given by other workers. The

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numerical values in both tables have not been rounded to significant figures because of problems in transcription from the computer. The reader clearly should round off values which correspond to errors of more than 2 significant figures.

REFERENCE

1. D. C. Dodder, G. M. Hale, Nelson Jarmie, J. E. Jett, F. W. Keaton, Jr., E. A. Nisley, and E. Witte, "Elastic Scattering of Protons by Helium 4--New Experiments and Analysis," to be published.

0.25 MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/er	A_y	$K_z^{x'}$	$K_x^{x'}$
5	35099.62732 ± 0.02290	-0.00000 ± 0.00000	0.97757 ± 0.00000	-0.06967 ± 0.00000
10	2249.79393 ± 0.00930	-0.00002 ± 0.00000	0.93026 ± 0.00000	-0.13908 ± 0.00000
15	440.55292 ± 0.00404	-0.00006 ± 0.00000	0.97815 ± 0.00000	-0.20791 ± 0.00000
20	142.36760 ± 0.00160	-0.00013 ± 0.00000	0.96120 ± 0.00000	-0.27586 ± 0.00000
25	50.94666 ± 0.00362	-0.00020 ± 0.00000	0.93946 ± 0.00000	-0.34265 ± 0.00000
30	26.03722 ± 0.00030	-0.00026 ± 0.00000	0.91300 ± 0.00000	-0.40797 ± 0.00000
35	15.04074 ± 0.00016	-0.00028 ± 0.00000	0.88164 ± 0.00000	-0.47155 ± 0.00000
40	9.49537 ± 0.00012	-0.00023 ± 0.00000	0.84605 ± 0.00000	-0.53310 ± 0.00000
45	6.06219 ± 0.00014	-0.00010 ± 0.00000	0.80569 ± 0.00000	-0.59234 ± 0.00001
50	4.11014 ± 0.00016	0.00011 ± 0.00000	0.76080 ± 0.00001	-0.64595 ± 0.00001
55	2.90239 ± 0.00017	0.00042 ± 0.00000	0.71145 ± 0.00001	-0.70273 ± 0.00001
60	2.12657 ± 0.00016	0.00063 ± 0.00000	0.65773 ± 0.00001	-0.75325 ± 0.00001
65	1.60795 ± 0.00017	0.00132 ± 0.00001	0.59370 ± 0.00002	-0.80023 ± 0.00001
70	1.24936 ± 0.00017	0.00163 ± 0.00001	0.53745 ± 0.00002	-0.84329 ± 0.00001
75	0.93413 ± 0.00016	0.00251 ± 0.00001	0.47111 ± 0.00002	-0.88207 ± 0.00001
80	0.60707 ± 0.00016	0.00317 ± 0.00002	0.40061 ± 0.00002	-0.91615 ± 0.00001
85	0.36534 ± 0.00015	0.00364 ± 0.00002	0.32675 ± 0.00003	-0.94510 ± 0.00001
90	0.50333 ± 0.00014	0.00450 ± 0.00002	0.24914 ± 0.00003	-0.96845 ± 0.00001
95	0.40169 ± 0.00014	0.00513 ± 0.00003	0.16825 ± 0.00003	-0.98573 ± 0.00001
100	0.41705 ± 0.00013	0.00570 ± 0.00003	0.08442 ± 0.00003	-0.99641 ± 0.00000
105	0.30577 ± 0.00013	0.00620 ± 0.00003	-0.00194 ± 0.00003	-0.99995 ± 0.00000
110	0.32591 ± 0.00012	0.00661 ± 0.00004	-0.09034 ± 0.00003	-0.99589 ± 0.00000
115	0.29279 ± 0.00012	0.00690 ± 0.00004	-0.18016 ± 0.00003	-0.98361 ± 0.00000
120	0.26573 ± 0.00011	0.00705 ± 0.00004	-0.27077 ± 0.00003	-0.96262 ± 0.00001
125	0.24350 ± 0.00011	0.00713 ± 0.00004	-0.36126 ± 0.00002	-0.93244 ± 0.00001
130	0.22517 ± 0.00010	0.00704 ± 0.00004	-0.45070 ± 0.00002	-0.89265 ± 0.00001
135	0.21001 ± 0.00010	0.00682 ± 0.00004	-0.53797 ± 0.00002	-0.84293 ± 0.00001
140	0.19750 ± 0.00010	0.00646 ± 0.00003	-0.62163 ± 0.00002	-0.78312 ± 0.00001
145	0.18721 ± 0.00010	0.00595 ± 0.00003	-0.70091 ± 0.00001	-0.71323 ± 0.00001
150	0.17801 ± 0.00010	0.00537 ± 0.00003	-0.77373 ± 0.00001	-0.63349 ± 0.00001
155	0.17205 ± 0.00009	0.00466 ± 0.00002	-0.83570 ± 0.00001	-0.54445 ± 0.00001
160	0.16577 ± 0.00009	0.00395 ± 0.00002	-0.89450 ± 0.00000	-0.44593 ± 0.00001
165	0.16074 ± 0.00009	0.00290 ± 0.00002	-0.93955 ± 0.00000	-0.34211 ± 0.00001
170	0.15602 ± 0.00009	0.00201 ± 0.00001	-0.97264 ± 0.00000	-0.23147 ± 0.00001
175	0.15039 ± 0.00009	0.00101 ± 0.00001	-0.99316 ± 0.00000	-0.11677 ± 0.00000
180	0.15704 ± 0.00009	-0.00000 ± 0.00000	-1.00000 ± 0.00000	-0.00000 ± 0.00000

U.S. Navy Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	$K_z^{K'}$	$K_x^{K'}$
5	595.7532 ± 0.0350	-0.0002 ± 0.0000	0.9777 ± 0.0000	-0.0050 ± 0.0000
10	560.0737 ± 0.0021	-0.0017 ± 0.0000	0.9702 ± 0.0000	-0.1993 ± 0.0000
15	111.0130 ± 0.0022	-0.0000 ± 0.0000	0.9762 ± 0.0000	-0.2075 ± 0.0000
20	35.3350 ± 0.0014	-0.0000 ± 0.0000	0.9814 ± 0.0000	-0.2749 ± 0.0001
25	14.6351 ± 0.0007	-0.0012 ± 0.0001	0.9402 ± 0.0000	-0.3403 ± 0.0001
30	7.17770 ± 0.0044	-0.00140 ± 0.0001	0.9145 ± 0.0001	-0.4046 ± 0.0002
35	3.9602 ± 0.0035	-0.00121 ± 0.0001	0.8647 ± 0.0002	-0.4616 ± 0.0003
40	2.3985 ± 0.0030	-0.0052 ± 0.0000	0.8507 ± 0.0003	-0.5250 ± 0.0004
45	1.5530 ± 0.0026	0.00076 ± 0.0001	0.8127 ± 0.0004	-0.5825 ± 0.0006
50	1.0502 ± 0.0020	0.00273 ± 0.0002	0.7704 ± 0.0006	-0.6376 ± 0.0007
55	0.7679 ± 0.0034	0.00534 ± 0.0003	0.7243 ± 0.0008	-0.6854 ± 0.0008
60	0.5754 ± 0.0023	0.0055 ± 0.0005	0.6746 ± 0.0010	-0.7367 ± 0.0009
65	0.4463 ± 0.0021	0.0122 ± 0.0007	0.6207 ± 0.0012	-0.7859 ± 0.0009
70	0.3563 ± 0.0020	0.0163 ± 0.0009	0.5625 ± 0.0014	-0.8263 ± 0.0010
75	0.2927 ± 0.0019	0.0205 ± 0.0011	0.5003 ± 0.0016	-0.8576 ± 0.0019
80	0.2457 ± 0.0019	0.0240 ± 0.0013	0.4336 ± 0.0018	-0.9008 ± 0.0009
85	0.2104 ± 0.0016	0.0291 ± 0.0015	0.3625 ± 0.0019	-0.9315 ± 0.0008
90	0.1634 ± 0.0017	0.0327 ± 0.0017	0.2671 ± 0.0021	-0.9571 ± 0.0007
95	0.1624 ± 0.0017	0.0330 ± 0.0016	0.2090 ± 0.0022	-0.9772 ± 0.0005
100	0.1459 ± 0.0016	0.0388 ± 0.0019	0.1263 ± 0.0023	-0.9911 ± 0.0004
105	0.1327 ± 0.0016	0.0410 ± 0.0020	0.0412 ± 0.0023	-0.9931 ± 0.0002
110	0.1220 ± 0.0016	0.0452 ± 0.0021	-0.0472 ± 0.0023	-0.9979 ± 0.0000
115	0.1133 ± 0.0015	0.0425 ± 0.0021	-0.1379 ± 0.0023	-0.9943 ± 0.0002
120	0.1026 ± 0.0015	0.0432 ± 0.0021	-0.2301 ± 0.0022	-0.9721 ± 0.0004
125	0.1004 ± 0.0015	0.0451 ± 0.0020	-0.3231 ± 0.0021	-0.9454 ± 0.0006
130	0.0956 ± 0.0015	0.0410 ± 0.0019	-0.4154 ± 0.0019	-0.9055 ± 0.0005
135	0.0916 ± 0.0015	0.0395 ± 0.0016	-0.5063 ± 0.0017	-0.8611 ± 0.0009
140	0.0834 ± 0.0015	0.0382 ± 0.0017	-0.5950 ± 0.0015	-0.8029 ± 0.0010
145	0.0655 ± 0.0015	0.0393 ± 0.0015	-0.6763 ± 0.0012	-0.7365 ± 0.0011
150	0.0534 ± 0.0015	0.0291 ± 0.0013	-0.7529 ± 0.0010	-0.6535 ± 0.0010
155	0.06170 ± 0.0015	0.0294 ± 0.0011	-0.8295 ± 0.0007	-0.5631 ± 0.0010
160	0.0803 ± 0.0014	0.0206 ± 0.0009	-0.8595 ± 0.0005	-0.4634 ± 0.0009
165	0.07930 ± 0.0014	0.0153 ± 0.0007	-0.9346 ± 0.0003	-0.3553 ± 0.0007
170	0.07658 ± 0.0014	0.0147 ± 0.0005	-0.9704 ± 0.0001	-0.2407 ± 0.0005
175	0.07616 ± 0.0014	0.0027 ± 0.0002	-0.9927 ± 0.0000	-0.1213 ± 0.0003
180	0.07602 ± 0.0014	0.0000 ± 0.0000	-1.0000 ± 0.0000	-0.0000 ± 0.0000

0.754eV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	$K_z^{x'}$	$K_x^{x'}$
5	3932.31555 ± 0.03247	-0.00005 ± 0.00000	0.99757 ± 0.00000	-0.06907 ± 0.00000
10	247.93571 ± 0.00742	-0.00053 ± 0.00000	0.99033 ± 0.00000	-0.13574 ± 0.00000
15	45.80175 ± 0.00309	-0.00136 ± 0.00001	0.97848 ± 0.00000	-0.20635 ± 0.00001
20	15.43455 ± 0.00165	-0.00231 ± 0.00001	0.96237 ± 0.00001	-0.27175 ± 0.00002
25	5.35537 ± 0.00102	-0.00294 ± 0.00001	0.94244 ± 0.00001	-0.33435 ± 0.00004
30	3.10611 ± 0.00059	-0.00272 ± 0.00001	0.91917 ± 0.00003	-0.39305 ± 0.00007
35	1.71661 ± 0.00050	-0.00109 ± 0.00001	0.89292 ± 0.00005	-0.45020 ± 0.00011
40	1.04207 ± 0.00039	0.00245 ± 0.00002	0.85392 ± 0.00006	-0.50352 ± 0.00015
45	0.65344 ± 0.00032	0.00011 ± 0.00005	0.83210 ± 0.00012	-0.55445 ± 0.00019
50	0.47731 ± 0.00027	0.01060 ± 0.00009	0.79740 ± 0.00017	-0.60314 ± 0.00023
55	0.35180 ± 0.00024	0.02504 ± 0.00015	0.75940 ± 0.00022	-0.65002 ± 0.00026
60	0.27155 ± 0.00022	0.03717 ± 0.00020	0.71774 ± 0.00027	-0.69531 ± 0.00029
65	0.21011 ± 0.00020	0.04934 ± 0.00026	0.67165 ± 0.00032	-0.73902 ± 0.00031
70	0.16130 ± 0.00019	0.06165 ± 0.00032	0.62153 ± 0.00037	-0.78095 ± 0.00032
75	0.12521 ± 0.00019	0.07344 ± 0.00037	0.56547 ± 0.00042	-0.82080 ± 0.00032
80	0.10026 ± 0.00016	0.08413 ± 0.00041	0.50554 ± 0.00046	-0.85610 ± 0.00031
85	0.12230 ± 0.00016	0.09327 ± 0.00045	0.44165 ± 0.00050	-0.89232 ± 0.00029
90	0.11162 ± 0.00016	0.10056 ± 0.00047	0.37179 ± 0.00054	-0.92265 ± 0.00027
95	0.10359 ± 0.00016	0.10562 ± 0.00046	0.29635 ± 0.00056	-0.94901 ± 0.00023
100	0.09766 ± 0.00016	0.10902 ± 0.00049	0.21722 ± 0.00059	-0.97002 ± 0.00019
105	0.09326 ± 0.00016	0.11016 ± 0.00048	0.13276 ± 0.00060	-0.98500 ± 0.00013
110	0.08990 ± 0.00016	0.10945 ± 0.00047	0.04367 ± 0.00060	-0.99302 ± 0.00008
115	0.08720 ± 0.00016	0.10695 ± 0.00045	-0.04900 ± 0.00059	-0.99305 ± 0.00002
120	0.08527 ± 0.00019	0.10293 ± 0.00043	-0.14517 ± 0.00057	-0.98403 ± 0.00004
125	0.08300 ± 0.00019	0.09767 ± 0.00040	-0.24373 ± 0.00054	-0.95491 ± 0.00010
130	0.08291 ± 0.00019	0.09125 ± 0.00037	-0.34340 ± 0.00049	-0.93472 ± 0.00015
135	0.08227 ± 0.00020	0.08393 ± 0.00033	-0.44295 ± 0.00044	-0.89260 ± 0.00019
140	0.08100 ± 0.00020	0.07590 ± 0.00030	-0.54044 ± 0.00038	-0.83795 ± 0.00022
145	0.08100 ± 0.00020	0.06730 ± 0.00026	-0.63390 ± 0.00031	-0.77043 ± 0.00023
150	0.08161 ± 0.00021	0.05826 ± 0.00022	-0.72137 ± 0.00024	-0.69010 ± 0.00024
155	0.08162 ± 0.00021	0.04994 ± 0.00019	-0.80043 ± 0.00016	-0.59742 ± 0.00022
160	0.08163 ± 0.00021	0.03937 ± 0.00015	-0.85592 ± 0.00012	-0.49339 ± 0.00020
165	0.08176 ± 0.00022	0.02965 ± 0.00011	-0.92473 ± 0.00007	-0.37947 ± 0.00016
170	0.08163 ± 0.00022	0.01952 ± 0.00007	-0.95504 ± 0.00003	-0.25763 ± 0.00011
175	0.08165 ± 0.00022	0.00992 ± 0.00004	-0.99143 ± 0.00001	-0.13324 ± 0.00006
180	0.08190 ± 0.00022	-0.00000 ± 0.00000	-1.00000 ± 0.00000	-0.00000 ± 0.00000

1.00MeV Laboratory energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/str	A_y	$K_z^{x'}$	$K_x^{x'}$
5	2235.41270 ± 0.03345	-0.00010 ± 0.00000	0.99757 ± 0.00000	-0.00000 ± 0.00000
10	137.92942 ± 0.00929	-0.00110 ± 0.00000	0.99044 ± 0.00000	-0.13795 ± 0.00001
15	26.75703 ± 0.00419	-0.00202 ± 0.00001	0.97909 ± 0.00000	-0.20339 ± 0.00002
20	3.31040 ± 0.00229	-0.00397 ± 0.00001	0.95440 ± 0.00001	-0.20441 ± 0.00000
25	3.35703 ± 0.00140	-0.00393 ± 0.00001	0.94741 ± 0.00004	-0.32001 ± 0.00010
30	1.01302 ± 0.00091	-0.00091 ± 0.00002	0.92911 ± 0.00007	-0.30000 ± 0.00010
35	0.00124 ± 0.00003	0.00070 ± 0.00007	0.91013 ± 0.00012	-0.41427 ± 0.00027
40	0.53372 ± 0.00040	0.02040 ± 0.00015	0.89047 ± 0.00010	-0.45409 ± 0.00037
45	0.35262 ± 0.00035	0.04037 ± 0.00020	0.86939 ± 0.00020	-0.49247 ± 0.00047
50	0.25115 ± 0.00020	0.05592 ± 0.00040	0.84571 ± 0.00032	-0.52950 ± 0.00050
55	0.19009 ± 0.00023	0.09510 ± 0.00055	0.81017 ± 0.00033	-0.55700 ± 0.00054
60	0.15337 ± 0.00021	0.12503 ± 0.00070	0.76592 ± 0.00044	-0.60543 ± 0.00071
65	0.12913 ± 0.00019	0.15452 ± 0.00062	0.74502 ± 0.00050	-0.64457 ± 0.00070
70	0.11305 ± 0.00010	0.16009 ± 0.00091	0.70030 ± 0.00055	-0.65440 ± 0.00050
75	0.10222 ± 0.00010	0.20102 ± 0.00030	0.65915 ± 0.00062	-0.72442 ± 0.00052
80	0.09492 ± 0.00010	0.21745 ± 0.00101	0.60721 ± 0.00069	-0.70421 ± 0.00052
85	0.09010 ± 0.00010	0.22739 ± 0.00101	0.55025 ± 0.00077	-0.50344 ± 0.00050
90	0.00709 ± 0.00010	0.23100 ± 0.00039	0.45702 ± 0.00054	-0.64159 ± 0.00075
95	0.00540 ± 0.00019	0.23130 ± 0.00035	0.41930 ± 0.00091	-0.67707 ± 0.00050
100	0.00480 ± 0.00019	0.22057 ± 0.00030	0.34450 ± 0.00097	-0.91119 ± 0.00050
105	0.00515 ± 0.00020	0.21625 ± 0.00054	0.20175 ± 0.00101	-0.94013 ± 0.00047
110	0.00500 ± 0.00021	0.20719 ± 0.00077	0.17221 ± 0.00102	-0.95302 ± 0.00054
115	0.00555 ± 0.00022	0.19409 ± 0.00070	0.07570 ± 0.00101	-0.97500 ± 0.00021
120	0.00941 ± 0.00023	0.17901 ± 0.00053	-0.02004 ± 0.00090	-0.95337 ± 0.00009
125	0.09157 ± 0.00024	0.16425 ± 0.00055	-0.13437 ± 0.00092	-0.97122 ± 0.00050
130	0.09393 ± 0.00026	0.14546 ± 0.00050	-0.24519 ± 0.00063	-0.95004 ± 0.00014
135	0.09039 ± 0.00027	0.13253 ± 0.00043	-0.35727 ± 0.00074	-0.92455 ± 0.00023
140	0.09585 ± 0.00020	0.11069 ± 0.00030	-0.40027 ± 0.00063	-0.87555 ± 0.00029
145	0.10125 ± 0.00029	0.10109 ± 0.00032	-0.57557 ± 0.00051	-0.61145 ± 0.00033
150	0.10349 ± 0.00030	0.00550 ± 0.00027	-0.67042 ± 0.00040	-0.73151 ± 0.00034
155	0.10552 ± 0.00032	0.07005 ± 0.00022	-0.70797 ± 0.00029	-0.63055 ± 0.00033
160	0.10727 ± 0.00032	0.05022 ± 0.00017	-0.64740 ± 0.00019	-0.52705 ± 0.00029
165	0.10360 ± 0.00033	0.04109 ± 0.00013	-0.91237 ± 0.00011	-0.40721 ± 0.00024
170	0.10372 ± 0.00034	0.02779 ± 0.00009	-0.90045 ± 0.00005	-0.27705 ± 0.00017
175	0.11030 ± 0.00034	0.01305 ± 0.00004	-0.99002 ± 0.00001	-0.14024 ± 0.00009
180	0.11050 ± 0.00034	-0.00000 ± 0.00000	-1.00000 ± 0.00000	-0.00000 ± 0.00000

1.25MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	$K_z^{x'}$	$K_x^{x'}$
5	1423.00305 ± 0.04524	-0.00034 ± 0.00000	0.93759 ± 0.00000	-0.06344 ± 0.00000
10	36.26439 ± 0.01264	-0.00177 ± 0.00001	0.99067 ± 0.00000	-0.13627 ± 0.00001
15	16.25445 ± 0.00551	-0.00359 ± 0.00001	0.93034 ± 0.00001	-0.19726 ± 0.00005
20	4.06224 ± 0.00290	-0.00373 ± 0.00001	0.96838 ± 0.00003	-0.24946 ± 0.00011
25	1.00520 ± 0.00166	0.00142 ± 0.00006	0.95680 ± 0.00007	-0.29074 ± 0.00023
30	0.67246 ± 0.00104	0.01681 ± 0.00017	0.94703 ± 0.00013	-0.32071 ± 0.00039
35	0.46461 ± 0.00067	0.04753 ± 0.00038	0.93864 ± 0.00019	-0.34161 ± 0.00057
40	0.27976 ± 0.00045	0.09622 ± 0.00069	0.92686 ± 0.00023	-0.35824 ± 0.00076
45	0.16820 ± 0.00032	0.16035 ± 0.00106	0.91263 ± 0.00022	-0.37601 ± 0.00092
50	0.13957 ± 0.00025	0.23233 ± 0.00142	0.89739 ± 0.00021	-0.39520 ± 0.00105
55	0.11225 ± 0.00021	0.30274 ± 0.00171	0.88317 ± 0.00026	-0.42479 ± 0.00117
60	0.09626 ± 0.00019	0.36410 ± 0.00190	0.861325 ± 0.00039	-0.45393 ± 0.00129
65	0.08070 ± 0.00018	0.41222 ± 0.00199	0.77184 ± 0.00046	-0.45409 ± 0.00142
70	0.06109 ± 0.00016	0.44567 ± 0.00201	0.73210 ± 0.00051	-0.51516 ± 0.00156
75	0.07609 ± 0.00018	0.46469 ± 0.00197	0.69516 ± 0.00051	-0.54847 ± 0.00166
80	0.07699 ± 0.00016	0.47044 ± 0.00169	0.66000 ± 0.00054	-0.56574 ± 0.00173
85	0.07738 ± 0.00016	0.46460 ± 0.00177	0.62396 ± 0.00066	-0.62834 ± 0.00173
90	0.07901 ± 0.00019	0.44920 ± 0.00163	0.58352 ± 0.00083	-0.67655 ± 0.00166
95	0.06172 ± 0.00020	0.42643 ± 0.00146	0.53512 ± 0.00101	-0.72925 ± 0.00152
100	0.05539 ± 0.00021	0.39549 ± 0.00132	0.47584 ± 0.00116	-0.78408 ± 0.00133
105	0.06990 ± 0.00023	0.36736 ± 0.00116	0.40364 ± 0.00130	-0.83782 ± 0.00110
110	0.09512 ± 0.00025	0.33479 ± 0.00102	0.31854 ± 0.00137	-0.88582 ± 0.00085
115	0.10095 ± 0.00027	0.30204 ± 0.00088	0.22049 ± 0.00136	-0.92745 ± 0.00060
120	0.10723 ± 0.00029	0.27006 ± 0.00076	0.11120 ± 0.00134	-0.95640 ± 0.00036
125	0.11303 ± 0.00032	0.23944 ± 0.00066	-0.00707 ± 0.00126	-0.97088 ± 0.00015
130	0.12050 ± 0.00035	0.21053 ± 0.00056	-0.13156 ± 0.00114	-0.96870 ± 0.00008
135	0.12736 ± 0.00038	0.16343 ± 0.00048	-0.25915 ± 0.00100	-0.94826 ± 0.00020
140	0.13397 ± 0.00040	0.15814 ± 0.00041	-0.36649 ± 0.00085	-0.90864 ± 0.00030
145	0.14025 ± 0.00043	0.13453 ± 0.00034	-0.51012 ± 0.00069	-0.84952 ± 0.00037
150	0.14605 ± 0.00046	0.11245 ± 0.00028	-0.62853 ± 0.00053	-0.77124 ± 0.00040
155	0.15123 ± 0.00046	0.09169 ± 0.00023	-0.73227 ± 0.00039	-0.67451 ± 0.00039
160	0.15566 ± 0.00050	0.07204 ± 0.00018	-0.82408 ± 0.00026	-0.56188 ± 0.00036
165	0.15923 ± 0.00052	0.05320 ± 0.00013	-0.89397 ± 0.00015	-0.43477 ± 0.00029
170	0.16165 ± 0.00053	0.03515 ± 0.00009	-0.95442 ± 0.00007	-0.29640 ± 0.00021
175	0.16345 ± 0.00054	0.01746 ± 0.00004	-0.98850 ± 0.00002	-0.15020 ± 0.00011
180	0.16395 ± 0.00054	-0.00000 ± 0.00000	-1.00000 ± 0.00000	-0.00000 ± 0.00000

1.50MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	$K_z^{x'}$	$K_z^{y'}$
3	379.28655 $\pm$ 0.00428	-0.00046 $\pm$ 0.00000	0.93761 $\pm$ 0.00000	-0.00907 $\pm$ 0.00000
10	57.47934 $\pm$ 0.01607	-0.00195 $\pm$ 0.00000	0.93111 $\pm$ 0.00000	-0.13305 $\pm$ 0.00002
15	10.23033 $\pm$ 0.00044	-0.00162 $\pm$ 0.00002	0.93256 $\pm$ 0.00002	-0.10593 $\pm$ 0.00003
20	2.08507 $\pm$ 0.00309	0.00629 $\pm$ 0.00010	0.97504 $\pm$ 0.00005	-0.22193 $\pm$ 0.00022
25	1.04601 $\pm$ 0.00100	0.03424 $\pm$ 0.00033	0.97079 $\pm$ 0.00009	-0.23746 $\pm$ 0.00041
30	0.43053 $\pm$ 0.00050	0.09337 $\pm$ 0.00061	0.96666 $\pm$ 0.00003	-0.23633 $\pm$ 0.00002
35	0.24356 $\pm$ 0.00046	0.20670 $\pm$ 0.00151	0.94955 $\pm$ 0.00021	-0.23399 $\pm$ 0.00072
40	0.15433 $\pm$ 0.00026	0.35161 $\pm$ 0.00215	0.93235 $\pm$ 0.00075	-0.24926 $\pm$ 0.00074
45	0.11443 $\pm$ 0.00022	0.49359 $\pm$ 0.00246	0.92170 $\pm$ 0.00147	-0.26491 $\pm$ 0.00067
50	0.08525 $\pm$ 0.00022	0.60943 $\pm$ 0.00245	0.72299 $\pm$ 0.00211	-0.32540 $\pm$ 0.00107
55	0.06516 $\pm$ 0.00023	0.69431 $\pm$ 0.00232	0.62050 $\pm$ 0.00257	-0.35416 $\pm$ 0.00121
60	0.07951 $\pm$ 0.00023	0.75357 $\pm$ 0.00221	0.54715 $\pm$ 0.00262	-0.36430 $\pm$ 0.00133
65	0.07620 $\pm$ 0.00023	0.79257 $\pm$ 0.00214	0.43335 $\pm$ 0.00266	-0.35339 $\pm$ 0.00154
70	0.07472 $\pm$ 0.00023	0.81369 $\pm$ 0.00211	0.46526 $\pm$ 0.00275	-0.34445 $\pm$ 0.00186
75	0.07456 $\pm$ 0.00022	0.81721 $\pm$ 0.00209	0.47009 $\pm$ 0.00243	-0.33345 $\pm$ 0.00223
80	0.07503 $\pm$ 0.00022	0.80302 $\pm$ 0.00206	0.49214 $\pm$ 0.00196	-0.33610 $\pm$ 0.00255
85	0.07653 $\pm$ 0.00022	0.77202 $\pm$ 0.00197	0.52367 $\pm$ 0.00143	-0.36021 $\pm$ 0.00274
90	0.06274 $\pm$ 0.00022	0.72676 $\pm$ 0.00165	0.55210 $\pm$ 0.00099	-0.40050 $\pm$ 0.00276
95	0.06347 $\pm$ 0.00023	0.67112 $\pm$ 0.00165	0.55579 $\pm$ 0.00065	-0.47904 $\pm$ 0.00261
100	0.09572 $\pm$ 0.00025	0.60952 $\pm$ 0.00149	0.55633 $\pm$ 0.00103	-0.56479 $\pm$ 0.00232
105	0.10441 $\pm$ 0.00027	0.54605 $\pm$ 0.00130	0.51948 $\pm$ 0.00134	-0.65724 $\pm$ 0.00194
110	0.11441 $\pm$ 0.00029	0.46369 $\pm$ 0.00112	0.45466 $\pm$ 0.00152	-0.74762 $\pm$ 0.00153
115	0.12556 $\pm$ 0.00033	0.42515 $\pm$ 0.00095	0.38497 $\pm$ 0.00160	-0.82627 $\pm$ 0.00112
120	0.13761 $\pm$ 0.00037	0.37096 $\pm$ 0.00081	0.25395 $\pm$ 0.00159	-0.89324 $\pm$ 0.00074
125	0.15033 $\pm$ 0.00042	0.32179 $\pm$ 0.00069	0.12676 $\pm$ 0.00151	-0.93626 $\pm$ 0.00041
130	0.16341 $\pm$ 0.00047	0.27750 $\pm$ 0.00056	-0.01133 $\pm$ 0.00136	-0.96066 $\pm$ 0.00016
135	0.17655 $\pm$ 0.00052	0.23775 $\pm$ 0.00049	-0.15527 $\pm$ 0.00121	-0.95663 $\pm$ 0.00014
140	0.18942 $\pm$ 0.00057	0.20204 $\pm$ 0.00041	-0.30015 $\pm$ 0.00102	-0.93225 $\pm$ 0.00027
145	0.20171 $\pm$ 0.00062	0.16961 $\pm$ 0.00034	-0.44129 $\pm$ 0.00063	-0.88115 $\pm$ 0.00037
150	0.21310 $\pm$ 0.00067	0.14053 $\pm$ 0.00026	-0.57430 $\pm$ 0.00064	-0.80549 $\pm$ 0.00042
155	0.22329 $\pm$ 0.00072	0.11365 $\pm$ 0.00023	-0.69506 $\pm$ 0.00046	-0.70991 $\pm$ 0.00043
160	0.23202 $\pm$ 0.00075	0.08672 $\pm$ 0.00018	-0.79976 $\pm$ 0.00030	-0.59371 $\pm$ 0.00039
165	0.23907 $\pm$ 0.00076	0.06526 $\pm$ 0.00013	-0.86509 $\pm$ 0.00017	-0.46063 $\pm$ 0.00032
170	0.24424 $\pm$ 0.00081	0.04293 $\pm$ 0.00003	-0.94616 $\pm$ 0.00006	-0.31461 $\pm$ 0.00023
175	0.24739 $\pm$ 0.00082	0.02129 $\pm$ 0.00004	-0.95693 $\pm$ 0.00002	-0.15972 $\pm$ 0.00012
180	0.24846 $\pm$ 0.00083	-0.00000 $\pm$ 0.00000	-1.00000 $\pm$ 0.00000	-0.00000 $\pm$ 0.00000

1.7 MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	K_z^x	K_x^x
0	707.04753 $\pm$ 0.07764	-0.00046 $\pm$ 0.00000	0.99705 $\pm$ 0.00000	-0.06543 $\pm$ 0.00000
10	39.04529 $\pm$ 0.01033	-0.00000 $\pm$ 0.00002	0.99177 $\pm$ 0.00000	-0.12001 $\pm$ 0.00004
15	0.01959 $\pm$ 0.00057	0.00960 $\pm$ 0.00012	0.95555 $\pm$ 0.00002	-0.10937 $\pm$ 0.00012
20	1.71915 $\pm$ 0.00213	0.04901 $\pm$ 0.00342	0.95150 $\pm$ 0.00003	-0.10465 $\pm$ 0.00024
25	0.59760 $\pm$ 0.00074	0.15203 $\pm$ 0.00107	0.97000 $\pm$ 0.00015	-0.15517 $\pm$ 0.00020
30	0.27990 $\pm$ 0.00032	0.33140 $\pm$ 0.00109	0.91610 $\pm$ 0.00076	-0.21753 $\pm$ 0.00077
35	0.17089 $\pm$ 0.00045	0.51951 $\pm$ 0.00145	0.79295 $\pm$ 0.00150	-0.31535 $\pm$ 0.00170
40	0.14404 $\pm$ 0.00057	0.64251 $\pm$ 0.00090	0.62200 $\pm$ 0.00209	-0.44032 $\pm$ 0.00225
45	0.13005 $\pm$ 0.00061	0.70512 $\pm$ 0.00050	0.44954 $\pm$ 0.00233	-0.54425 $\pm$ 0.00226
50	0.12231 $\pm$ 0.00061	0.75076 $\pm$ 0.00107	0.29142 $\pm$ 0.00254	-0.59200 $\pm$ 0.00211
55	0.11503 $\pm$ 0.00050	0.79055 $\pm$ 0.00114	0.15343 $\pm$ 0.00260	-0.59240 $\pm$ 0.00194
60	0.11005 $\pm$ 0.00053	0.83524 $\pm$ 0.00109	0.04227 $\pm$ 0.00311	-0.54520 $\pm$ 0.00170
65	0.10442 $\pm$ 0.00045	0.85334 $\pm$ 0.00093	-0.03255 $\pm$ 0.00342	-0.46750 $\pm$ 0.00107
70	0.09953 $\pm$ 0.00043	0.93011 $\pm$ 0.00070	-0.06017 $\pm$ 0.00365	-0.35232 $\pm$ 0.00109
75	0.09020 $\pm$ 0.00038	0.90755 $\pm$ 0.00040	-0.03277 $\pm$ 0.00370	-0.25056 $\pm$ 0.00195
80	0.09450 $\pm$ 0.00034	0.95559 $\pm$ 0.00050	0.04057 $\pm$ 0.00345	-0.15572 $\pm$ 0.00241
85	0.09570 $\pm$ 0.00031	0.97999 $\pm$ 0.00075	0.17142 $\pm$ 0.00290	-0.10115 $\pm$ 0.00261
90	0.09925 $\pm$ 0.00029	0.94515 $\pm$ 0.00099	0.31012 $\pm$ 0.00224	-0.10257 $\pm$ 0.00325
95	0.10561 $\pm$ 0.00029	0.85529 $\pm$ 0.00113	0.43592 $\pm$ 0.00152	-0.16197 $\pm$ 0.00332
100	0.11454 $\pm$ 0.00029	0.60797 $\pm$ 0.00117	0.52467 $\pm$ 0.00113	-0.20515 $\pm$ 0.00312
105	0.12034 $\pm$ 0.00030	0.72207 $\pm$ 0.00113	0.56294 $\pm$ 0.00122	-0.40214 $\pm$ 0.00271
110	0.14142 $\pm$ 0.00033	0.63520 $\pm$ 0.00103	0.54027 $\pm$ 0.00147	-0.54395 $\pm$ 0.00219
115	0.15529 $\pm$ 0.00037	0.55255 $\pm$ 0.00032	0.40594 $\pm$ 0.00164	-0.67715 $\pm$ 0.00155
120	0.17705 $\pm$ 0.00042	0.47691 $\pm$ 0.00050	0.36507 $\pm$ 0.00170	-0.79017 $\pm$ 0.00114
125	0.19725 $\pm$ 0.00049	0.40923 $\pm$ 0.00059	0.25573 $\pm$ 0.00165	-0.67500 $\pm$ 0.00070
130	0.21037 $\pm$ 0.00050	0.34940 $\pm$ 0.00059	0.10749 $\pm$ 0.00152	-0.93079 $\pm$ 0.00034
135	0.23934 $\pm$ 0.00064	0.29670 $\pm$ 0.00050	-0.05120 $\pm$ 0.00134	-0.95300 $\pm$ 0.00013
140	0.26105 $\pm$ 0.00071	0.25022 $\pm$ 0.00042	-0.21301 $\pm$ 0.00114	-0.94447 $\pm$ 0.00023
145	0.26152 $\pm$ 0.00079	0.20895 $\pm$ 0.00035	-0.37150 $\pm$ 0.00092	-0.90450 $\pm$ 0.00035
150	0.30057 $\pm$ 0.00067	0.17202 $\pm$ 0.00020	-0.52133 $\pm$ 0.00071	-0.83504 $\pm$ 0.00042
155	0.31771 $\pm$ 0.00093	0.13654 $\pm$ 0.00023	-0.65729 $\pm$ 0.00051	-0.74079 $\pm$ 0.00044
160	0.33240 $\pm$ 0.00099	0.10779 $\pm$ 0.00018	-0.77511 $\pm$ 0.00034	-0.62256 $\pm$ 0.00041
165	0.34430 $\pm$ 0.00104	0.07912 $\pm$ 0.00013	-0.67101 $\pm$ 0.00019	-0.45400 $\pm$ 0.00034
170	0.35316 $\pm$ 0.00107	0.05194 $\pm$ 0.00008	-0.94100 $\pm$ 0.00009	-0.33197 $\pm$ 0.00024
175	0.35552 $\pm$ 0.00110	0.02573 $\pm$ 0.00004	-0.95534 $\pm$ 0.00002	-0.16854 $\pm$ 0.00013
180	0.36033 $\pm$ 0.00110	-0.00000 $\pm$ 0.00000	-1.00000 $\pm$ 0.00000	-0.00000 $\pm$ 0.00000

2.00MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/er	A_y	K_z^x	K_x^x
5	531.23949 ± 0.06207	0.00003 ± 0.00001	0.99771 ± 0.00000	-0.06766 ± 0.00001
10	26.42837 ± 0.00931	0.00627 ± 0.00006	0.99239 ± 0.00000	-0.12235 ± 0.00003
15	4.53374 ± 0.00183	0.04017 ± 0.00026	0.98668 ± 0.00001	-0.15761 ± 0.00006
20	1.19628 ± 0.00078	0.14123 ± 0.00055	0.97207 ± 0.00016	-0.18741 ± 0.00036
25	0.49710 ± 0.00125	0.31233 ± 0.00061	0.90800 ± 0.00056	-0.27926 ± 0.00121
30	0.32127 ± 0.00144	0.44706 ± 0.00054	0.77071 ± 0.00081	-0.45403 ± 0.00170
35	0.27145 ± 0.00146	0.49531 ± 0.00120	0.60344 ± 0.00079	-0.62493 ± 0.00156
40	0.25251 ± 0.00139	0.50505 ± 0.00151	0.43611 ± 0.00080	-0.74480 ± 0.00133
45	0.23902 ± 0.00129	0.51281 ± 0.00165	0.27074 ± 0.00092	-0.81469 ± 0.00120
50	0.22451 ± 0.00117	0.53138 ± 0.00173	0.10565 ± 0.00110	-0.84052 ± 0.00116
55	0.20812 ± 0.00104	0.56434 ± 0.00180	-0.05675 ± 0.00133	-0.82359 ± 0.00119
60	0.19067 ± 0.00091	0.61248 ± 0.00185	-0.20900 ± 0.00162	-0.76235 ± 0.00126
65	0.17336 ± 0.00079	0.67515 ± 0.00185	-0.33822 ± 0.00193	-0.65557 ± 0.00136
70	0.15749 ± 0.00067	0.74968 ± 0.00176	-0.42645 ± 0.00238	-0.50609 ± 0.00148
75	0.14404 ± 0.00057	0.83010 ± 0.00160	-0.45290 ± 0.00276	-0.32528 ± 0.00166
80	0.13392 ± 0.00048	0.90620 ± 0.00130	-0.40009 ± 0.00307	-0.13684 ± 0.00195
85	0.12778 ± 0.00041	0.96426 ± 0.00088	-0.26387 ± 0.00312	0.02400 ± 0.00239
90	0.12609 ± 0.00035	0.99087 ± 0.00047	-0.06251 ± 0.00283	0.11945 ± 0.00269
95	0.12908 ± 0.00031	0.97858 ± 0.00039	0.16377 ± 0.00226	0.12476 ± 0.00325
100	0.13681 ± 0.00029	0.92943 ± 0.00062	0.36683 ± 0.00164	0.03995 ± 0.00332
105	0.14916 ± 0.00028	0.85340 ± 0.00080	0.50912 ± 0.00130	-0.11184 ± 0.00308
110	0.16581 ± 0.00028	0.76323 ± 0.00087	0.57384 ± 0.00138	-0.29696 ± 0.00263
115	0.18632 ± 0.00031	0.66985 ± 0.00086	0.56292 ± 0.00158	-0.48417 ± 0.00206
120	0.21039 ± 0.00036	0.58041 ± 0.00080	0.48911 ± 0.00170	-0.65107 ± 0.00148
125	0.23642 ± 0.00042	0.49853 ± 0.00072	0.36868 ± 0.00170	-0.78457 ± 0.00036
130	0.26453 ± 0.00049	0.42539 ± 0.00063	0.21716 ± 0.00160	-0.87857 ± 0.00053
135	0.29355 ± 0.00057	0.36078 ± 0.00054	0.04780 ± 0.00143	-0.93143 ± 0.00023
140	0.32262 ± 0.00065	0.30301 ± 0.00046	-0.12860 ± 0.00122	-0.94401 ± 0.00020
145	0.35083 ± 0.00073	0.25335 ± 0.00039	-0.30328 ± 0.00099	-0.91660 ± 0.00033
150	0.37733 ± 0.00081	0.20830 ± 0.00032	-0.46904 ± 0.00076	-0.85826 ± 0.00041
155	0.40130 ± 0.00089	0.16759 ± 0.00026	-0.61955 ± 0.00055	-0.76562 ± 0.00044
160	0.42201 ± 0.00095	0.13029 ± 0.00020	-0.75058 ± 0.00036	-0.64780 ± 0.00042
165	0.43881 ± 0.00101	0.09558 ± 0.00015	-0.85697 ± 0.00021	-0.50642 ± 0.00035
170	0.45120 ± 0.00104	0.06272 ± 0.00010	-0.93555 ± 0.00009	-0.34758 ± 0.00025
175	0.45879 ± 0.00107	0.03107 ± 0.00005	-0.98375 ± 0.00002	-0.17682 ± 0.00013
180	0.46135 ± 0.00108	-0.00000 ± 0.00000	-1.00000 ± 0.00000	-0.00000 ± 0.00000

2.25MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	$K_z^{x'}$	$K_x^{x'}$
5	413.97456 ± 0.02045	0.00103 ± 0.00001	0.99774 ± 0.00000	-0.06720 ± 0.00000
10	21.90599 ± 0.00457	0.01624 ± 0.00000	0.99233 ± 0.00001	-0.12251 ± 0.00003
15	3.66030 ± 0.00370	0.07695 ± 0.00022	0.98203 ± 0.00006	-0.17232 ± 0.00024
20	1.16394 ± 0.00315	0.19798 ± 0.00012	0.94288 ± 0.00022	-0.26793 ± 0.00072
25	0.64319 ± 0.00266	0.30183 ± 0.00058	0.84559 ± 0.00029	-0.44032 ± 0.00092
30	0.50297 ± 0.00228	0.33377 ± 0.00101	0.71174 ± 0.00023	-0.61808 ± 0.00075
35	0.45019 ± 0.00197	0.33036 ± 0.00119	0.56690 ± 0.00026	-0.75464 ± 0.00059
40	0.41684 ± 0.00172	0.32362 ± 0.00129	0.41467 ± 0.00037	-0.85048 ± 0.00052
45	0.38577 ± 0.00150	0.32468 ± 0.00138	0.25326 ± 0.00050	-0.91129 ± 0.00051
50	0.35326 ± 0.00130	0.33682 ± 0.00149	0.08258 ± 0.00064	-0.93794 ± 0.00054
55	0.31948 ± 0.00112	0.36156 ± 0.00162	-0.09450 ± 0.00080	-0.92755 ± 0.00062
60	0.28564 ± 0.00096	0.40030 ± 0.00175	-0.27160 ± 0.00097	-0.87521 ± 0.00074
65	0.25315 ± 0.00082	0.45448 ± 0.00187	-0.43778 ± 0.00117	-0.77575 ± 0.00090
70	0.22334 ± 0.00069	0.52502 ± 0.00197	-0.57641 ± 0.00142	-0.62619 ± 0.00112
75	0.19736 ± 0.00057	0.61101 ± 0.00201	-0.66488 ± 0.00173	-0.42966 ± 0.00136
80	0.17613 ± 0.00047	0.70788 ± 0.00195	-0.67716 ± 0.00207	-0.20088 ± 0.00163
85	0.16037 ± 0.00039	0.80554 ± 0.00177	-0.59182 ± 0.00238	0.02919 ± 0.00195
90	0.15056 ± 0.00031	0.88842 ± 0.00146	-0.40557 ± 0.00252	0.21499 ± 0.00233
95	0.14694 ± 0.00025	0.93960 ± 0.00111	-0.14526 ± 0.00239	0.30992 ± 0.00273
100	0.14954 ± 0.00020	0.94810 ± 0.00085	0.13460 ± 0.00202	0.28807 ± 0.00300
105	0.15819 ± 0.00017	0.91421 ± 0.00080	0.37312 ± 0.00161	0.15812 ± 0.00302
110	0.17250 ± 0.00015	0.84814 ± 0.00066	0.52800 ± 0.00144	-0.04322 ± 0.00275
115	0.19191 ± 0.00014	0.76393 ± 0.00089	0.56571 ± 0.00153	-0.27086 ± 0.00229
120	0.21569 ± 0.00016	0.67373 ± 0.00086	0.55528 ± 0.00167	-0.48760 ± 0.00173
125	0.24300 ± 0.00020	0.58558 ± 0.00082	0.45644 ± 0.00171	-0.66990 ± 0.00119
130	0.27286 ± 0.00025	0.50366 ± 0.00075	0.31050 ± 0.00164	-0.80614 ± 0.00072
135	0.30426 ± 0.00030	0.42947 ± 0.00066	0.13552 ± 0.00149	-0.89270 ± 0.00037
140	0.33611 ± 0.00036	0.36301 ± 0.00058	-0.05060 ± 0.00129	-0.93041 ± 0.00024
145	0.36733 ± 0.00042	0.30354 ± 0.00049	-0.23392 ± 0.00105	-0.92238 ± 0.00033
150	0.39688 ± 0.00046	0.25004 ± 0.00041	-0.41914 ± 0.00082	-0.87281 ± 0.00042
155	0.42376 ± 0.00053	0.20147 ± 0.00034	-0.58379 ± 0.00059	-0.78651 ± 0.00045
160	0.44709 ± 0.00058	0.15679 ± 0.00027	-0.72683 ± 0.00039	-0.66868 ± 0.00043
165	0.46609 ± 0.00062	0.11511 ± 0.00020	-0.84333 ± 0.00022	-0.52493 ± 0.00037
170	0.48012 ± 0.00065	0.07558 ± 0.00013	-0.92940 ± 0.00010	-0.36126 ± 0.00026
175	0.48873 ± 0.00066	0.03745 ± 0.00006	-0.98220 ± 0.00003	-0.18405 ± 0.00014
180	0.49163 ± 0.00067	-0.00000 ± 0.00000	-1.00000 ± 0.00000	-0.00000 ± 0.00000

2.50MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	$K_z^{x'}$	$K_x^{x'}$
5	334.64767 ± 0.03152	0.00212 ± 0.00001	0.99773 ± 0.00000	-0.06732 ± 0.00000
10	18.22300 ± 0.01167	0.02454 ± 0.00005	0.99152 ± 0.00001	-0.12760 ± 0.00007
15	3.39724 ± 0.00616	0.09345 ± 0.00003	0.97460 ± 0.00007	-0.20351 ± 0.00031
20	1.30085 ± 0.00388	0.18488 ± 0.00032	0.92169 ± 0.00013	-0.34104 ± 0.00051
25	0.62297 ± 0.00272	0.23048 ± 0.00067	0.82462 ± 0.00010	-0.51660 ± 0.00045
30	0.66710 ± 0.00204	0.23111 ± 0.00086	0.70368 ± 0.00010	-0.67188 ± 0.00034
35	0.59080 ± 0.00161	0.21799 ± 0.00098	0.56947 ± 0.00017	-0.79258 ± 0.00029
40	0.53579 ± 0.00131	0.20663 ± 0.00110	0.42270 ± 0.00027	-0.88240 ± 0.00027
45	0.45630 ± 0.00109	0.20205 ± 0.00122	0.26278 ± 0.00038	-0.94346 ± 0.00027
50	0.43827 ± 0.00092	0.20613 ± 0.00136	0.09034 ± 0.00050	-0.97435 ± 0.00029
55	0.39122 ± 0.00078	0.22026 ± 0.00150	-0.09202 ± 0.00063	-0.97109 ± 0.00034
60	0.34583 ± 0.00066	0.24616 ± 0.00165	-0.27909 ± 0.00075	-0.92816 ± 0.00045
65	0.30310 ± 0.00056	0.26602 ± 0.00181	-0.46200 ± 0.00087	-0.83950 ± 0.00062
70	0.26406 ± 0.00047	0.34221 ± 0.00195	-0.62689 ± 0.00100	-0.63993 ± 0.00084
75	0.22965 ± 0.00039	0.41666 ± 0.00206	-0.75388 ± 0.00115	-0.50828 ± 0.00111
80	0.20086 ± 0.00032	0.50934 ± 0.00212	-0.81644 ± 0.00136	-0.27203 ± 0.00140
85	0.17769 ± 0.00026	0.61603 ± 0.00209	-0.70761 ± 0.00164	-0.01334 ± 0.00168
90	0.16115 ± 0.00020	0.72615 ± 0.00194	-0.64888 ± 0.00193	0.22730 ± 0.00195
95	0.15125 ± 0.00015	0.62277 ± 0.00167	-0.40686 ± 0.00212	0.39688 ± 0.00223
100	0.14798 ± 0.00010	0.68737 ± 0.00135	-0.10296 ± 0.00209	0.44941 ± 0.00251
105	0.15115 ± 0.00006	0.90801 ± 0.00111	0.19653 ± 0.00186	0.36999 ± 0.00268
110	0.16036 ± 0.00005	0.88476 ± 0.00101	0.42653 ± 0.00163	0.18320 ± 0.00264
115	0.17505 ± 0.00007	0.62781 ± 0.00100	0.55758 ± 0.00158	-0.06191 ± 0.00235
120	0.19448 ± 0.00010	0.75099 ± 0.00100	0.55015 ± 0.00166	-0.31534 ± 0.00189
125	0.21780 ± 0.00015	0.66626 ± 0.00097	0.51347 ± 0.00173	-0.54078 ± 0.00138
130	0.24404 ± 0.00019	0.58157 ± 0.00091	0.38224 ± 0.00169	-0.71810 ± 0.00090
135	0.27217 ± 0.00023	0.50122 ± 0.00083	0.21025 ± 0.00157	-0.83939 ± 0.00052
140	0.30111 ± 0.00027	0.42697 ± 0.00074	0.01727 ± 0.00137	-0.90410 ± 0.00034
145	0.32977 ± 0.00031	0.35909 ± 0.00065	-0.18130 ± 0.00113	-0.91553 ± 0.00038
150	0.35712 ± 0.00035	0.29708 ± 0.00055	-0.37361 ± 0.00088	-0.87873 ± 0.00045
155	0.38214 ± 0.00038	0.24013 ± 0.00046	-0.55049 ± 0.00064	-0.79956 ± 0.00049
160	0.40396 ± 0.00041	0.18733 ± 0.00036	-0.70470 ± 0.00042	-0.68433 ± 0.00047
165	0.42178 ± 0.00044	0.13777 ± 0.00027	-0.83054 ± 0.00024	-0.53955 ± 0.00040
170	0.43497 ± 0.00046	0.09056 ± 0.00018	-0.92361 ± 0.00011	-0.37247 ± 0.00029
175	0.44308 ± 0.00047	0.04490 ± 0.00009	-0.98074 ± 0.00003	-0.19008 ± 0.00015
180	0.44582 ± 0.00047	0.00000 ± 0.00000	-1.00000 ± 0.00000	-0.00000 ± 0.00000

2.75MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/er	A_y	K_z'	K_x'
5	276.06375 $\pm$ 0.04775	0.00294 $\pm$ 0.00001	0.99769 $\pm$ 0.00000	-0.06761 $\pm$ 0.00001
10	15.78039 $\pm$ 0.01351	0.02860 $\pm$ 0.00002	0.99050 $\pm$ 0.00001	-0.13450 $\pm$ 0.00009
15	3.24129 $\pm$ 0.00606	0.09266 $\pm$ 0.00010	0.95874 $\pm$ 0.00005	-0.23006 $\pm$ 0.00027
20	1.37940 $\pm$ 0.00331	0.15547 $\pm$ 0.00039	0.91129 $\pm$ 0.00008	-0.30126 $\pm$ 0.00033
25	0.91404 $\pm$ 0.00203	0.17354 $\pm$ 0.00062	0.81813 $\pm$ 0.00007	-0.54022 $\pm$ 0.00006
30	0.74129 $\pm$ 0.00135	0.16192 $\pm$ 0.00076	0.70364 $\pm$ 0.00006	-0.69166 $\pm$ 0.00022
35	0.64782 $\pm$ 0.00097	0.14294 $\pm$ 0.00092	0.57447 $\pm$ 0.00014	-0.60535 $\pm$ 0.00019
40	0.57949 $\pm$ 0.00074	0.12626 $\pm$ 0.00106	0.43056 $\pm$ 0.00024	-0.69366 $\pm$ 0.00016
45	0.52025 $\pm$ 0.00059	0.11516 $\pm$ 0.00121	0.27213 $\pm$ 0.00035	-0.95534 $\pm$ 0.00017
50	0.46513 $\pm$ 0.00050	0.11111 $\pm$ 0.00136	0.10003 $\pm$ 0.00047	-0.98876 $\pm$ 0.00016
55	0.41262 $\pm$ 0.00042	0.11541 $\pm$ 0.00151	-0.05333 $\pm$ 0.00059	-0.95332 $\pm$ 0.00016
60	0.36335 $\pm$ 0.00037	0.12980 $\pm$ 0.00167	-0.27347 $\pm$ 0.00069	-0.95506 $\pm$ 0.00026
65	0.31725 $\pm$ 0.00032	0.15656 $\pm$ 0.00183	-0.46292 $\pm$ 0.00077	-0.67246 $\pm$ 0.00046
70	0.27520 $\pm$ 0.00027	0.19865 $\pm$ 0.00195	-0.63994 $\pm$ 0.00083	-0.55950 $\pm$ 0.00059
75	0.23766 $\pm$ 0.00023	0.25910 $\pm$ 0.00211	-0.76722 $\pm$ 0.00087	-0.55950 $\pm$ 0.00097
80	0.20589 $\pm$ 0.00019	0.34039 $\pm$ 0.00220	-0.85132 $\pm$ 0.00094	-0.32774 $\pm$ 0.00126
85	0.17971 $\pm$ 0.00015	0.44244 $\pm$ 0.00222	-0.89464 $\pm$ 0.00111	-0.06213 $\pm$ 0.00153
90	0.15965 $\pm$ 0.00012	0.56010 $\pm$ 0.00214	-0.80276 $\pm$ 0.00141	0.20452 $\pm$ 0.00174
95	0.14589 $\pm$ 0.00006	0.65083 $\pm$ 0.00195	-0.59830 $\pm$ 0.00175	0.42241 $\pm$ 0.00190
100	0.13539 $\pm$ 0.00006	0.76596 $\pm$ 0.00167	-0.30542 $\pm$ 0.00197	0.53757 $\pm$ 0.00208
105	0.13697 $\pm$ 0.00005	0.85626 $\pm$ 0.00138	0.01619 $\pm$ 0.00197	0.51020 $\pm$ 0.00229
110	0.14127 $\pm$ 0.00008	0.88107 $\pm$ 0.00117	0.30160 $\pm$ 0.00183	0.36418 $\pm$ 0.00240
115	0.15076 $\pm$ 0.00011	0.86194 $\pm$ 0.00110	0.49168 $\pm$ 0.00172	0.12370 $\pm$ 0.00231
120	0.16484 $\pm$ 0.00016	0.80958 $\pm$ 0.00111	0.56765 $\pm$ 0.00174	-0.14936 $\pm$ 0.00199
125	0.18266 $\pm$ 0.00021	0.73726 $\pm$ 0.00111	0.53881 $\pm$ 0.00179	-0.40756 $\pm$ 0.00155
130	0.20343 $\pm$ 0.00025	0.65616 $\pm$ 0.00108	0.42908 $\pm$ 0.00176	-0.62077 $\pm$ 0.00109
135	0.22615 $\pm$ 0.00030	0.57364 $\pm$ 0.00102	0.26542 $\pm$ 0.00167	-0.77491 $\pm$ 0.00071
140	0.24988 $\pm$ 0.00035	0.49365 $\pm$ 0.00093	0.07166 $\pm$ 0.00148	-0.86659 $\pm$ 0.00050
145	0.27365 $\pm$ 0.00040	0.41660 $\pm$ 0.00082	-0.13322 $\pm$ 0.00123	-0.89835 $\pm$ 0.00047
150	0.29650 $\pm$ 0.00044	0.34634 $\pm$ 0.00071	-0.33464 $\pm$ 0.00097	-0.87560 $\pm$ 0.00052
155	0.31754 $\pm$ 0.00048	0.28260 $\pm$ 0.00059	-0.52149 $\pm$ 0.00071	-0.80503 $\pm$ 0.00055
160	0.33596 $\pm$ 0.00051	0.22133 $\pm$ 0.00046	-0.66521 $\pm$ 0.00047	-0.69390 $\pm$ 0.00052
165	0.35106 $\pm$ 0.00054	0.16314 $\pm$ 0.00036	-0.81920 $\pm$ 0.00027	-0.54981 $\pm$ 0.00044
170	0.36227 $\pm$ 0.00056	0.10741 $\pm$ 0.00024	-0.91846 $\pm$ 0.00012	-0.38065 $\pm$ 0.00032
175	0.36917 $\pm$ 0.00057	0.05330 $\pm$ 0.00012	-0.97944 $\pm$ 0.00003	-0.19459 $\pm$ 0.00017
180	0.37150 $\pm$ 0.00057	-0.00000 $\pm$ 0.00000	-1.00000 $\pm$ 0.00000	-0.00000 $\pm$ 0.00000

3.00MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	K_z'	K_x'
5	235.29279 ± 0.05000	0.00347 ± 0.00000	0.99765 ± 0.00000	-0.06341 ± 0.00001
10	13.83575 ± 0.01252	0.03032 ± 0.00001	0.98358 ± 0.00001	-0.14074 ± 0.00009
15	3.03653 ± 0.00507	0.08657 ± 0.00015	0.96471 ± 0.00004	-0.24870 ± 0.00022
20	1.36734 ± 0.00247	0.12910 ± 0.00039	0.90552 ± 0.00006	-0.40418 ± 0.00026
25	0.92332 ± 0.00132	0.13125 ± 0.00060	0.81490 ± 0.00007	-0.56455 ± 0.00022
30	0.74635 ± 0.00076	0.11112 ± 0.00078	0.70417 ± 0.00008	-0.70128 ± 0.00017
35	0.64755 ± 0.00051	0.08622 ± 0.00095	0.57766 ± 0.00015	-0.81171 ± 0.00015
40	0.57509 ± 0.00042	0.06372 ± 0.00111	0.43590 ± 0.00025	-0.83773 ± 0.00014
45	0.51360 ± 0.00038	0.04609 ± 0.00127	0.27915 ± 0.00037	-0.95914 ± 0.00012
50	0.45763 ± 0.00036	0.03455 ± 0.00143	0.10341 ± 0.00049	-0.99351 ± 0.00007
55	0.40538 ± 0.00033	0.03032 ± 0.00159	-0.07407 ± 0.00060	-0.99679 ± 0.00007
60	0.35647 ± 0.00030	0.03503 ± 0.00176	-0.26425 ± 0.00070	-0.96382 ± 0.00020
65	0.31110 ± 0.00027	0.05099 ± 0.00192	-0.45554 ± 0.00076	-0.88375 ± 0.00039
70	0.26970 ± 0.00023	0.08124 ± 0.00207	-0.63770 ± 0.00078	-0.76599 ± 0.00064
75	0.23275 ± 0.00020	0.12939 ± 0.00220	-0.79563 ± 0.00074	-0.59160 ± 0.00091
80	0.20072 ± 0.00017	0.19916 ± 0.00229	-0.90846 ± 0.00069	-0.36747 ± 0.00119
85	0.17398 ± 0.00013	0.29298 ± 0.00232	-0.95044 ± 0.00074	-0.10401 ± 0.00145
90	0.15277 ± 0.00010	0.40965 ± 0.00226	-0.83562 ± 0.00101	0.17234 ± 0.00162
95	0.13723 ± 0.00008	0.54138 ± 0.00211	-0.72968 ± 0.00142	0.41769 ± 0.00171
100	0.12734 ± 0.00006	0.67230 ± 0.00185	-0.46283 ± 0.00179	0.57776 ± 0.00179
105	0.12293 ± 0.00006	0.78139 ± 0.00155	-0.14012 ± 0.00199	0.60811 ± 0.00194
110	0.12368 ± 0.00009	0.85044 ± 0.00130	0.17017 ± 0.00193	0.49778 ± 0.00213
115	0.12915 ± 0.00012	0.87185 ± 0.00117	0.40416 ± 0.00189	0.27664 ± 0.00220
120	0.13878 ± 0.00017	0.85009 ± 0.00116	0.52664 ± 0.00187	-0.00072 ± 0.00205
125	0.15189 ± 0.00021	0.79680 ± 0.00119	0.53562 ± 0.00191	-0.27965 ± 0.00171
130	0.16774 ± 0.00026	0.72470 ± 0.00120	0.45089 ± 0.00191	-0.52106 ± 0.00129
135	0.18551 ± 0.00032	0.64390 ± 0.00116	0.30018 ± 0.00181	-0.70376 ± 0.00092
140	0.20437 ± 0.00037	0.56103 ± 0.00109	0.11016 ± 0.00162	-0.82043 ± 0.00068
145	0.22346 ± 0.00042	0.47981 ± 0.00099	-0.09704 ± 0.00137	-0.87199 ± 0.00061
150	0.24197 ± 0.00047	0.40194 ± 0.00086	-0.30423 ± 0.00108	-0.86365 ± 0.00063
155	0.25912 ± 0.00051	0.32792 ± 0.00073	-0.49534 ± 0.00080	-0.80255 ± 0.00064
160	0.27419 ± 0.00054	0.25757 ± 0.00059	-0.56941 ± 0.00053	-0.69551 ± 0.00060
165	0.28659 ± 0.00057	0.19035 ± 0.00044	-0.60991 ± 0.00031	-0.55480 ± 0.00051
170	0.29582 ± 0.00060	0.12554 ± 0.00030	-0.91421 ± 0.00014	-0.38531 ± 0.00037
175	0.30150 ± 0.00061	0.08236 ± 0.00015	-0.97830 ± 0.00004	-0.19731 ± 0.00019
180	0.30342 ± 0.00061	0.00000 ± 0.00000	-1.00000 ± 0.00000	-0.00000 ± 0.00000

3.25 MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	K_z'	K_x'
5	201.69219 ± 0.04677	0.00379 ± 0.00000	0.99761 ± 0.00000	-0.06898 ± 0.00001
10	12.17452 ± 0.01085	0.03050 ± 0.00003	0.98883 ± 0.00001	-0.14592 ± 0.00009
15	2.79272 ± 0.00403	0.07923 ± 0.00018	0.96177 ± 0.00004	-0.26215 ± 0.00019
20	1.30185 ± 0.00178	0.10692 ± 0.00041	0.93153 ± 0.00006	-0.41930 ± 0.00022
25	0.88961 ± 0.00032	0.09728 ± 0.00063	0.81245 ± 0.00007	-0.57486 ± 0.00019
30	0.71947 ± 0.00045	0.06961 ± 0.00083	0.70407 ± 0.00009	-0.70671 ± 0.00014
35	0.62183 ± 0.00039	0.03875 ± 0.00101	0.57978 ± 0.00017	-0.81385 ± 0.00013
40	0.55062 ± 0.00042	0.01042 ± 0.00119	0.44011 ± 0.00028	-0.89788 ± 0.00014
45	0.49080 ± 0.00043	-0.01340 ± 0.00136	0.28539 ± 0.00041	-0.95832 ± 0.00013
50	0.43693 ± 0.00042	-0.03169 ± 0.00153	0.11667 ± 0.00054	-0.99265 ± 0.00009
55	0.38704 ± 0.00040	-0.04334 ± 0.00170	-0.06330 ± 0.00066	-0.99702 ± 0.00008
60	0.34054 ± 0.00036	-0.04676 ± 0.00187	-0.25260 ± 0.00075	-0.96644 ± 0.00021
65	0.29747 ± 0.00031	-0.03972 ± 0.00203	-0.44348 ± 0.00080	-0.89540 ± 0.00040
70	0.25810 ± 0.00027	-0.01912 ± 0.00218	-0.62738 ± 0.00079	-0.77848 ± 0.00054
75	0.22280 ± 0.00022	0.01893 ± 0.00230	-0.79034 ± 0.00071	-0.61172 ± 0.00091
80	0.19193 ± 0.00018	0.07883 ± 0.00239	-0.91519 ± 0.00056	-0.39525 ± 0.00118
85	0.16581 ± 0.00014	0.16455 ± 0.00241	-0.97677 ± 0.00047	-0.13726 ± 0.00142
90	0.14464 ± 0.00011	0.27755 ± 0.00236	-0.95034 ± 0.00069	0.14075 ± 0.00157
95	0.12854 ± 0.00008	0.41362 ± 0.00221	-0.81751 ± 0.00114	0.40053 ± 0.00162
100	0.11747 ± 0.00007	0.56100 ± 0.00197	-0.58012 ± 0.00160	0.59054 ± 0.00160
105	0.11130 ± 0.00007	0.69883 ± 0.00167	-0.27141 ± 0.00193	0.66179 ± 0.00168
110	0.10976 ± 0.00008	0.80513 ± 0.00139	0.04727 ± 0.00205	0.59121 ± 0.00189
115	0.11246 ± 0.00011	0.86480 ± 0.00121	0.30880 ± 0.00204	0.39594 ± 0.00207
120	0.11893 ± 0.00015	0.87526 ± 0.00117	0.46723 ± 0.00203	0.12499 ± 0.00207
125	0.12057 ± 0.00020	0.64453 ± 0.00121	0.50974 ± 0.00207	-0.16412 ± 0.00184
130	0.14075 ± 0.00025	0.70522 ± 0.00125	0.45008 ± 0.00207	-0.42528 ± 0.00148
135	0.15474 ± 0.00030	0.70927 ± 0.00125	0.31470 ± 0.00199	-0.63079 ± 0.00112
140	0.16984 ± 0.00035	0.62562 ± 0.00120	0.13177 ± 0.00180	-0.76892 ± 0.00087
145	0.18530 ± 0.00040	0.53993 ± 0.00110	-0.07422 ± 0.00154	-0.83843 ± 0.00077
150	0.20040 ± 0.00045	0.45537 ± 0.00098	-0.28385 ± 0.00123	-0.84384 ± 0.00077
155	0.21447 ± 0.00049	0.37337 ± 0.00084	-0.48224 ± 0.00091	-0.79249 ± 0.00076
160	0.22090 ± 0.00053	0.29434 ± 0.00080	-0.65818 ± 0.00061	-0.89293 ± 0.00071
165	0.23715 ± 0.00050	0.21808 ± 0.00052	-0.80322 ± 0.00035	-0.55433 ± 0.00059
170	0.24479 ± 0.00050	0.14408 ± 0.00035	-0.91112 ± 0.00016	-0.38614 ± 0.00043
175	0.24950 ± 0.00060	0.07104 ± 0.00017	-0.97757 ± 0.00004	-0.19307 ± 0.00022
180	0.25110 ± 0.00060	0.00000 ± 0.00000	-1.00000 ± 0.00000	-0.00000 ± 0.00000

3.50 MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	$K_z^{x'}$	$K_x^{x'}$
5	174.67764 ± 0.04215	0.00400 ± 0.00000	0.99757 ± 0.00000	-0.00350 ± 0.00001
10	10.74165 ± 0.00930	0.03005 ± 0.00004	0.93519 ± 0.00001	-0.15025 ± 0.00009
15	2.54260 ± 0.00329	0.07195 ± 0.00020	0.95944 ± 0.00004	-0.27259 ± 0.00016
20	1.21553 ± 0.00132	0.05745 ± 0.00044	0.89539 ± 0.00006	-0.43041 ± 0.00020
25	0.63991 ± 0.00050	0.05781 ± 0.00060	0.81045 ± 0.00006	-0.58167 ± 0.00015
30	0.65107 ± 0.00040	0.03312 ± 0.00090	0.70408 ± 0.00010	-0.70935 ± 0.00011
35	0.55055 ± 0.00046	-0.03352 ± 0.00109	0.56203 ± 0.00020	-0.81316 ± 0.00015
40	0.52105 ± 0.00050	-0.03738 ± 0.00127	0.44471 ± 0.00034	-0.89490 ± 0.00019
45	0.45443 ± 0.00051	-0.05659 ± 0.00145	0.29247 ± 0.00048	-0.95393 ± 0.00020
50	0.41363 ± 0.00049	-0.09122 ± 0.00162	0.12635 ± 0.00061	-0.99778 ± 0.00019
55	0.36670 ± 0.00045	-0.10333 ± 0.00180	-0.05161 ± 0.00074	-0.99266 ± 0.00019
60	0.32301 ± 0.00040	-0.11973 ± 0.00197	-0.23798 ± 0.00083	-0.96306 ± 0.00028
65	0.26251 ± 0.00035	-0.12018 ± 0.00213	-0.42727 ± 0.00083	-0.89510 ± 0.00045
70	0.24541 ± 0.00030	-0.10756 ± 0.00220	-0.61120 ± 0.00086	-0.78414 ± 0.00058
75	0.21201 ± 0.00024	-0.07782 ± 0.00241	-0.77757 ± 0.00076	-0.62396 ± 0.00094
80	0.18261 ± 0.00019	-0.02698 ± 0.00249	-0.90946 ± 0.00055	-0.41434 ± 0.00121
85	0.15749 ± 0.00015	0.05262 ± 0.00250	-0.98515 ± 0.00028	-0.16341 ± 0.00143
90	0.13653 ± 0.00012	0.16163 ± 0.00244	-0.95041 ± 0.00042	0.11261 ± 0.00156
95	0.12073 ± 0.00009	0.29973 ± 0.00229	-0.87533 ± 0.00091	0.37942 ± 0.00158
100	0.10917 ± 0.00007	0.45774 ± 0.00205	-0.66603 ± 0.00143	0.53895 ± 0.00150
105	0.10203 ± 0.00006	0.61711 ± 0.00176	-0.37657 ± 0.00184	0.69087 ± 0.00149
110	0.09908 ± 0.00007	0.75384 ± 0.00146	-0.05087 ± 0.00207	0.65423 ± 0.00168
115	0.09995 ± 0.00010	0.84740 ± 0.00124	0.21502 ± 0.00215	0.43547 ± 0.00195
120	0.10431 ± 0.00013	0.88870 ± 0.00114	0.39854 ± 0.00218	0.22665 ± 0.00206
125	0.11156 ± 0.00017	0.88135 ± 0.00117	0.46799 ± 0.00223	-0.06482 ± 0.00193
130	0.12116 ± 0.00022	0.83666 ± 0.00123	0.43080 ± 0.00226	-0.33825 ± 0.00164
135	0.13248 ± 0.00027	0.76757 ± 0.00126	0.31100 ± 0.00219	-0.56046 ± 0.00130
140	0.14489 ± 0.00032	0.65489 ± 0.00124	0.13707 ± 0.00200	-0.71564 ± 0.00105
145	0.15772 ± 0.00037	0.59615 ± 0.00117	-0.06499 ± 0.00172	-0.80024 ± 0.00093
150	0.17036 ± 0.00041	0.50595 ± 0.00105	-0.27405 ± 0.00138	-0.81765 ± 0.00091
155	0.18219 ± 0.00046	0.41678 ± 0.00091	-0.47383 ± 0.00103	-0.77574 ± 0.00089
160	0.19268 ± 0.00049	0.32967 ± 0.00074	-0.65202 ± 0.00069	-0.68278 ± 0.00082
165	0.20136 ± 0.00053	0.24484 ± 0.00056	-0.79344 ± 0.00041	-0.54859 ± 0.00068
170	0.20785 ± 0.00055	0.16201 ± 0.00038	-0.90935 ± 0.00018	-0.35320 ± 0.00049
175	0.21185 ± 0.00056	0.08063 ± 0.00019	-0.97711 ± 0.00005	-0.19686 ± 0.00026
180	0.21321 ± 0.00057	0.00000 ± 0.00000	-1.00000 ± 0.00000	-0.00000 ± 0.00000

3.75-MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	$K_z^{x'}$	$K_x^{x'}$
5	152.01741 ± 0.03772	0.00412 ± 0.00000	0.99754 ± 0.00000	-0.00995 ± 0.00001
10	9.51061 ± 0.00004	0.02934 ± 0.00005	0.99764 ± 0.00001	-0.15395 ± 0.00000
15	2.30669 ± 0.00273	0.00479 ± 0.00023	0.99745 ± 0.00003	-0.20112 ± 0.00017
20	1.12730 ± 0.00103	0.06955 ± 0.00043	0.99503 ± 0.00005	-0.43592 ± 0.00017
25	0.78779 ± 0.00047	0.04095 ± 0.00074	0.90935 ± 0.00006	-0.50631 ± 0.00011
30	0.04186 ± 0.00047	-0.00021 ± 0.00096	0.70459 ± 0.00013	-0.70940 ± 0.00013
35	0.55592 ± 0.00054	-0.04218 ± 0.00116	0.58527 ± 0.00025	-0.80974 ± 0.00021
40	0.49266 ± 0.00057	-0.06108 ± 0.00135	0.45073 ± 0.00040	-0.88097 ± 0.00027
45	0.43955 ± 0.00057	-0.11572 ± 0.00152	0.30148 ± 0.00056	-0.94642 ± 0.00030
50	0.39186 ± 0.00054	-0.14540 ± 0.00170	0.13850 ± 0.00071	-0.97963 ± 0.00031
55	0.34777 ± 0.00049	-0.16920 ± 0.00168	-0.03631 ± 0.00035	-0.98491 ± 0.00031
60	0.30669 ± 0.00043	-0.18565 ± 0.00205	-0.21975 ± 0.00095	-0.95773 ± 0.00037
65	0.26854 ± 0.00037	-0.19255 ± 0.00221	-0.40581 ± 0.00100	-0.89299 ± 0.00052
70	0.23350 ± 0.00031	-0.18674 ± 0.00236	-0.50950 ± 0.00096	-0.78560 ± 0.00073
75	0.20184 ± 0.00025	-0.16402 ± 0.00248	-0.75705 ± 0.00037	-0.63148 ± 0.00099
80	0.17304 ± 0.00020	-0.11915 ± 0.00256	-0.89519 ± 0.00064	-0.42946 ± 0.00124
85	0.14974 ± 0.00015	-0.04640 ± 0.00258	-0.98174 ± 0.00029	-0.18445 ± 0.00146
90	0.12971 ± 0.00012	0.05095 ± 0.00251	-0.99437 ± 0.00019	0.08803 ± 0.00158
95	0.11385 ± 0.00009	0.19791 ± 0.00235	-0.91253 ± 0.00074	0.35795 ± 0.00157
100	0.10216 ± 0.00006	0.36305 ± 0.00211	-0.72855 ± 0.00129	0.58037 ± 0.00145
105	0.09452 ± 0.00005	0.54006 ± 0.00182	-0.45977 ± 0.00175	0.70494 ± 0.00137
110	0.09073 ± 0.00006	0.70182 ± 0.00153	-0.15292 ± 0.00205	0.69574 ± 0.00152
115	0.09049 ± 0.00000	0.82465 ± 0.00127	0.12814 ± 0.00221	0.55094 ± 0.00183
120	0.09343 ± 0.00011	0.89393 ± 0.00112	0.32740 ± 0.00230	0.30604 ± 0.00204
125	0.09908 ± 0.00015	0.90005 ± 0.00110	0.41670 ± 0.00230	0.01696 ± 0.00200
130	0.10692 ± 0.00019	0.87691 ± 0.00116	0.39799 ± 0.00243	-0.26283 ± 0.00177
135	0.11641 ± 0.00024	0.61747 ± 0.00121	0.29230 ± 0.00233	-0.49625 ± 0.00145
140	0.12695 ± 0.00029	0.73651 ± 0.00122	0.12801 ± 0.00220	-0.66387 ± 0.00120
145	0.13797 ± 0.00034	0.64611 ± 0.00117	-0.06832 ± 0.00190	-0.76010 ± 0.00107
150	0.14888 ± 0.00036	0.55134 ± 0.00107	-0.27440 ± 0.00154	-0.78756 ± 0.00103
155	0.15915 ± 0.00042	0.45595 ± 0.00093	-0.47290 ± 0.00115	-0.75392 ± 0.00100
160	0.16829 ± 0.00046	0.36170 ± 0.00077	-0.65094 ± 0.00070	-0.66742 ± 0.00092
165	0.17586 ± 0.00049	0.26917 ± 0.00059	-0.79562 ± 0.00045	-0.53029 ± 0.00077
170	0.18153 ± 0.00051	0.17835 ± 0.00040	-0.90092 ± 0.00021	-0.37090 ± 0.00055
175	0.18503 ± 0.00053	0.09083 ± 0.00020	-0.97699 ± 0.00005	-0.19300 ± 0.00029
180	0.18622 ± 0.00053	0.00000 ± 0.00000	-1.00000 ± 0.00000	-0.00000 ± 0.00000

4.00MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	K_z'	K_x'
5	134.36290 ± 0.03390	0.00420 ± 0.00000	0.99751 ± 0.00000	-0.07041 ± 0.00001
10	8.45667 ± 0.00707	0.02336 ± 0.00006	0.95715 ± 0.00001	-0.15726 ± 0.00008
15	2.09305 ± 0.00233	0.05767 ± 0.00025	0.95561 ± 0.00003	-0.23327 ± 0.00016
20	1.04460 ± 0.00087	0.05258 ± 0.00053	0.89363 ± 0.00004	-0.44532 ± 0.00014
25	0.73908 ± 0.00049	0.01591 ± 0.00079	0.80845 ± 0.00007	-0.58835 ± 0.00010
30	0.60597 ± 0.00054	-0.03102 ± 0.00102	0.70662 ± 0.00017	-0.70591 ± 0.00019
35	0.52655 ± 0.00060	-0.07771 ± 0.00122	0.59002 ± 0.00032	-0.80364 ± 0.00030
40	0.46757 ± 0.00061	-0.12104 ± 0.00140	0.45872 ± 0.00043	-0.83030 ± 0.00036
45	0.41776 ± 0.00060	-0.16016 ± 0.00158	0.31296 ± 0.00065	-0.93616 ± 0.00042
50	0.37267 ± 0.00056	-0.19455 ± 0.00175	0.15361 ± 0.00082	-0.96879 ± 0.00043
55	0.33126 ± 0.00050	-0.22335 ± 0.00192	-0.01758 ± 0.00097	-0.97458 ± 0.00043
60	0.29239 ± 0.00044	-0.24514 ± 0.00209	-0.19769 ± 0.00109	-0.94912 ± 0.00047
65	0.25620 ± 0.00037	-0.25772 ± 0.00225	-0.38211 ± 0.00115	-0.88745 ± 0.00059
70	0.22269 ± 0.00031	-0.25791 ± 0.00240	-0.56307 ± 0.00114	-0.78456 ± 0.00079
75	0.19269 ± 0.00025	-0.24135 ± 0.00253	-0.73276 ± 0.00103	-0.63625 ± 0.00103
80	0.16587 ± 0.00019	-0.20250 ± 0.00261	-0.87443 ± 0.00080	-0.44086 ± 0.00128
85	0.14267 ± 0.00015	-0.13498 ± 0.00263	-0.97000 ± 0.00045	-0.20221 ± 0.00149
90	0.12326 ± 0.00011	-0.03266 ± 0.00257	-0.99726 ± 0.00014	0.06631 ± 0.00161
95	0.10773 ± 0.00008	0.10655 ± 0.00241	-0.93532 ± 0.00061	0.33738 ± 0.00159
100	0.09605 ± 0.00006	0.27859 ± 0.00217	-0.77385 ± 0.00117	0.56866 ± 0.00145
105	0.08821 ± 0.00005	0.46902 ± 0.00168	-0.52502 ± 0.00165	0.71019 ± 0.00131
110	0.08395 ± 0.00005	0.65189 ± 0.00158	-0.22939 ± 0.00202	0.72263 ± 0.00141
115	0.08301 ± 0.00007	0.79992 ± 0.00131	0.05053 ± 0.00223	0.59797 ± 0.00174
120	0.08506 ± 0.00009	0.89364 ± 0.00110	0.25854 ± 0.00238	0.36534 ± 0.00201
125	0.08967 ± 0.00013	0.92883 ± 0.00101	0.36134 ± 0.00250	0.08186 ± 0.00205
130	0.09636 ± 0.00017	0.91256 ± 0.00104	0.35646 ± 0.00258	-0.20044 ± 0.00166
135	0.10462 ± 0.00022	0.85851 ± 0.00111	0.26272 ± 0.00254	-0.44039 ± 0.00157
140	0.11391 ± 0.00026	0.78019 ± 0.00115	0.10749 ± 0.00236	-0.61623 ± 0.00131
145	0.12370 ± 0.00031	0.68823 ± 0.00113	-0.08221 ± 0.00205	-0.72082 ± 0.00117
150	0.13344 ± 0.00035	0.58951 ± 0.00105	-0.26355 ± 0.00167	-0.75611 ± 0.00113
155	0.14265 ± 0.00039	0.48929 ± 0.00093	-0.47882 ± 0.00125	-0.72692 ± 0.00110
160	0.15086 ± 0.00043	0.38399 ± 0.00077	-0.65446 ± 0.00095	-0.64536 ± 0.00101
165	0.15768 ± 0.00046	0.28993 ± 0.00060	-0.80051 ± 0.00050	-0.52453 ± 0.00084
170	0.16276 ± 0.00048	0.19230 ± 0.00040	-0.90973 ± 0.00023	-0.36797 ± 0.00060
175	0.16595 ± 0.00050	0.09583 ± 0.00020	-0.97720 ± 0.00005	-0.18949 ± 0.00032
180	0.16702 ± 0.00050	0.00000 ± 0.00000	-1.00000 ± 0.00000	-0.00000 ± 0.00000

4.25MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	K_z^x	K_x^x
5	119.15517 ± 0.03071	0.00423 ± 0.00000	0.99740 ± 0.00000	-0.07081 ± 0.00001
10	7.55524 ± 0.00632	0.02726 ± 0.00007	0.98671 ± 0.00001	-0.16018 ± 0.00008
15	1.90624 ± 0.00206	0.05051 ± 0.00026	0.95438 ± 0.00003	-0.29429 ± 0.00014
20	0.97058 ± 0.00080	0.03630 ± 0.00057	0.89240 ± 0.00004	-0.44979 ± 0.00011
25	0.69582 ± 0.00054	-0.00750 ± 0.00084	0.80877 ± 0.00009	-0.58808 ± 0.00013
30	0.57460 ± 0.00059	-0.05938 ± 0.00107	0.70973 ± 0.00022	-0.70196 ± 0.00028
35	0.50127 ± 0.00063	-0.11005 ± 0.00126	0.59646 ± 0.00038	-0.79506 ± 0.00041
40	0.44618 ± 0.00064	-0.15712 ± 0.00143	0.46884 ± 0.00057	-0.86920 ± 0.00050
45	0.39927 ± 0.00061	-0.20008 ± 0.00160	0.32700 ± 0.00076	-0.92360 ± 0.00054
50	0.35676 ± 0.00056	-0.23855 ± 0.00177	0.17169 ± 0.00094	-0.95583 ± 0.00055
55	0.31719 ± 0.00050	-0.27175 ± 0.00194	0.00448 ± 0.00111	-0.96236 ± 0.00055
60	0.28011 ± 0.00044	-0.29829 ± 0.00210	-0.17198 ± 0.00124	-0.93885 ± 0.00057
65	0.24551 ± 0.00037	-0.31599 ± 0.00226	-0.35349 ± 0.00132	-0.88045 ± 0.00067
70	0.21357 ± 0.00030	-0.32162 ± 0.00241	-0.53369 ± 0.00132	-0.78213 ± 0.00084
75	0.18454 ± 0.00024	-0.31071 ± 0.00253	-0.70316 ± 0.00122	-0.63955 ± 0.00107
80	0.15868 ± 0.00019	-0.27739 ± 0.00262	-0.84856 ± 0.00100	-0.45056 ± 0.00132
85	0.13624 ± 0.00014	-0.21470 ± 0.00265	-0.95205 ± 0.00066	-0.21795 ± 0.00153
90	0.11737 ± 0.00011	-0.11567 ± 0.00260	-0.99219 ± 0.00032	0.04659 ± 0.00164
95	0.10217 ± 0.00008	0.02402 ± 0.00245	-0.94780 ± 0.00055	0.31796 ± 0.00162
100	0.09064 ± 0.00006	0.20184 ± 0.00221	-0.80644 ± 0.00108	0.55580 ± 0.00147
105	0.08271 ± 0.00005	0.40407 ± 0.00192	-0.57623 ± 0.00159	0.71041 ± 0.00129
110	0.07820 ± 0.00004	0.69530 ± 0.00163	-0.29367 ± 0.00198	0.73984 ± 0.00134
115	0.07687 ± 0.00006	0.77528 ± 0.00135	-0.01725 ± 0.00224	0.63138 ± 0.00166
120	0.07837 ± 0.00003	0.69063 ± 0.00109	0.19446 ± 0.00243	0.41106 ± 0.00198
125	0.08232 ± 0.00011	0.94305 ± 0.00092	0.30551 ± 0.00259	0.13163 ± 0.00208
130	0.08828 ± 0.00015	0.93860 ± 0.00091	0.31033 ± 0.00268	-0.15075 ± 0.00193
135	0.09575 ± 0.00020	0.89097 ± 0.00099	0.22585 ± 0.00266	-0.39391 ± 0.00165
140	0.10423 ± 0.00024	0.81476 ± 0.00106	0.07872 ± 0.00248	-0.57443 ± 0.00139
145	0.11321 ± 0.00029	0.72186 ± 0.00107	-0.10409 ± 0.00217	-0.68416 ± 0.00124
150	0.12219 ± 0.00033	0.62053 ± 0.00101	-0.29967 ± 0.00176	-0.72467 ± 0.00120
155	0.13069 ± 0.00037	0.51588 ± 0.00091	-0.49005 ± 0.00132	-0.70265 ± 0.00116
160	0.13829 ± 0.00040	0.41076 ± 0.00076	-0.65171 ± 0.00090	-0.62724 ± 0.00106
165	0.14461 ± 0.00043	0.30647 ± 0.00059	-0.80462 ± 0.00053	-0.50859 ± 0.00089
170	0.14935 ± 0.00045	0.20341 ± 0.00040	-0.91158 ± 0.00024	-0.35729 ± 0.00064
175	0.15228 ± 0.00047	0.10140 ± 0.00023	-0.97765 ± 0.00006	-0.18413 ± 0.00033
180	0.15328 ± 0.00047	0.00000 ± 0.00000	-1.00000 ± 0.00000	-0.00000 ± 0.00000

4.50 MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	K_z'	K_x'
5	106.32234 ± 0.02806	0.00423 ± 0.00001	0.99745 ± 0.00000	-0.07118 ± 0.00001
10	6.78332 ± 0.00575	0.02599 ± 0.00008	0.98632 ± 0.00001	-0.16279 ± 0.00008
15	1.74280 ± 0.00185	0.04333 ± 0.00031	0.95319 ± 0.00003	-0.29925 ± 0.00013
20	0.90580 ± 0.00076	0.02073 ± 0.00062	0.89156 ± 0.00004	-0.45243 ± 0.00009
25	0.65832 ± 0.00058	-0.02921 ± 0.00089	0.81004 ± 0.00012	-0.55565 ± 0.00020
30	0.54778 ± 0.00062	-0.08512 ± 0.00110	0.71414 ± 0.00027	-0.69481 ± 0.00036
35	0.47959 ± 0.00065	-0.13898 ± 0.00126	0.60453 ± 0.00046	-0.78436 ± 0.00052
40	0.42821 ± 0.00064	-0.18910 ± 0.00145	0.48092 ± 0.00066	-0.85613 ± 0.00061
45	0.38377 ± 0.00061	-0.23526 ± 0.00161	0.34333 ± 0.00086	-0.90927 ± 0.00066
50	0.34321 ± 0.00056	-0.27722 ± 0.00177	0.19238 ± 0.00107	-0.94135 ± 0.00067
55	0.30529 ± 0.00050	-0.31426 ± 0.00193	0.02943 ± 0.00125	-0.94888 ± 0.00066
60	0.26963 ± 0.00043	-0.34506 ± 0.00208	-0.14315 ± 0.00139	-0.92760 ± 0.00067
65	0.23626 ± 0.00036	-0.36743 ± 0.00224	-0.32157 ± 0.00149	-0.87209 ± 0.00073
70	0.20538 ± 0.00029	-0.37814 ± 0.00236	-0.50004 ± 0.00150	-0.77908 ± 0.00089
75	0.17727 ± 0.00023	-0.37256 ± 0.00251	-0.66988 ± 0.00141	-0.64223 ± 0.00111
80	0.15217 ± 0.00018	-0.34457 ± 0.00260	-0.81863 ± 0.00120	-0.45947 ± 0.00136
85	0.13033 ± 0.00014	-0.28661 ± 0.00265	-0.92938 ± 0.00088	-0.23262 ± 0.00157
90	0.11192 ± 0.00010	-0.19070 ± 0.00281	-0.98124 ± 0.00051	0.02812 ± 0.00169
95	0.09702 ± 0.00008	-0.05103 ± 0.00247	-0.95272 ± 0.00054	0.29953 ± 0.00167
100	0.08566 ± 0.00006	0.13164 ± 0.00224	-0.82954 ± 0.00102	0.54271 ± 0.00150
105	0.07775 ± 0.00005	0.34476 ± 0.00196	-0.61646 ± 0.00153	0.70790 ± 0.00130
110	0.07315 ± 0.00004	0.56248 ± 0.00167	-0.34631 ± 0.00195	0.75079 ± 0.00130
115	0.07160 ± 0.00005	0.75189 ± 0.00139	-0.07559 ± 0.00225	0.65494 ± 0.00161
120	0.07280 ± 0.00007	0.88583 ± 0.00108	0.13650 ± 0.00246	0.44347 ± 0.00196
125	0.07637 ± 0.00010	0.95298 ± 0.00083	0.25187 ± 0.00264	0.16848 ± 0.00209
130	0.08188 ± 0.00014	0.95822 ± 0.00076	0.26264 ± 0.00275	-0.11283 ± 0.00197
135	0.08887 ± 0.00018	0.91563 ± 0.00085	0.18511 ± 0.00273	-0.35587 ± 0.00170
140	0.09685 ± 0.00022	0.84093 ± 0.00096	0.04481 ± 0.00255	-0.53929 ± 0.00144
145	0.10533 ± 0.00027	0.74715 ± 0.00100	-0.13133 ± 0.00223	-0.65155 ± 0.00129
150	0.11383 ± 0.00031	0.64347 ± 0.00098	-0.32056 ± 0.00181	-0.69511 ± 0.00123
155	0.12189 ± 0.00035	0.53563 ± 0.00089	-0.50512 ± 0.00136	-0.67672 ± 0.00118
160	0.12910 ± 0.00038	0.42683 ± 0.00076	-0.67166 ± 0.00092	-0.60555 ± 0.00108
165	0.13511 ± 0.00041	0.31864 ± 0.00059	-0.81036 ± 0.00054	-0.49172 ± 0.00091
170	0.13961 ± 0.00043	0.21156 ± 0.00040	-0.91417 ± 0.00025	-0.34574 ± 0.00065
175	0.14241 ± 0.00044	0.10549 ± 0.00020	-0.97831 ± 0.00006	-0.17825 ± 0.00034
180	0.14335 ± 0.00045	0.00000 ± 0.00000	-1.00000 ± 0.00000	-0.00000 ± 0.00000

4.75 MeV Laboratory energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	$K_x^{x'}$	$K_x^{x'}$
5	0.41059 ±0.02592	0.00420 ±0.00001	0.99743 ±0.00000	-0.07151 ±0.00001
10	0.12055 ±0.00531	0.02462 ±0.00010	0.90597 ±0.00001	-0.16511 ±0.00005
15	1.00113 ±0.00176	0.03615 ±0.00034	0.95223 ±0.00002	-0.30323 ±0.00011
20	0.04360 ±0.00077	0.00597 ±0.00066	0.03130 ±0.00005	-0.45338 ±0.00010
25	0.02614 ±0.00061	-0.04934 ±0.00092	0.01221 ±0.00016	-0.50130 ±0.00020
30	0.52502 ±0.00064	-0.10005 ±0.00112	0.71909 ±0.00033	-0.60503 ±0.00040
35	0.46191 ±0.00065	-0.16433 ±0.00120	0.01390 ±0.00053	-0.77203 ±0.00063
40	0.41315 ±0.00064	-0.21602 ±0.00144	0.43460 ±0.00075	-0.04164 ±0.00073
45	0.37070 ±0.00060	-0.26557 ±0.00159	0.36140 ±0.00097	-0.09376 ±0.00070
50	0.33100 ±0.00055	-0.31045 ±0.00174	0.21500 ±0.00119	-0.92594 ±0.00070
55	0.29510 ±0.00040	-0.35004 ±0.00189	0.05550 ±0.00130	-0.93472 ±0.00076
60	0.26063 ±0.00042	-0.30545 ±0.00204	-0.11195 ±0.00155	-0.91591 ±0.00075
65	0.22021 ±0.00035	-0.41214 ±0.00210	-0.20714 ±0.00165	-0.05463 ±0.00079
70	0.19315 ±0.00020	-0.42703 ±0.00232	-0.40373 ±0.00160	-0.77594 ±0.00092
75	0.17073 ±0.00022	-0.42724 ±0.00245	-0.63376 ±0.00160	-0.64464 ±0.00114
80	0.14023 ±0.00017	-0.40453 ±0.00250	-0.70559 ±0.00140	-0.46519 ±0.00130
85	0.12400 ±0.00013	-0.35140 ±0.00202	-0.90309 ±0.00108	-0.24007 ±0.00100
90	0.10002 ±0.00010	-0.25000 ±0.00260	-0.90506 ±0.00070	0.01035 ±0.00173
95	0.09220 ±0.00005	-0.11959 ±0.00240	-0.95190 ±0.00059	0.20103 ±0.00172
100	0.00100 ±0.00006	0.06733 ±0.00227	-0.04546 ±0.00099	0.52970 ±0.00156
105	0.07310 ±0.00005	0.29050 ±0.00199	-0.64500 ±0.00150	0.70399 ±0.00133
110	0.06557 ±0.00005	0.52339 ±0.00171	-0.30360 ±0.00194	0.75777 ±0.00129
115	0.00695 ±0.00005	0.73033 ±0.00142	-0.12533 ±0.00226	0.07149 ±0.00157
120	0.06000 ±0.00006	0.00040 ±0.00100	0.00511 ±0.00249	0.40537 ±0.00194
125	0.07130 ±0.00009	0.95905 ±0.00075	0.20195 ±0.00207	0.19467 ±0.00210
130	0.07605 ±0.00012	0.97201 ±0.00062	0.21627 ±0.00270	-0.00521 ±0.00200
135	0.00337 ±0.00016	0.93354 ±0.00073	0.14315 ±0.00276	-0.32005 ±0.00174
140	0.09100 ±0.00020	0.05357 ±0.00000	0.00041 ±0.00257	-0.51094 ±0.00147
145	0.09925 ±0.00025	0.70403 ±0.00096	-0.10153 ±0.00225	-0.02366 ±0.00130
150	0.10747 ±0.00029	0.65923 ±0.00095	-0.34430 ±0.00103	-0.00049 ±0.00123
155	0.11520 ±0.00032	0.54093 ±0.00050	-0.52253 ±0.00137	-0.05237 ±0.00110
160	0.12220 ±0.00036	0.43750 ±0.00075	-0.60329 ±0.00093	-0.50450 ±0.00100
165	0.12000 ±0.00030	0.32070 ±0.00059	-0.01712 ±0.00054	-0.47490 ±0.00090
170	0.13245 ±0.00040	0.21092 ±0.00041	-0.91724 ±0.00025	-0.33400 ±0.00065
175	0.13510 ±0.00042	0.10017 ±0.00021	-0.97909 ±0.00006	-0.17220 ±0.00034
180	0.13600 ±0.00042	0.00000 ±0.00000	-1.00000 ±0.00000	-0.00000 ±0.00000

5.00MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	$K_z^{x'}$	$K_x^{x'}$
5	36.03414 ± 0.02414	0.00416 ± 0.00001	0.93741 ± 0.00000	-0.07162 ± 0.00001
10	5.54940 ± 0.00497	0.02316 ± 0.00011	0.96566 ± 0.00001	-0.16716 ± 0.00003
15	1.47844 ± 0.00167	0.02909 ± 0.00036	0.95150 ± 0.00002	-0.30627 ± 0.00009
20	0.30121 ± 0.00076	-0.00760 ± 0.00059	0.89158 ± 0.00007	-0.45280 ± 0.00014
25	0.59859 ± 0.00063	-0.05581 ± 0.00094	0.81516 ± 0.00020	-0.57537 ± 0.00037
30	0.50570 ± 0.00065	-0.12805 ± 0.00112	0.72617 ± 0.00038	-0.67548 ± 0.00050
35	0.44673 ± 0.00065	-0.18502 ± 0.00128	0.62446 ± 0.00060	-0.75558 ± 0.00074
40	0.40046 ± 0.00063	-0.24026 ± 0.00142	0.50942 ± 0.00063	-0.82829 ± 0.00084
45	0.35978 ± 0.00059	-0.29104 ± 0.00156	0.38086 ± 0.00107	-0.87763 ± 0.00089
50	0.32210 ± 0.00053	-0.33535 ± 0.00170	0.23912 ± 0.00130	-0.91013 ± 0.00089
55	0.28651 ± 0.00047	-0.38162 ± 0.00184	0.08516 ± 0.00151	-0.92039 ± 0.00086
60	0.25282 ± 0.00040	-0.41964 ± 0.00195	-0.07922 ± 0.00169	-0.90423 ± 0.00083
65	0.22113 ± 0.00033	-0.45031 ± 0.00211	-0.25107 ± 0.00181	-0.85685 ± 0.00084
70	0.19169 ± 0.00027	-0.47036 ± 0.00225	-0.42565 ± 0.00185	-0.77303 ± 0.00095
75	0.16481 ± 0.00021	-0.47503 ± 0.00238	-0.59568 ± 0.00179	-0.64770 ± 0.00115
80	0.14075 ± 0.00016	-0.45766 ± 0.00249	-0.75030 ± 0.00159	-0.47708 ± 0.00140
85	0.11976 ± 0.00012	-0.40957 ± 0.00256	-0.87412 ± 0.00127	-0.26107 ± 0.00163
90	0.10202 ± 0.00009	-0.32079 ± 0.00257	-0.94712 ± 0.00087	-0.00713 ± 0.00178
95	0.08763 ± 0.00008	-0.18245 ± 0.00248	-0.94694 ± 0.00066	0.26459 ± 0.00170
100	0.07661 ± 0.00007	0.00813 ± 0.00228	-0.85587 ± 0.00095	0.51712 ± 0.00162
105	0.06890 ± 0.00006	0.24065 ± 0.00202	-0.67294 ± 0.00149	0.69946 ± 0.00139
110	0.06435 ± 0.00005	0.48777 ± 0.00174	-0.42540 ± 0.00195	0.76230 ± 0.00130
115	0.06273 ± 0.00005	0.71083 ± 0.00145	-0.16745 ± 0.00228	0.88314 ± 0.00155
120	0.06375 ± 0.00005	0.87522 ± 0.00108	0.04020 ± 0.00252	0.48205 ± 0.00192
125	0.06704 ± 0.00008	0.95459 ± 0.00068	0.15659 ± 0.00270	0.21226 ± 0.00210
130	0.07221 ± 0.00011	0.98284 ± 0.00049	0.17215 ± 0.00279	-0.06529 ± 0.00201
135	0.07881 ± 0.00015	0.94583 ± 0.00063	0.10193 ± 0.00275	-0.30825 ± 0.00175
140	0.08637 ± 0.00019	0.87182 ± 0.00082	-0.02844 ± 0.00255	-0.45900 ± 0.00143
145	0.09442 ± 0.00023	0.77594 ± 0.00093	-0.19276 ± 0.00222	-0.60064 ± 0.00130
150	0.10250 ± 0.00027	0.66875 ± 0.00094	-0.36920 ± 0.00180	-0.64534 ± 0.00122
155	0.11018 ± 0.00030	0.55678 ± 0.00088	-0.54098 ± 0.00135	-0.63034 ± 0.00116
160	0.11705 ± 0.00034	0.44368 ± 0.00075	-0.69570 ± 0.00091	-0.56493 ± 0.00106
165	0.12278 ± 0.00036	0.33118 ± 0.00059	-0.82436 ± 0.00053	-0.45907 ± 0.00088
170	0.12708 ± 0.00038	0.21986 ± 0.00041	-0.92055 ± 0.00024	-0.32289 ± 0.00063
175	0.12974 ± 0.00039	0.10952 ± 0.00021	-0.97993 ± 0.00006	-0.16549 ± 0.00033
180	0.13064 ± 0.00040	0.00000 ± 0.00000	-1.00000 ± 0.00000	-0.00000 ± 0.00000

5.50 MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	K_z'	K_x'
5	71.05568 ±0.02144	0.00401 ±0.00001	0.99737 ±0.00000	-0.07234 ±0.00002
10	4.62513 ±0.00440	0.02010 ±0.00014	0.99515 ±0.00001	-0.17049 ±0.00007
15	1.27922 ±0.00150	0.01500 ±0.00044	0.95007 ±0.00002	-0.30932 ±0.00000
20	0.72273 ±0.00070	-0.03107 ±0.00075	0.83340 ±0.00011	-0.44796 ±0.00020
25	0.55431 ±0.00063	-0.09590 ±0.00090	0.62274 ±0.00020	-0.56226 ±0.00054
30	0.47489 ±0.00063	-0.15930 ±0.00112	0.74006 ±0.00049	-0.65240 ±0.00070
35	0.42260 ±0.00062	-0.21692 ±0.00124	0.64708 ±0.00073	-0.73032 ±0.00095
40	0.38025 ±0.00060	-0.27510 ±0.00136	0.54059 ±0.00099	-0.79504 ±0.00105
45	0.34219 ±0.00055	-0.32850 ±0.00148	0.42103 ±0.00125	-0.84547 ±0.00109
50	0.30642 ±0.00050	-0.37931 ±0.00159	0.28852 ±0.00151	-0.87914 ±0.00108
55	0.27231 ±0.00043	-0.42710 ±0.00171	0.14303 ±0.00174	-0.89272 ±0.00102
60	0.23931 ±0.00037	-0.47081 ±0.00162	-0.01240 ±0.00194	-0.88215 ±0.00095
65	0.20912 ±0.00031	-0.50349 ±0.00194	-0.17735 ±0.00208	-0.84261 ±0.00092
70	0.18054 ±0.00025	-0.53698 ±0.00206	-0.34751 ±0.00215	-0.79570 ±0.00099
75	0.15438 ±0.00019	-0.55147 ±0.00218	-0.51689 ±0.00211	-0.65476 ±0.00117
80	0.13095 ±0.00015	-0.54493 ±0.00230	-0.67611 ±0.00193	-0.49591 ±0.00143
85	0.11050 ±0.00011	-0.50772 ±0.00240	-0.81121 ±0.00161	-0.29011 ±0.00169
90	0.09321 ±0.00009	-0.42705 ±0.00246	-0.90207 ±0.00118	-0.04210 ±0.00188
95	0.07920 ±0.00008	-0.29325 ±0.00243	-0.92770 ±0.00084	0.23072 ±0.00192
100	0.06050 ±0.00007	-0.09735 ±0.00229	-0.86400 ±0.00102	0.49260 ±0.00170
105	0.06104 ±0.00006	0.15202 ±0.00206	-0.70760 ±0.00153	0.69007 ±0.00153
110	0.05660 ±0.00006	0.42565 ±0.00179	-0.47901 ±0.00202	0.76770 ±0.00136
115	0.05521 ±0.00006	0.67795 ±0.00140	-0.23263 ±0.00238	0.69731 ±0.00156
120	0.05633 ±0.00006	0.86631 ±0.00107	-0.03179 ±0.00260	0.49349 ±0.00189
125	0.05970 ±0.00007	0.97021 ±0.00050	0.08039 ±0.00273	0.22055 ±0.00207
130	0.06490 ±0.00010	0.99435 ±0.00027	0.09438 ±0.00277	-0.04854 ±0.00199
135	0.07151 ±0.00013	0.95777 ±0.00052	0.02610 ±0.00267	-0.20635 ±0.00174
140	0.07900 ±0.00016	0.88168 ±0.00070	-0.09811 ±0.00244	-0.46154 ±0.00147
145	0.08709 ±0.00020	0.78310 ±0.00092	-0.25301 ±0.00210	-0.56811 ±0.00128
150	0.09514 ±0.00023	0.67348 ±0.00094	-0.41709 ±0.00160	-0.60975 ±0.00117
155	0.10270 ±0.00020	0.55950 ±0.00088	-0.57737 ±0.00125	-0.59450 ±0.00109
160	0.10962 ±0.00029	0.44528 ±0.00076	-0.72032 ±0.00084	-0.53180 ±0.00096
165	0.11532 ±0.00032	0.33197 ±0.00060	-0.83070 ±0.00049	-0.43155 ±0.00081
170	0.11959 ±0.00034	0.22020 ±0.00041	-0.92713 ±0.00022	-0.30321 ±0.00050
175	0.12224 ±0.00035	0.10974 ±0.00021	-0.98160 ±0.00006	-0.15624 ±0.00030
180	0.12314 ±0.00035	0.00000 ±0.00000	-1.00000 ±0.00000	-0.00000 ±0.00000

0.00MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	$K_z^{x'}$	$K_x^{x'}$
5	59.01527 $\pm$ 0.01451	0.00384 $\pm$ 0.00002	0.99734 $\pm$ 0.00000	-0.07276 $\pm$ 0.00002
10	3.91907 $\pm$ 0.00415	0.01705 $\pm$ 0.00017	0.98479 $\pm$ 0.00001	-0.17290 $\pm$ 0.00006
15	1.12635 $\pm$ 0.00148	0.00371 $\pm$ 0.00049	0.95053 $\pm$ 0.00004	-0.31062 $\pm$ 0.00011
20	0.66234 $\pm$ 0.00075	-0.05094 $\pm$ 0.00079	0.89661 $\pm$ 0.00016	-0.43958 $\pm$ 0.00039
25	0.52021 $\pm$ 0.00060	-0.11693 $\pm$ 0.00097	0.83147 $\pm$ 0.00035	-0.54312 $\pm$ 0.00071
30	0.45112 $\pm$ 0.00059	-0.18026 $\pm$ 0.00109	0.75624 $\pm$ 0.00059	-0.62698 $\pm$ 0.00097
35	0.40390 $\pm$ 0.00055	-0.23967 $\pm$ 0.00119	0.66977 $\pm$ 0.00086	-0.70283 $\pm$ 0.00114
40	0.36449 $\pm$ 0.00055	-0.29623 $\pm$ 0.00129	0.57118 $\pm$ 0.00114	-0.76551 $\pm$ 0.00124
45	0.32633 $\pm$ 0.00051	-0.35077 $\pm$ 0.00138	0.46000 $\pm$ 0.00142	-0.81570 $\pm$ 0.00127
50	0.29391 $\pm$ 0.00045	-0.40360 $\pm$ 0.00148	0.33614 $\pm$ 0.00169	-0.85095 $\pm$ 0.00124
55	0.26051 $\pm$ 0.00040	-0.45447 $\pm$ 0.00157	0.19986 $\pm$ 0.00195	-0.86805 $\pm$ 0.00116
60	0.22912 $\pm$ 0.00034	-0.50248 $\pm$ 0.00166	0.05194 $\pm$ 0.00216	-0.86303 $\pm$ 0.00106
65	0.19909 $\pm$ 0.00028	-0.54590 $\pm$ 0.00176	-0.10606 $\pm$ 0.00232	-0.83111 $\pm$ 0.00098
70	0.17106 $\pm$ 0.00022	-0.58178 $\pm$ 0.00186	-0.27136 $\pm$ 0.00240	-0.76674 $\pm$ 0.00099
75	0.14539 $\pm$ 0.00017	-0.60544 $\pm$ 0.00197	-0.43915 $\pm$ 0.00237	-0.65377 $\pm$ 0.00115
80	0.12238 $\pm$ 0.00013	-0.60970 $\pm$ 0.00203	-0.60149 $\pm$ 0.00221	-0.51621 $\pm$ 0.00143
85	0.10230 $\pm$ 0.00010	-0.58417 $\pm$ 0.00220	-0.74532 $\pm$ 0.00188	-0.32016 $\pm$ 0.00174
90	0.08535 $\pm$ 0.00008	-0.51501 $\pm$ 0.00230	-0.85366 $\pm$ 0.00143	-0.07764 $\pm$ 0.00195
95	0.07165 $\pm$ 0.00007	-0.38680 $\pm$ 0.00234	-0.90091 $\pm$ 0.00101	0.19687 $\pm$ 0.00208
100	0.06122 $\pm$ 0.00007	-0.18549 $\pm$ 0.00227	-0.86300 $\pm$ 0.00109	0.46872 $\pm$ 0.00197
105	0.05402 $\pm$ 0.00007	0.07527 $\pm$ 0.00208	-0.72820 $\pm$ 0.00163	0.68122 $\pm$ 0.00172
110	0.04990 $\pm$ 0.00006	0.37345 $\pm$ 0.00182	-0.51510 $\pm$ 0.00216	0.77149 $\pm$ 0.00152
115	0.04664 $\pm$ 0.00006	0.65240 $\pm$ 0.00150	-0.27785 $\pm$ 0.00253	0.70511 $\pm$ 0.00160
120	0.04997 $\pm$ 0.00006	0.86039 $\pm$ 0.00105	-0.08352 $\pm$ 0.00272	0.50274 $\pm$ 0.00188
125	0.05352 $\pm$ 0.00007	0.97334 $\pm$ 0.00049	0.02261 $\pm$ 0.00278	0.22827 $\pm$ 0.00203
130	0.05889 $\pm$ 0.00006	0.99827 $\pm$ 0.00012	0.03212 $\pm$ 0.00273	-0.04919 $\pm$ 0.00194
135	0.06565 $\pm$ 0.00011	0.95854 $\pm$ 0.00051	-0.03702 $\pm$ 0.00256	-0.28256 $\pm$ 0.00170
140	0.07334 $\pm$ 0.00014	0.87860 $\pm$ 0.00079	-0.15789 $\pm$ 0.00228	-0.45071 $\pm$ 0.00143
145	0.08150 $\pm$ 0.00017	0.77705 $\pm$ 0.00093	-0.30560 $\pm$ 0.00193	-0.55027 $\pm$ 0.00123
150	0.08986 $\pm$ 0.00020	0.66581 $\pm$ 0.00094	-0.46083 $\pm$ 0.00152	-0.58680 $\pm$ 0.00111
155	0.09739 $\pm$ 0.00023	0.55161 $\pm$ 0.00088	-0.60965 $\pm$ 0.00112	-0.56926 $\pm$ 0.00101
160	0.10431 $\pm$ 0.00025	0.43784 $\pm$ 0.00076	-0.74223 $\pm$ 0.00075	-0.50733 $\pm$ 0.00089
165	0.11007 $\pm$ 0.00027	0.32586 $\pm$ 0.00059	-0.85164 $\pm$ 0.00043	-0.41051 $\pm$ 0.00073
170	0.11439 $\pm$ 0.00029	0.21589 $\pm$ 0.00041	-0.93302 $\pm$ 0.00020	-0.28787 $\pm$ 0.00052
175	0.11707 $\pm$ 0.00030	0.10751 $\pm$ 0.00021	-0.98310 $\pm$ 0.00005	-0.14818 $\pm$ 0.00027
180	0.11798 $\pm$ 0.00030	0.00000 $\pm$ 0.00000	-1.00000 $\pm$ 0.00000	-0.00000 $\pm$ 0.00000

0.50MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	$K_z^{x'}$	$K_x^{x'}$
5	50.71496 $\pm$ 0.01606	0.00365 $\pm$ 0.00002	0.93732 $\pm$ 0.00000	-0.07303 $\pm$ 0.00002
10	3.36826 $\pm$ 0.00390	0.01419 $\pm$ 0.00020	0.95455 $\pm$ 0.00001	-0.17455 $\pm$ 0.00006
15	1.00597 $\pm$ 0.00140	-0.00642 $\pm$ 0.00034	0.95038 $\pm$ 0.00006	-0.30951 $\pm$ 0.00016
20	0.61405 $\pm$ 0.00071	-0.06525 $\pm$ 0.00031	0.90033 $\pm$ 0.00020	-0.43023 $\pm$ 0.00053
25	0.43248 $\pm$ 0.00055	-0.13101 $\pm$ 0.00036	0.84029 $\pm$ 0.00043	-0.52076 $\pm$ 0.00080
30	0.43150 $\pm$ 0.00053	-0.19291 $\pm$ 0.00105	0.77090 $\pm$ 0.00069	-0.60704 $\pm$ 0.00115
35	0.38826 $\pm$ 0.00052	-0.25111 $\pm$ 0.00113	0.69084 $\pm$ 0.00093	-0.67600 $\pm$ 0.00132
40	0.35118 $\pm$ 0.00049	-0.30705 $\pm$ 0.00121	0.59919 $\pm$ 0.00126	-0.73939 $\pm$ 0.00142
45	0.31653 $\pm$ 0.00045	-0.36169 $\pm$ 0.00123	0.49543 $\pm$ 0.00158	-0.78976 $\pm$ 0.00144
50	0.28317 $\pm$ 0.00041	-0.41546 $\pm$ 0.00136	0.37932 $\pm$ 0.00167	-0.82675 $\pm$ 0.00139
55	0.25083 $\pm$ 0.00036	-0.46822 $\pm$ 0.00144	0.25037 $\pm$ 0.00213	-0.84725 $\pm$ 0.00129
60	0.21983 $\pm$ 0.00030	-0.51930 $\pm$ 0.00151	0.11051 $\pm$ 0.00236	-0.84742 $\pm$ 0.00115
65	0.19033 $\pm$ 0.00025	-0.56721 $\pm$ 0.00159	-0.04079 $\pm$ 0.00253	-0.82256 $\pm$ 0.00102
70	0.16275 $\pm$ 0.00020	-0.60930 $\pm$ 0.00167	-0.20100 $\pm$ 0.00262	-0.76704 $\pm$ 0.00099
75	0.13747 $\pm$ 0.00016	-0.64116 $\pm$ 0.00176	-0.35637 $\pm$ 0.00260	-0.67430 $\pm$ 0.00113
80	0.11481 $\pm$ 0.00012	-0.65559 $\pm$ 0.00187	-0.53032 $\pm$ 0.00244	-0.53744 $\pm$ 0.00142
85	0.09505 $\pm$ 0.00009	-0.64204 $\pm$ 0.00200	-0.63173 $\pm$ 0.00211	-0.35076 $\pm$ 0.00178
90	0.07840 $\pm$ 0.00003	-0.58486 $\pm$ 0.00213	-0.80314 $\pm$ 0.00163	-0.11356 $\pm$ 0.00209
95	0.06437 $\pm$ 0.00007	-0.46542 $\pm$ 0.00223	-0.86999 $\pm$ 0.00116	0.16278 $\pm$ 0.00225
100	0.05479 $\pm$ 0.00007	-0.26772 $\pm$ 0.00223	-0.85455 $\pm$ 0.00119	0.44506 $\pm$ 0.00219
105	0.04763 $\pm$ 0.00006	0.00787 $\pm$ 0.00209	-0.73945 $\pm$ 0.00176	0.67317 $\pm$ 0.00193
110	0.04393 $\pm$ 0.00006	0.32892 $\pm$ 0.00184	-0.53891 $\pm$ 0.00235	0.77549 $\pm$ 0.00168
115	0.04249 $\pm$ 0.00006	0.63277 $\pm$ 0.00150	-0.30315 $\pm$ 0.00273	0.71038 $\pm$ 0.00167
120	0.04441 $\pm$ 0.00006	0.65747 $\pm$ 0.00101	-0.11906 $\pm$ 0.00287	0.50057 $\pm$ 0.00187
125	0.04815 $\pm$ 0.00006	0.97565 $\pm$ 0.00043	-0.01930 $\pm$ 0.00284	0.21847 $\pm$ 0.00197
130	0.05371 $\pm$ 0.00008	0.99803 $\pm$ 0.00013	-0.01550 $\pm$ 0.00270	-0.06085 $\pm$ 0.00187
135	0.06064 $\pm$ 0.00010	0.95303 $\pm$ 0.00055	-0.08715 $\pm$ 0.00245	-0.29006 $\pm$ 0.00163
140	0.06849 $\pm$ 0.00012	0.86841 $\pm$ 0.00081	-0.20633 $\pm$ 0.00213	-0.45089 $\pm$ 0.00138
145	0.07678 $\pm$ 0.00015	0.76398 $\pm$ 0.00093	-0.34871 $\pm$ 0.00176	-0.54269 $\pm$ 0.00119
150	0.08507 $\pm$ 0.00017	0.65175 $\pm$ 0.00094	-0.49624 $\pm$ 0.00137	-0.57356 $\pm$ 0.00106
155	0.09292 $\pm$ 0.00020	0.53809 $\pm$ 0.00086	-0.63636 $\pm$ 0.00100	-0.55272 $\pm$ 0.00095
160	0.09994 $\pm$ 0.00022	0.42599 $\pm$ 0.00074	-0.76039 $\pm$ 0.00066	-0.49024 $\pm$ 0.00082
165	0.10577 $\pm$ 0.00024	0.31643 $\pm$ 0.00058	-0.86231 $\pm$ 0.00038	-0.39534 $\pm$ 0.00066
170	0.11015 $\pm$ 0.00025	0.20937 $\pm$ 0.00040	-0.93790 $\pm$ 0.00017	-0.27661 $\pm$ 0.00047
175	0.11286 $\pm$ 0.00026	0.10419 $\pm$ 0.00020	-0.98434 $\pm$ 0.00004	-0.14220 $\pm$ 0.00024
180	0.11377 $\pm$ 0.00026	0.00000 $\pm$ 0.00000	-1.00000 $\pm$ 0.00000	-0.00000 $\pm$ 0.00000

7.00MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	$K_z^{x'}$	$K_x^{x'}$
5	43.65563 $\pm$ 0.01692	0.00347 $\pm$ 0.00003	0.99730 $\pm$ 0.00000	-0.07334 $\pm$ 0.00002
10	2.92961 $\pm$ 0.00369	0.01163 $\pm$ 0.00023	0.98439 $\pm$ 0.00001	-0.17562 $\pm$ 0.00006
15	0.90851 $\pm$ 0.00133	-0.01469 $\pm$ 0.00058	0.95153 $\pm$ 0.00008	-0.30722 $\pm$ 0.00026
20	0.57386 $\pm$ 0.00066	-0.07554 $\pm$ 0.00083	0.90417 $\pm$ 0.00025	-0.42043 $\pm$ 0.00067
25	0.46871 $\pm$ 0.00050	-0.13978 $\pm$ 0.00094	0.84857 $\pm$ 0.00050	-0.51029 $\pm$ 0.00104
30	0.41428 $\pm$ 0.00047	-0.19955 $\pm$ 0.00101	0.78414 $\pm$ 0.00078	-0.58763 $\pm$ 0.00132
35	0.37435 $\pm$ 0.00046	-0.25598 $\pm$ 0.00107	0.70950 $\pm$ 0.00109	-0.65657 $\pm$ 0.00149
40	0.33919 $\pm$ 0.00044	-0.31072 $\pm$ 0.00113	0.62376 $\pm$ 0.00141	-0.71720 $\pm$ 0.00158
45	0.30584 $\pm$ 0.00041	-0.36481 $\pm$ 0.00119	0.52637 $\pm$ 0.00173	-0.76802 $\pm$ 0.00159
50	0.27342 $\pm$ 0.00036	-0.41872 $\pm$ 0.00126	0.41699 $\pm$ 0.00203	-0.80672 $\pm$ 0.00153
55	0.24187 $\pm$ 0.00032	-0.47248 $\pm$ 0.00132	0.29545 $\pm$ 0.00231	-0.83035 $\pm$ 0.00140
60	0.21141 $\pm$ 0.00027	-0.52559 $\pm$ 0.00138	0.16188 $\pm$ 0.00254	-0.83520 $\pm$ 0.00122
65	0.18242 $\pm$ 0.00022	-0.57684 $\pm$ 0.00144	0.01683 $\pm$ 0.00272	-0.81668 $\pm$ 0.00105
70	0.15529 $\pm$ 0.00018	-0.62393 $\pm$ 0.00150	-0.13830 $\pm$ 0.00281	-0.76914 $\pm$ 0.00097
75	0.13039 $\pm$ 0.00014	-0.66280 $\pm$ 0.00158	-0.30070 $\pm$ 0.00279	-0.68576 $\pm$ 0.00109
80	0.10809 $\pm$ 0.00011	-0.68665 $\pm$ 0.00168	-0.46497 $\pm$ 0.00263	-0.55885 $\pm$ 0.00141
85	0.08865 $\pm$ 0.00008	-0.68450 $\pm$ 0.00180	-0.62143 $\pm$ 0.00229	-0.38115 $\pm$ 0.00182
90	0.07228 $\pm$ 0.00007	-0.63988 $\pm$ 0.00195	-0.75383 $\pm$ 0.00179	-0.14331 $\pm$ 0.00220
95	0.05911 $\pm$ 0.00006	-0.53104 $\pm$ 0.00209	-0.83753 $\pm$ 0.00127	0.12863 $\pm$ 0.00243
100	0.04918 $\pm$ 0.00006	-0.33669 $\pm$ 0.00216	-0.84205 $\pm$ 0.00128	0.42142 $\pm$ 0.00242
105	0.04243 $\pm$ 0.00006	-0.05193 $\pm$ 0.00208	-0.74436 $\pm$ 0.00192	0.66575 $\pm$ 0.00216
110	0.03874 $\pm$ 0.00006	0.29033 $\pm$ 0.00185	-0.55389 $\pm$ 0.00258	0.78033 $\pm$ 0.00185
115	0.03788 $\pm$ 0.00006	0.61778 $\pm$ 0.00148	-0.32721 $\pm$ 0.00295	0.71504 $\pm$ 0.00175
120	0.03957 $\pm$ 0.00006	0.65707 $\pm$ 0.00097	-0.14192 $\pm$ 0.00304	0.49526 $\pm$ 0.00186
125	0.04346 $\pm$ 0.00006	0.97789 $\pm$ 0.00039	-0.04819 $\pm$ 0.00291	0.20350 $\pm$ 0.00191
130	0.04915 $\pm$ 0.00007	0.99562 $\pm$ 0.00021	-0.05052 $\pm$ 0.00267	-0.07067 $\pm$ 0.00179
135	0.05621 $\pm$ 0.00009	0.94432 $\pm$ 0.00059	-0.12552 $\pm$ 0.00235	-0.30416 $\pm$ 0.00156
140	0.06417 $\pm$ 0.00011	0.85481 $\pm$ 0.00083	-0.24421 $\pm$ 0.00199	-0.45789 $\pm$ 0.00133
145	0.07257 $\pm$ 0.00013	0.74780 $\pm$ 0.00093	-0.38279 $\pm$ 0.00161	-0.54247 $\pm$ 0.00115
150	0.08095 $\pm$ 0.00015	0.63506 $\pm$ 0.00092	-0.52439 $\pm$ 0.00124	-0.56720 $\pm$ 0.00101
155	0.08888 $\pm$ 0.00017	0.52248 $\pm$ 0.00084	-0.65764 $\pm$ 0.00089	-0.54270 $\pm$ 0.00090
160	0.09596 $\pm$ 0.00019	0.41254 $\pm$ 0.00072	-0.77438 $\pm$ 0.00059	-0.47892 $\pm$ 0.00077
165	0.10184 $\pm$ 0.00020	0.30536 $\pm$ 0.00055	-0.87032 $\pm$ 0.00034	-0.38486 $\pm$ 0.00051
170	0.10625 $\pm$ 0.00022	0.20212 $\pm$ 0.00038	-0.94179 $\pm$ 0.00015	-0.26866 $\pm$ 0.00043
175	0.10899 $\pm$ 0.00022	0.10050 $\pm$ 0.00019	-0.98533 $\pm$ 0.00004	-0.13793 $\pm$ 0.00022
180	0.10991 $\pm$ 0.00023	-0.00000 $\pm$ 0.00000	-1.00000 $\pm$ 0.00000	-0.00000 $\pm$ 0.00000

7.50 MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	$K_x^{K'}$ K_z	$K_x^{K'}$ K_z
5	37.96224 $\pm$ 0.01630	0.00331 $\pm$ 0.00003	0.99729 $\pm$ 0.00000	-0.07352 $\pm$ 0.00002
10	2.57354 $\pm$ 0.00351	0.00941 $\pm$ 0.00026	0.98430 $\pm$ 0.00001	-0.17626 $\pm$ 0.00007
15	0.62755 $\pm$ 0.00127	-0.02127 $\pm$ 0.00062	0.95233 $\pm$ 0.00010	-0.30433 $\pm$ 0.00034
20	0.53923 $\pm$ 0.00061	-0.06265 $\pm$ 0.00064	0.90765 $\pm$ 0.00030	-0.41106 $\pm$ 0.00060
25	0.44749 $\pm$ 0.00044	-0.14473 $\pm$ 0.00092	0.85599 $\pm$ 0.00057	-0.49532 $\pm$ 0.00120
30	0.39850 $\pm$ 0.00042	-0.20209 $\pm$ 0.00096	0.79566 $\pm$ 0.00067	-0.57101 $\pm$ 0.00147
35	0.36136 $\pm$ 0.00041	-0.25651 $\pm$ 0.00101	0.72557 $\pm$ 0.00120	-0.63656 $\pm$ 0.00165
40	0.32792 $\pm$ 0.00039	-0.30975 $\pm$ 0.00106	0.64476 $\pm$ 0.00153	-0.69680 $\pm$ 0.00173
45	0.29576 $\pm$ 0.00036	-0.36267 $\pm$ 0.00112	0.55275 $\pm$ 0.00187	-0.75020 $\pm$ 0.00173
50	0.26425 $\pm$ 0.00032	-0.41640 $\pm$ 0.00117	0.44908 $\pm$ 0.00218	-0.79053 $\pm$ 0.00165
55	0.23343 $\pm$ 0.00028	-0.47048 $\pm$ 0.00122	0.33350 $\pm$ 0.00247	-0.81696 $\pm$ 0.00150
60	0.20360 $\pm$ 0.00024	-0.52480 $\pm$ 0.00127	0.20569 $\pm$ 0.00271	-0.82595 $\pm$ 0.00129
65	0.17514 $\pm$ 0.00020	-0.57642 $\pm$ 0.00131	0.06650 $\pm$ 0.00263	-0.81302 $\pm$ 0.00103
70	0.14849 $\pm$ 0.00016	-0.62936 $\pm$ 0.00136	-0.06361 $\pm$ 0.00295	-0.77257 $\pm$ 0.00096
75	0.12402 $\pm$ 0.00012	-0.67405 $\pm$ 0.00142	-0.24294 $\pm$ 0.00295	-0.69759 $\pm$ 0.00106
80	0.10210 $\pm$ 0.00010	-0.70605 $\pm$ 0.00150	-0.40067 $\pm$ 0.00279	-0.57952 $\pm$ 0.00140
85	0.08300 $\pm$ 0.00006	-0.71457 $\pm$ 0.00162	-0.56537 $\pm$ 0.00244	-0.41064 $\pm$ 0.00165
90	0.06693 $\pm$ 0.00006	-0.66243 $\pm$ 0.00176	-0.70736 $\pm$ 0.00192	-0.16422 $\pm$ 0.00230
95	0.05403 $\pm$ 0.00006	-0.55531 $\pm$ 0.00195	-0.80524 $\pm$ 0.00136	0.09461 $\pm$ 0.00261
100	0.04433 $\pm$ 0.00005	-0.39667 $\pm$ 0.00208	-0.82729 $\pm$ 0.00137	0.33760 $\pm$ 0.00285
105	0.03779 $\pm$ 0.00005	-0.10535 $\pm$ 0.00206	-0.74493 $\pm$ 0.00210	0.65877 $\pm$ 0.00240
110	0.03426 $\pm$ 0.00005	0.25639 $\pm$ 0.00185	-0.56280 $\pm$ 0.00262	0.76611 $\pm$ 0.00203
115	0.03355 $\pm$ 0.00005	0.60631 $\pm$ 0.00147	-0.33766 $\pm$ 0.00319	0.71993 $\pm$ 0.00164
120	0.03536 $\pm$ 0.00006	0.85865 $\pm$ 0.00093	-0.15475 $\pm$ 0.00320	0.46865 $\pm$ 0.00186
125	0.03935 $\pm$ 0.00006	0.99029 $\pm$ 0.00035	-0.06660 $\pm$ 0.00293	0.18600 $\pm$ 0.00186
130	0.04512 $\pm$ 0.00007	0.99218 $\pm$ 0.00026	-0.07517 $\pm$ 0.00265	-0.09963 $\pm$ 0.00172
135	0.05225 $\pm$ 0.00008	0.93420 $\pm$ 0.00063	-0.15400 $\pm$ 0.00227	-0.32179 $\pm$ 0.00150
140	0.06026 $\pm$ 0.00010	0.83999 $\pm$ 0.00084	-0.27309 $\pm$ 0.00186	-0.46888 $\pm$ 0.00129
145	0.06870 $\pm$ 0.00011	0.73075 $\pm$ 0.00092	-0.40911 $\pm$ 0.00150	-0.54647 $\pm$ 0.00112
150	0.07711 $\pm$ 0.00013	0.61767 $\pm$ 0.00091	-0.54627 $\pm$ 0.00114	-0.56553 $\pm$ 0.00099
155	0.08506 $\pm$ 0.00015	0.50664 $\pm$ 0.00083	-0.67424 $\pm$ 0.00061	-0.53732 $\pm$ 0.00097
160	0.09216 $\pm$ 0.00016	0.39904 $\pm$ 0.00070	-0.76620 $\pm$ 0.00053	-0.47186 $\pm$ 0.00073
165	0.09806 $\pm$ 0.00018	0.29533 $\pm$ 0.00055	-0.87748 $\pm$ 0.00031	-0.37790 $\pm$ 0.00056
170	0.10248 $\pm$ 0.00019	0.19492 $\pm$ 0.00038	-0.94484 $\pm$ 0.00014	-0.26321 $\pm$ 0.00041
175	0.10522 $\pm$ 0.00020	0.09666 $\pm$ 0.00019	-0.98610 $\pm$ 0.00003	-0.13496 $\pm$ 0.00021
180	0.10615 $\pm$ 0.00020	0.00000 $\pm$ 0.00000	-1.00000 $\pm$ 0.00000	-0.00000 $\pm$ 0.00000

o.034ef Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	K_x^+	K_x^-
5	33.30227 $\pm$ 0.01525	0.00317 $\pm$ 0.00004	0.99720 $\pm$ 0.00000	-0.07300 $\pm$ 0.00002
10	2.27956 $\pm$ 0.00330	0.00752 $\pm$ 0.00020	0.99429 $\pm$ 0.00002	-0.17001 $\pm$ 0.00000
15	0.75000 $\pm$ 0.00121	-0.02042 $\pm$ 0.00000	0.99319 $\pm$ 0.00014	-0.30123 $\pm$ 0.00002
20	0.50000 $\pm$ 0.00037	-0.00740 $\pm$ 0.00004	0.99123 $\pm$ 0.00034	-0.40203 $\pm$ 0.00003
25	0.42001 $\pm$ 0.00040	-0.14704 $\pm$ 0.00000	0.90240 $\pm$ 0.00003	-0.400425 $\pm$ 0.00134
30	0.30305 $\pm$ 0.00037	-0.20193 $\pm$ 0.00003	0.00000 $\pm$ 0.00000	-0.45702 $\pm$ 0.00102
35	0.34697 $\pm$ 0.00030	-0.25430 $\pm$ 0.00007	0.73919 $\pm$ 0.00130	-0.02304 $\pm$ 0.00100
40	0.31709 $\pm$ 0.00035	-0.30592 $\pm$ 0.00101	0.00250 $\pm$ 0.00100	-0.00375 $\pm$ 0.00107
45	0.26000 $\pm$ 0.00032	-0.35704 $\pm$ 0.00100	0.07494 $\pm$ 0.00200	-0.13579 $\pm$ 0.00100
50	0.25545 $\pm$ 0.00029	-0.41000 $\pm$ 0.00111	0.47600 $\pm$ 0.00232	-0.17703 $\pm$ 0.00170
55	0.22039 $\pm$ 0.00025	-0.40400 $\pm$ 0.00115	0.30553 $\pm$ 0.00202	-0.40055 $\pm$ 0.00100
60	0.19622 $\pm$ 0.00021	-0.51952 $\pm$ 0.00110	0.24300 $\pm$ 0.00200	-0.01910 $\pm$ 0.00100
65	0.10035 $\pm$ 0.00017	-0.57471 $\pm$ 0.00122	0.10000 $\pm$ 0.00304	-0.01111 $\pm$ 0.00111
70	0.14222 $\pm$ 0.00014	-0.02000 $\pm$ 0.00125	-0.03720 $\pm$ 0.00313	-0.77067 $\pm$ 0.00004
75	0.11023 $\pm$ 0.00011	-0.07700 $\pm$ 0.00129	-0.19303 $\pm$ 0.00310	-0.70937 $\pm$ 0.00103
80	0.09073 $\pm$ 0.00009	-0.71001 $\pm$ 0.00130	-0.35540 $\pm$ 0.00292	-0.59300 $\pm$ 0.00135
85	0.07000 $\pm$ 0.00007	-0.73409 $\pm$ 0.00140	-0.51717 $\pm$ 0.00250	-0.43072 $\pm$ 0.00100
90	0.06220 $\pm$ 0.00006	-0.71407 $\pm$ 0.00102	-0.00470 $\pm$ 0.00202	-0.21777 $\pm$ 0.00239
95	0.04904 $\pm$ 0.00005	-0.02000 $\pm$ 0.00102	-0.77430 $\pm$ 0.00144	0.00170 $\pm$ 0.00277
100	0.04017 $\pm$ 0.00005	-0.40000 $\pm$ 0.00100	-0.01151 $\pm$ 0.00147	0.37433 $\pm$ 0.00207
105	0.03301 $\pm$ 0.00005	-0.15327 $\pm$ 0.00203	-0.74203 $\pm$ 0.00220	0.05200 $\pm$ 0.00203
110	0.03043 $\pm$ 0.00005	0.22016 $\pm$ 0.00104	-0.50000 $\pm$ 0.00307	0.19273 $\pm$ 0.00220
115	0.02903 $\pm$ 0.00005	0.59744 $\pm$ 0.00145	-0.34142 $\pm$ 0.00343	0.72550 $\pm$ 0.00192
120	0.03172 $\pm$ 0.00005	0.00104 $\pm$ 0.00000	-0.15900 $\pm$ 0.00335	0.40175 $\pm$ 0.00100
125	0.03576 $\pm$ 0.00000	0.00200 $\pm$ 0.00003	-0.07004 $\pm$ 0.00303	0.10704 $\pm$ 0.00102
130	0.04155 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.09144 $\pm$ 0.00202	-0.12100 $\pm$ 0.00107
135	0.04500 $\pm$ 0.00007	0.42372 $\pm$ 0.00000	-0.17404 $\pm$ 0.00219	-0.34100 $\pm$ 0.00147
140	0.05000 $\pm$ 0.00009	0.02514 $\pm$ 0.00000	-0.02900 $\pm$ 0.00170	-0.40204 $\pm$ 0.00127
145	0.06510 $\pm$ 0.00010	0.71405 $\pm$ 0.00003	-0.42900 $\pm$ 0.00141	-0.55320 $\pm$ 0.00110
150	0.07349 $\pm$ 0.00012	0.00120 $\pm$ 0.00001	-0.50302 $\pm$ 0.00100	-0.50000 $\pm$ 0.00000
155	0.00141 $\pm$ 0.00013	0.49152 $\pm$ 0.00002	-0.00702 $\pm$ 0.00070	-0.55510 $\pm$ 0.00000
160	0.00000 $\pm$ 0.00015	0.30000 $\pm$ 0.00000	-0.79404 $\pm$ 0.00050	-0.40705 $\pm$ 0.00072
165	0.00000 $\pm$ 0.00016	0.20000 $\pm$ 0.00004	-0.00203 $\pm$ 0.00029	-0.37352 $\pm$ 0.00007
170	0.00000 $\pm$ 0.00017	0.10010 $\pm$ 0.00007	-0.94720 $\pm$ 0.00013	-0.25900 $\pm$ 0.00039
175	0.10149 $\pm$ 0.00017	0.09344 $\pm$ 0.00019	-0.90000 $\pm$ 0.00003	-0.13297 $\pm$ 0.00020
180	0.10242 $\pm$ 0.00017	0.00000 $\pm$ 0.00000	-1.00000 $\pm$ 0.00000	-0.00000 $\pm$ 0.00000

α c.m. deg	α (h) c.m. h/mr	δ (d) c.m. d/mr	λ y	K'_z	K'_x
10	21.5321	20.00323	0.00573	0.00031	-0.17070
15	0.00337	20.00316	-0.00341	0.00009	-0.22319
20	0.03103	20.00053	-0.00041	0.00003	-0.34493
25	0.40330	20.00030	-0.14150	0.00000	-0.47390
30	0.10349	20.00033	-0.20000	0.00000	-0.54550
35	0.13701	20.00032	-0.20043	0.00004	-0.61139
40	0.30357	20.00031	-0.30043	0.00000	-0.67734
45	0.27000	20.00020	-0.35100	0.00016	-0.72425
50	0.24010	20.00020	-0.40237	0.00010	-0.76740
55	0.21700	20.00022	-0.40040	0.00010	-0.79000
60	0.18321	20.00019	-0.51152	0.00011	-0.81434
65	0.16130	20.00019	-0.50767	0.00010	-0.83054
70	0.13042	20.00012	-0.62101	0.00017	-0.87013
75	0.11234	20.00010	-0.67000	0.00019	-0.92000
80	0.09130	20.00000	-0.72120	0.00024	-0.96002
85	0.07100	20.00000	-0.74771	0.00033	-0.96007
90	0.05010	20.00005	-0.75003	0.00049	-0.92005
95	0.04504	20.00000	-0.60000	0.00070	-0.74545
100	0.03001	20.00000	-0.44303	0.00091	-0.75501
105	0.03042	20.00000	-0.19032	0.00109	-0.73014
110	0.02717	20.00005	0.19000	0.00103	-0.50005
115	0.02005	20.00000	0.53001	0.00143	-0.33002
120	0.02057	20.00005	0.60557	0.00007	-0.19001
125	0.03201	20.00000	0.30559	0.00031	-0.00002
130	0.03030	20.00000	0.30437	0.00037	-0.10102
135	0.04540	20.00007	0.91341	0.00009	-0.10542
140	0.05340	20.00000	0.01009	0.00000	-0.31019
145	0.05175	20.00009	0.00020	0.00004	-0.44304
150	0.07000	20.00011	0.50500	0.00002	-0.57500
155	0.07791	20.00012	0.47752	0.00003	-0.60075
160	0.06492	20.00013	0.37440	0.00070	-0.60162
165	0.09074	20.00014	0.27629	0.00055	-0.50500
170	0.09511	20.00015	0.16190	0.00030	-0.94001
175	0.09761	20.00015	0.00032	0.00019	-0.90717
180	0.09072	20.00010	0.00000	0.00000	-1.00000
185	0.08492	20.00013	0.37440	0.00070	-0.60162
190	0.09074	20.00014	0.27629	0.00055	-0.50500
195	0.09511	20.00015	0.16190	0.00030	-0.94001
200	0.09761	20.00015	0.00032	0.00019	-0.90717
205	0.09072	20.00010	0.00000	0.00000	-1.00000
210	0.08492	20.00013	0.37440	0.00070	-0.60162
215	0.09074	20.00014	0.27629	0.00055	-0.50500
220	0.09511	20.00015	0.16190	0.00030	-0.94001
225	0.09761	20.00015	0.00032	0.00019	-0.90717
230	0.09072	20.00010	0.00000	0.00000	-1.00000
235	0.08492	20.00013	0.37440	0.00070	-0.60162
240	0.09074	20.00014	0.27629	0.00055	-0.50500
245	0.09511	20.00015	0.16190	0.00030	-0.94001
250	0.09761	20.00015	0.00032	0.00019	-0.90717
255	0.09072	20.00010	0.00000	0.00000	-1.00000
260	0.08492	20.00013	0.37440	0.00070	-0.60162
265	0.09074	20.00014	0.27629	0.00055	-0.50500
270	0.09511	20.00015	0.16190	0.00030	-0.94001
275	0.09761	20.00015	0.00032	0.00019	-0.90717

9.00 MeV Laboratory energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	K_z^x	K_x^x
5	20.19750 ± 0.01410	0.00290 ± 0.00005	0.93727 ± 0.00000	-0.07303 ± 0.00002
10	1.02410 ± 0.00313	0.00465 ± 0.00034	0.93423 ± 0.00002	-0.17682 ± 0.00013
15	0.04729 ± 0.00111	-0.03347 ± 0.00073	0.95404 ± 0.00016	-0.29524 ± 0.00059
20	0.45583 ± 0.00050	-0.04210 ± 0.00035	0.91692 ± 0.00043	-0.30827 ± 0.00110
25	0.39270 ± 0.00033	-0.14692 ± 0.00037	0.07290 ± 0.00075	-0.40524 ± 0.00161
30	0.35593 ± 0.00030	-0.19721 ± 0.00039	0.02109 ± 0.00111	-0.53565 ± 0.00190
35	0.32544 ± 0.00029	-0.24560 ± 0.00092	0.70029 ± 0.00145	-0.00134 ± 0.00207
40	0.29639 ± 0.00020	-0.29406 ± 0.00097	0.00975 ± 0.00166	-0.06164 ± 0.00213
45	0.26754 ± 0.00020	-0.34336 ± 0.00101	0.00395 ± 0.00223	-0.71503 ± 0.00210
50	0.23574 ± 0.00023	-0.39426 ± 0.00105	0.51739 ± 0.00257	-0.75951 ± 0.00197
55	0.21027 ± 0.00020	-0.44712 ± 0.00100	0.41461 ± 0.00266	-0.79256 ± 0.00176
60	0.18252 ± 0.00017	-0.50202 ± 0.00110	0.30017 ± 0.00312	-0.01109 ± 0.00140
65	0.15590 ± 0.00014	-0.55067 ± 0.00111	0.17376 ± 0.00329	-0.01090 ± 0.00117
70	0.13101 ± 0.00011	-0.61600 ± 0.00112	0.03535 ± 0.00336	-0.70091 ± 0.00093
75	0.10000 ± 0.00009	-0.67104 ± 0.00113	-0.11442 ± 0.00331	-0.73161 ± 0.00090
80	0.06753 ± 0.00007	-0.72121 ± 0.00116	-0.27343 ± 0.00310	-0.03047 ± 0.00136
85	0.00363 ± 0.00005	-0.75406 ± 0.00124	-0.43651 ± 0.00272	-0.45954 ± 0.00193
90	0.05460 ± 0.00005	-0.75560 ± 0.00139	-0.59240 ± 0.00214	-0.27931 ± 0.00254
95	0.04250 ± 0.00004	-0.69406 ± 0.00160	-0.71914 ± 0.00155	-0.00040 ± 0.00304
100	0.03355 ± 0.00004	-0.53227 ± 0.00183	-0.70020 ± 0.00167	0.32659 ± 0.00325
105	0.02754 ± 0.00004	-0.23501 ± 0.00194	-0.73250 ± 0.00265	0.63092 ± 0.00304
110	0.02439 ± 0.00004	0.17427 ± 0.00161	-0.56326 ± 0.00356	0.00769 ± 0.00250
115	0.02392 ± 0.00004	0.50514 ± 0.00142	-0.33422 ± 0.00366	0.73006 ± 0.00204
120	0.02506 ± 0.00005	0.07005 ± 0.00065	-0.15190 ± 0.00360	0.40097 ± 0.00100
125	0.02907 ± 0.00005	0.90030 ± 0.00029	-0.07006 ± 0.00300	0.13105 ± 0.00170
130	0.03557 ± 0.00006	0.90047 ± 0.00040	-0.10524 ± 0.00253	-0.10617 ± 0.00164
135	0.04256 ± 0.00006	0.90356 ± 0.00072	-0.19723 ± 0.00205	-0.30036 ± 0.00145
140	0.05039 ± 0.00007	0.79754 ± 0.00090	-0.32106 ± 0.00164	-0.51073 ± 0.00126
145	0.05063 ± 0.00006	0.00370 ± 0.00096	-0.45470 ± 0.00129	-0.57074 ± 0.00110
150	0.06603 ± 0.00010	0.57162 ± 0.00094	-0.50503 ± 0.00090	-0.57520 ± 0.00097
155	0.07457 ± 0.00011	0.40470 ± 0.00085	-0.70407 ± 0.00070	-0.53690 ± 0.00084
160	0.08148 ± 0.00012	0.36301 ± 0.00072	-0.00569 ± 0.00047	-0.46571 ± 0.00071
165	0.08722 ± 0.00013	0.26007 ± 0.00056	-0.00959 ± 0.00027	-0.36903 ± 0.00057
170	0.09152 ± 0.00014	0.17641 ± 0.00036	-0.35040 ± 0.00012	-0.25616 ± 0.00039
175	0.09419 ± 0.00014	0.00751 ± 0.00019	-0.90752 ± 0.00003	-0.13093 ± 0.00020
180	0.09509 ± 0.00014	0.00000 ± 0.00000	-1.00000 ± 0.00000	-0.00000 ± 0.00000

9.50 MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	$K_z^{x'}$	$K_x^{x'}$
5	23.45167 $\pm$ 0.01352	0.00209 $\pm$ 0.00005	0.99726 $\pm$ 0.00000	-0.07355 $\pm$ 0.00002
10	1.04481 $\pm$ 0.00304	0.00351 $\pm$ 0.00038	0.99424 $\pm$ 0.00053	-0.17679 $\pm$ 0.00015
15	0.00116 $\pm$ 0.00107	-0.03552 $\pm$ 0.00076	0.95558 $\pm$ 0.00018	-0.29254 $\pm$ 0.00003
20	0.43269 $\pm$ 0.00046	-0.09306 $\pm$ 0.00000	0.91927 $\pm$ 0.00047	-0.35247 $\pm$ 0.00129
25	0.37665 $\pm$ 0.00030	-0.14553 $\pm$ 0.00007	0.67703 $\pm$ 0.00031	-0.45767 $\pm$ 0.00174
30	0.34293 $\pm$ 0.00027	-0.19375 $\pm$ 0.00005	0.62712 $\pm$ 0.00110	-0.52755 $\pm$ 0.00203
35	0.31420 $\pm$ 0.00027	-0.24044 $\pm$ 0.00092	0.76839 $\pm$ 0.00157	-0.59310 $\pm$ 0.00220
40	0.26650 $\pm$ 0.00025	-0.26731 $\pm$ 0.00097	0.70015 $\pm$ 0.00196	-0.65364 $\pm$ 0.00226
45	0.25865 $\pm$ 0.00023	-0.33534 $\pm$ 0.00102	0.62105 $\pm$ 0.00234	-0.70770 $\pm$ 0.00221
50	0.23079 $\pm$ 0.00021	-0.30519 $\pm$ 0.00106	0.53303 $\pm$ 0.00205	-0.75333 $\pm$ 0.00207
55	0.20313 $\pm$ 0.00018	-0.43727 $\pm$ 0.00109	0.43317 $\pm$ 0.00299	-0.70013 $\pm$ 0.00104
60	0.17614 $\pm$ 0.00015	-0.49160 $\pm$ 0.00110	0.32176 $\pm$ 0.00323	-0.60907 $\pm$ 0.00154
65	0.15026 $\pm$ 0.00012	-0.54552 $\pm$ 0.00110	0.19547 $\pm$ 0.00339	-0.61217 $\pm$ 0.00120
70	0.12595 $\pm$ 0.00010	-0.60390 $\pm$ 0.00110	0.06394 $\pm$ 0.00344	-0.79222 $\pm$ 0.00093
75	0.10360 $\pm$ 0.00008	-0.66456 $\pm$ 0.00110	-0.08415 $\pm$ 0.00330	-0.74221 $\pm$ 0.00096
80	0.08355 $\pm$ 0.00006	-0.71802 $\pm$ 0.00111	-0.24145 $\pm$ 0.00316	-0.65261 $\pm$ 0.00135
85	0.06610 $\pm$ 0.00005	-0.75770 $\pm$ 0.00110	-0.40442 $\pm$ 0.00276	-0.51210 $\pm$ 0.00194
90	0.05144 $\pm$ 0.00004	-0.76747 $\pm$ 0.00132	-0.56202 $\pm$ 0.00218	-0.30695 $\pm$ 0.00258
95	0.03970 $\pm$ 0.00004	-0.71763 $\pm$ 0.00154	-0.69561 $\pm$ 0.00160	-0.02910 $\pm$ 0.00313
100	0.03092 $\pm$ 0.00004	-0.50532 $\pm$ 0.00177	-0.70573 $\pm$ 0.00170	0.30672 $\pm$ 0.00339
105	0.02507 $\pm$ 0.00004	-0.20973 $\pm$ 0.00190	-0.72614 $\pm$ 0.00264	0.63243 $\pm$ 0.00320
110	0.02203 $\pm$ 0.00004	0.15172 $\pm$ 0.00160	-0.55835 $\pm$ 0.00370	0.61562 $\pm$ 0.00262
115	0.02159 $\pm$ 0.00004	0.50004 $\pm$ 0.00142	-0.32510 $\pm$ 0.00404	0.74040 $\pm$ 0.00200
120	0.02351 $\pm$ 0.00004	0.67475 $\pm$ 0.00084	-0.14144 $\pm$ 0.00365	0.46346 $\pm$ 0.00167
125	0.02746 $\pm$ 0.00005	0.99090 $\pm$ 0.00020	-0.07104 $\pm$ 0.00306	0.11303 $\pm$ 0.00160
130	0.03307 $\pm$ 0.00005	0.97605 $\pm$ 0.00043	-0.10519 $\pm$ 0.00247	-0.16720 $\pm$ 0.00166
135	0.03994 $\pm$ 0.00006	0.69429 $\pm$ 0.00076	-0.20193 $\pm$ 0.00195	-0.39935 $\pm$ 0.00147
140	0.04764 $\pm$ 0.00007	0.70518 $\pm$ 0.00094	-0.32018 $\pm$ 0.00158	-0.52516 $\pm$ 0.00120
145	0.05573 $\pm$ 0.00008	0.67036 $\pm$ 0.00100	-0.40237 $\pm$ 0.00125	-0.50037 $\pm$ 0.00111
150	0.06378 $\pm$ 0.00009	0.55075 $\pm$ 0.00097	-0.59193 $\pm$ 0.00096	-0.50008 $\pm$ 0.00095
155	0.07139 $\pm$ 0.00010	0.45329 $\pm$ 0.00050	-0.70949 $\pm$ 0.00070	-0.53950 $\pm$ 0.00055
160	0.07016 $\pm$ 0.00011	0.35422 $\pm$ 0.00074	-0.81049 $\pm$ 0.00047	-0.46650 $\pm$ 0.00073
165	0.06302 $\pm$ 0.00012	0.20070 $\pm$ 0.00050	-0.89165 $\pm$ 0.00027	-0.36962 $\pm$ 0.00058
170	0.05005 $\pm$ 0.00013	0.17143 $\pm$ 0.00040	-0.95145 $\pm$ 0.00012	-0.25564 $\pm$ 0.00040
175	0.09067 $\pm$ 0.00013	0.03500 $\pm$ 0.00020	-0.95779 $\pm$ 0.00003	-0.13056 $\pm$ 0.00021
180	0.09155 $\pm$ 0.00013	0.00000 $\pm$ 0.00000	-1.00000 $\pm$ 0.00000	-0.00000 $\pm$ 0.00000

10.0 MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	$K_z^{x'}$	$K_x^{x'}$
0	21.10455 $\pm$ 0.01355	0.00235 $\pm$ 0.00005	0.99720 $\pm$ 0.00000	-0.07491 $\pm$ 0.00002
10	1.45952 $\pm$ 0.00295	0.00276 $\pm$ 0.00041	0.99420 $\pm$ 0.00003	-0.17672 $\pm$ 0.00017
15	0.95395 $\pm$ 0.00102	-0.03761 $\pm$ 0.00079	0.99620 $\pm$ 0.00021	-0.24335 $\pm$ 0.00076
20	0.41131 $\pm$ 0.00043	-0.09333 $\pm$ 0.00007	0.92132 $\pm$ 0.00001	-0.37744 $\pm$ 0.00141
25	0.36141 $\pm$ 0.00027	-0.14355 $\pm$ 0.00007	0.83057 $\pm$ 0.00007	-0.45161 $\pm$ 0.00167
30	0.33047 $\pm$ 0.00025	-0.16997 $\pm$ 0.00009	0.63223 $\pm$ 0.00125	-0.52055 $\pm$ 0.00216
35	0.30345 $\pm$ 0.00025	-0.23504 $\pm$ 0.00003	0.77522 $\pm$ 0.00165	-0.55634 $\pm$ 0.00232
40	0.27694 $\pm$ 0.00023	-0.26047 $\pm$ 0.00009	0.70557 $\pm$ 0.00205	-0.64717 $\pm$ 0.00235
45	0.25012 $\pm$ 0.00021	-0.32727 $\pm$ 0.00104	0.63255 $\pm$ 0.00244	-0.70155 $\pm$ 0.00232
50	0.22311 $\pm$ 0.00019	-0.37607 $\pm$ 0.00105	0.54505 $\pm$ 0.00279	-0.74555 $\pm$ 0.00217
55	0.19527 $\pm$ 0.00016	-0.42734 $\pm$ 0.00110	0.44551 $\pm$ 0.00309	-0.76494 $\pm$ 0.00192
60	0.17003 $\pm$ 0.00013	-0.46135 $\pm$ 0.00112	0.33975 $\pm$ 0.00351	-0.55555 $\pm$ 0.00155
65	0.14455 $\pm$ 0.00011	-0.53511 $\pm$ 0.00111	0.21951 $\pm$ 0.00347	-0.51392 $\pm$ 0.00124
70	0.12120 $\pm$ 0.00005	-0.59704 $\pm$ 0.00110	0.05559 $\pm$ 0.00351	-0.74755 $\pm$ 0.00094
75	0.09943 $\pm$ 0.00007	-0.65549 $\pm$ 0.00109	-0.05557 $\pm$ 0.00343	-0.75203 $\pm$ 0.00094
80	0.07991 $\pm$ 0.00005	-0.71267 $\pm$ 0.00109	-0.21457 $\pm$ 0.00319	-0.65765 $\pm$ 0.00134
85	0.05291 $\pm$ 0.00004	-0.75752 $\pm$ 0.00115	-0.37720 $\pm$ 0.00275	-0.53251 $\pm$ 0.00194
90	0.04553 $\pm$ 0.00004	-0.77504 $\pm$ 0.00129	-0.53735 $\pm$ 0.00219	-0.33245 $\pm$ 0.00200
95	0.03720 $\pm$ 0.00004	-0.73575 $\pm$ 0.00150	-0.67493 $\pm$ 0.00164	-0.05555 $\pm$ 0.00316
100	0.02665 $\pm$ 0.00004	-0.59339 $\pm$ 0.00174	-0.75249 $\pm$ 0.00190	0.25574 $\pm$ 0.00349
105	0.02236 $\pm$ 0.00004	-0.30050 $\pm$ 0.00165	-0.71945 $\pm$ 0.00302	0.02599 $\pm$ 0.00333
110	0.02000 $\pm$ 0.00004	0.13104 $\pm$ 0.00150	-0.55164 $\pm$ 0.00399	0.62359 $\pm$ 0.00272
115	0.01950 $\pm$ 0.00004	0.57651 $\pm$ 0.00143	-0.31345 $\pm$ 0.00419	0.75435 $\pm$ 0.00210
120	0.02145 $\pm$ 0.00004	0.67942 $\pm$ 0.00053	-0.12771 $\pm$ 0.00372	0.45561 $\pm$ 0.00165
125	0.02535 $\pm$ 0.00005	0.99329 $\pm$ 0.00023	-0.05219 $\pm$ 0.00303	0.09752 $\pm$ 0.00162
130	0.03065 $\pm$ 0.00005	0.97297 $\pm$ 0.00045	-0.10171 $\pm$ 0.00239	-0.20734 $\pm$ 0.00170
135	0.03757 $\pm$ 0.00006	0.85560 $\pm$ 0.00079	-0.20333 $\pm$ 0.00191	-0.41757 $\pm$ 0.00150
140	0.04511 $\pm$ 0.00006	0.77350 $\pm$ 0.00095	-0.33231 $\pm$ 0.00153	-0.53926 $\pm$ 0.00130
145	0.05303 $\pm$ 0.00007	0.65521 $\pm$ 0.00104	-0.46742 $\pm$ 0.00123	-0.59015 $\pm$ 0.00113
150	0.05092 $\pm$ 0.00006	0.54711 $\pm$ 0.00100	-0.59674 $\pm$ 0.00095	-0.56700 $\pm$ 0.00099
155	0.06637 $\pm$ 0.00009	0.44294 $\pm$ 0.00091	-0.71342 $\pm$ 0.00070	-0.54295 $\pm$ 0.00057
160	0.07502 $\pm$ 0.00010	0.34563 $\pm$ 0.00077	-0.81329 $\pm$ 0.00047	-0.46508 $\pm$ 0.00075
165	0.08055 $\pm$ 0.00011	0.25410 $\pm$ 0.00060	-0.89355 $\pm$ 0.00026	-0.37012 $\pm$ 0.00060
170	0.08469 $\pm$ 0.00012	0.16597 $\pm$ 0.00041	-0.95224 $\pm$ 0.00013	-0.25565 $\pm$ 0.00042
175	0.08726 $\pm$ 0.00012	0.08270 $\pm$ 0.00021	-0.96799 $\pm$ 0.00003	-0.13047 $\pm$ 0.00022
180	0.08613 $\pm$ 0.00013	0.00000 $\pm$ 0.00000	-1.00000 $\pm$ 0.00000	-0.00000 $\pm$ 0.00000

16.0 MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	K_z'	K_x'
10	1.10515 $\pm$ 0.01340	0.00201 $\pm$ 0.00000	0.00720 $\pm$ 0.00000	-0.07392 $\pm$ 0.00002
15	1.35397 $\pm$ 0.00200	0.00200 $\pm$ 0.00044	0.00427 $\pm$ 0.00004	-0.17003 $\pm$ 0.00020
20	1.52230 $\pm$ 0.00000	-0.03000 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.20705 $\pm$ 0.00000
25	1.34150 $\pm$ 0.00000	-0.04315 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.27335 $\pm$ 0.00000
30	1.34701 $\pm$ 0.00000	-0.14150 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.44023 $\pm$ 0.00000
35	0.31057 $\pm$ 0.00000	-0.10000 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.51524 $\pm$ 0.00000
40	0.23311 $\pm$ 0.00000	-0.22002 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.50077 $\pm$ 0.00000
45	0.20711 $\pm$ 0.00000	-0.27373 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.64194 $\pm$ 0.00000
50	0.24100 $\pm$ 0.00000	-0.31335 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.64172 $\pm$ 0.00000
55	0.21572 $\pm$ 0.00000	-0.30713 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.74497 $\pm$ 0.00000
60	0.10900 $\pm$ 0.00000	-0.41707 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.70273 $\pm$ 0.00000
65	0.10420 $\pm$ 0.00000	-0.47100 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.60703 $\pm$ 0.00000
70	0.13373 $\pm$ 0.00000	-0.52702 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.61009 $\pm$ 0.00000
75	0.04995 $\pm$ 0.00000	-0.64733 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.60231 $\pm$ 0.00000
80	0.07050 $\pm$ 0.00000	-0.70500 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.70176 $\pm$ 0.00000
85	0.00002 $\pm$ 0.00000	-0.75490 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.55175 $\pm$ 0.00000
90	0.04513 $\pm$ 0.00000	-0.77923 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.35500 $\pm$ 0.00000
95	0.03500 $\pm$ 0.00000	-0.74944 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.00107 $\pm$ 0.00000
100	0.02000 $\pm$ 0.00000	-0.61705 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	0.26570 $\pm$ 0.00000
105	0.02114 $\pm$ 0.00000	-0.32050 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	0.61902 $\pm$ 0.00000
110	0.01027 $\pm$ 0.00000	0.11204 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	0.83140 $\pm$ 0.00000
115	0.01788 $\pm$ 0.00000	0.57330 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	0.70255 $\pm$ 0.00000
120	0.01372 $\pm$ 0.00000	0.80304 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	0.45435 $\pm$ 0.00000
125	0.02350 $\pm$ 0.00000	0.99537 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	0.00217 $\pm$ 0.00000
130	0.02086 $\pm$ 0.00000	0.96930 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.22634 $\pm$ 0.00000
135	0.03543 $\pm$ 0.00000	0.67743 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.43434 $\pm$ 0.00000
140	0.04279 $\pm$ 0.00000	0.76335 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.55231 $\pm$ 0.00000
145	0.05053 $\pm$ 0.00000	0.64717 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.59909 $\pm$ 0.00000
150	0.05823 $\pm$ 0.00000	0.53660 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.59342 $\pm$ 0.00000
155	0.06552 $\pm$ 0.00000	0.43304 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.54507 $\pm$ 0.00000
160	0.07202 $\pm$ 0.00000	0.33792 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.47020 $\pm$ 0.00000
165	0.07742 $\pm$ 0.00000	0.24021 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.37114 $\pm$ 0.00000
170	0.06148 $\pm$ 0.00000	0.16300 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.25605 $\pm$ 0.00000
175	0.06399 $\pm$ 0.00000	0.08076 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.13059 $\pm$ 0.00000
180	0.06484 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	0.00000 $\pm$ 0.00000	-0.00000 $\pm$ 0.00000

11.00MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	K_x^x	K_x^y
5	17.32550 ± 0.01332	0.00260 ± 0.00007	0.99720 ± 0.00000	-0.07393 ± 0.00002
10	1.23433 ± 0.00200	0.00154 ± 0.00045	0.96429 ± 0.00004	-0.17654 ± 0.00022
15	0.48342 ± 0.00031	-0.03997 ± 0.00067	0.95744 ± 0.00025	-0.20554 ± 0.00094
20	0.37312 ± 0.00035	-0.09205 ± 0.00090	0.92471 ± 0.00059	-0.35923 ± 0.00105
25	0.33341 ± 0.00024	-0.13916 ± 0.00050	0.86520 ± 0.00090	-0.44175 ± 0.00212
30	0.30722 ± 0.00024	-0.16214 ± 0.00091	0.84035 ± 0.00139	-0.51052 ± 0.00242
35	0.26317 ± 0.00023	-0.22430 ± 0.00097	0.75595 ± 0.00161	-0.57617 ± 0.00255
40	0.25855 ± 0.00021	-0.26716 ± 0.00103	0.72246 ± 0.00224	-0.63771 ± 0.00262
45	0.23391 ± 0.00019	-0.31170 ± 0.00109	0.64935 ± 0.00203	-0.69308 ± 0.00254
50	0.20561 ± 0.00016	-0.35551 ± 0.00113	0.55511 ± 0.00299	-0.74229 ± 0.00235
55	0.18336 ± 0.00013	-0.40511 ± 0.00116	0.47221 ± 0.00326	-0.76132 ± 0.00207
60	0.15862 ± 0.00011	-0.46091 ± 0.00116	0.36707 ± 0.00350	-0.80797 ± 0.00171
65	0.13485 ± 0.00009	-0.51709 ± 0.00115	0.25015 ± 0.00361	-0.81655 ± 0.00131
70	0.11249 ± 0.00007	-0.57640 ± 0.00113	0.12095 ± 0.00361	-0.80510 ± 0.00090
75	0.09192 ± 0.00005	-0.63775 ± 0.00111	-0.02055 ± 0.00349	-0.76390 ± 0.00092
80	0.07347 ± 0.00004	-0.69516 ± 0.00111	-0.17368 ± 0.00321	-0.69455 ± 0.00131
85	0.05739 ± 0.00004	-0.75076 ± 0.00110	-0.33543 ± 0.00277	-0.56907 ± 0.00192
90	0.04368 ± 0.00004	-0.78093 ± 0.00130	-0.49776 ± 0.00219	-0.37733 ± 0.00259
95	0.03305 ± 0.00004	-0.75960 ± 0.00152	-0.64199 ± 0.00174	-0.10422 ± 0.00319
100	0.02497 ± 0.00004	-0.63681 ± 0.00177	-0.73042 ± 0.00214	0.24692 ± 0.00356
105	0.01957 ± 0.00004	-0.35306 ± 0.00191	-0.70550 ± 0.00332	0.61335 ± 0.00344
110	0.01677 ± 0.00003	0.03458 ± 0.00184	-0.53565 ± 0.00430	0.83911 ± 0.00261
115	0.01639 ± 0.00004	0.57018 ± 0.00150	-0.26405 ± 0.00439	0.77055 ± 0.00213
120	0.01616 ± 0.00004	0.85786 ± 0.00065	-0.09269 ± 0.00374	0.45054 ± 0.00192
125	0.02186 ± 0.00004	0.99708 ± 0.00015	-0.03519 ± 0.00290	0.06776 ± 0.00191
130	0.02709 ± 0.00005	0.95579 ± 0.00050	-0.06704 ± 0.00223	-0.24423 ± 0.00179
135	0.03346 ± 0.00005	0.66989 ± 0.00087	-0.19873 ± 0.00176	-0.45144 ± 0.00153
140	0.04065 ± 0.00006	0.75374 ± 0.00107	-0.33384 ± 0.00146	-0.56506 ± 0.00136
145	0.04620 ± 0.00007	0.63711 ± 0.00113	-0.47182 ± 0.00121	-0.60949 ± 0.00116
150	0.05572 ± 0.00007	0.52709 ± 0.00109	-0.60183 ± 0.00097	-0.59995 ± 0.00104
155	0.06262 ± 0.00009	0.42526 ± 0.00099	-0.71796 ± 0.00074	-0.55106 ± 0.00093
160	0.06917 ± 0.00010	0.33100 ± 0.00084	-0.81655 ± 0.00051	-0.47272 ± 0.00060
165	0.07445 ± 0.00011	0.24291 ± 0.00065	-0.89566 ± 0.00030	-0.37253 ± 0.00065
170	0.07641 ± 0.00011	0.15943 ± 0.00045	-0.95324 ± 0.00014	-0.25675 ± 0.00045
175	0.08086 ± 0.00012	0.07897 ± 0.00023	-0.98825 ± 0.00004	-0.13036 ± 0.00024
180	0.08169 ± 0.00012	0.00000 ± 0.00000	-1.00000 ± 0.00000	-0.00000 ± 0.00000

11.50 MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/ur	A_y	K_z^x	K_x^x
5	15.79106 ±0.01331	0.00253 ±0.00007	0.99726 ±0.00000	-0.07392 ±0.00003
10	1.12947 ±0.00273	0.00113 ±0.00051	0.99431 ±0.00005	-0.17646 ±0.00025
15	0.45935 ±0.00054	-0.04372 ±0.00090	0.95795 ±0.00027	-0.26403 ±0.00103
20	0.35504 ±0.00032	-0.09194 ±0.00091	0.92611 ±0.00063	-0.36507 ±0.00176
25	0.32050 ±0.00025	-0.13676 ±0.00059	0.88859 ±0.00103	-0.43705 ±0.00225
30	0.29542 ±0.00025	-0.17626 ±0.00032	0.84359 ±0.00146	-0.50654 ±0.00254
35	0.27367 ±0.00024	-0.21913 ±0.00099	0.79016 ±0.00190	-0.57236 ±0.00270
40	0.25035 ±0.00021	-0.26057 ±0.00105	0.72776 ±0.00233	-0.63426 ±0.00274
45	0.22620 ±0.00016	-0.30435 ±0.00111	0.65550 ±0.00273	-0.69067 ±0.00265
50	0.20170 ±0.00015	-0.35024 ±0.00116	0.57370 ±0.00309	-0.74034 ±0.00245
55	0.17729 ±0.00013	-0.39904 ±0.00116	0.48116 ±0.00337	-0.78055 ±0.00215
60	0.15320 ±0.00010	-0.45116 ±0.00119	0.37735 ±0.00357	-0.80673 ±0.00177
65	0.13021 ±0.00005	-0.50694 ±0.00117	0.26170 ±0.00367	-0.82127 ±0.00135
70	0.10550 ±0.00006	-0.56519 ±0.00115	0.13393 ±0.00365	-0.81332 ±0.00095
75	0.08052 ±0.00004	-0.62304 ±0.00113	-0.00639 ±0.00350	-0.77615 ±0.00091
80	0.07059 ±0.00004	-0.65957 ±0.00113	-0.15858 ±0.00320	-0.70635 ±0.00129
85	0.05497 ±0.00003	-0.74534 ±0.00116	-0.31996 ±0.00275	-0.58490 ±0.00169
90	0.04164 ±0.00004	-0.78050 ±0.00133	-0.46299 ±0.00216	-0.39692 ±0.00255
95	0.03132 ±0.00004	-0.78670 ±0.00150	-0.62951 ±0.00170	-0.12554 ±0.00316
100	0.02346 ±0.00004	-0.85306 ±0.00162	-0.72176 ±0.00224	0.22922 ±0.00352
105	0.01621 ±0.00003	-0.37465 ±0.00197	-0.70062 ±0.00344	0.60724 ±0.00343
110	0.01546 ±0.00003	0.07657 ±0.00190	-0.52667 ±0.00440	0.84643 ±0.00261
115	0.01510 ±0.00003	0.56709 ±0.00155	-0.26724 ±0.00443	0.77910 ±0.00213
120	0.01664 ±0.00004	0.89137 ±0.00050	-0.07279 ±0.00371	0.44739 ±0.00195
125	0.02041 ±0.00004	0.99835 ±0.00011	-0.01664 ±0.00264	0.05426 ±0.00195
130	0.02549 ±0.00004	0.99223 ±0.00053	-0.07664 ±0.00216	-0.26116 ±0.00184
135	0.03171 ±0.00005	0.86274 ±0.00092	-0.19365 ±0.00173	-0.46709 ±0.00162
140	0.03669 ±0.00005	0.74450 ±0.00111	-0.33209 ±0.00145	-0.57669 ±0.00139
145	0.04603 ±0.00006	0.62792 ±0.00117	-0.47169 ±0.00122	-0.61890 ±0.00120
150	0.05336 ±0.00007	0.51646 ±0.00113	-0.60270 ±0.00100	-0.60660 ±0.00107
155	0.06028 ±0.00008	0.41768 ±0.00102	-0.71900 ±0.00076	-0.55550 ±0.00097
160	0.06647 ±0.00010	0.32475 ±0.00087	-0.81756 ±0.00053	-0.47553 ±0.00085
165	0.07162 ±0.00011	0.23615 ±0.00068	-0.89625 ±0.00032	-0.37420 ±0.00069
170	0.07548 ±0.00011	0.15622 ±0.00047	-0.95352 ±0.00015	-0.25765 ±0.00049
175	0.07767 ±0.00012	0.07736 ±0.00024	-0.98833 ±0.00004	-0.13125 ±0.00026
180	0.07663 ±0.00012	0.00000 ±0.00000	-1.00000 ±0.00000	-0.00000 ±0.00000

12.00-MeV Laboratory energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	K_z^+	K_x^+
5	14.44229 $\pm$ 0.01330	0.00209 $\pm$ 0.00000	0.93720 $\pm$ 0.00000	-0.07391 $\pm$ 0.00003
10	1.03591 $\pm$ 0.00260	0.00001 $\pm$ 0.00055	0.90432 $\pm$ 0.00005	-0.17630 $\pm$ 0.00020
15	0.43142 $\pm$ 0.00077	-0.04120 $\pm$ 0.00094	0.95041 $\pm$ 0.00030	-0.20239 $\pm$ 0.00112
20	0.34016 $\pm$ 0.00030	-0.09107 $\pm$ 0.00093	0.92735 $\pm$ 0.00067	-0.36291 $\pm$ 0.00169
25	0.30050 $\pm$ 0.00027	-0.13431 $\pm$ 0.00090	0.89061 $\pm$ 0.00109	-0.43447 $\pm$ 0.00230
30	0.20617 $\pm$ 0.00020	-0.17444 $\pm$ 0.00094	0.84640 $\pm$ 0.00153	-0.50316 $\pm$ 0.00260
35	0.20460 $\pm$ 0.00025	-0.21414 $\pm$ 0.00101	0.79303 $\pm$ 0.00190	-0.50920 $\pm$ 0.00283
40	0.24221 $\pm$ 0.00022	-0.25401 $\pm$ 0.00100	0.73223 $\pm$ 0.00242	-0.63152 $\pm$ 0.00200
45	0.21097 $\pm$ 0.00010	-0.29734 $\pm$ 0.00114	0.65127 $\pm$ 0.00203	-0.60070 $\pm$ 0.00270
50	0.19524 $\pm$ 0.00015	-0.34234 $\pm$ 0.00110	0.50024 $\pm$ 0.00319	-0.73900 $\pm$ 0.00254
55	0.17149 $\pm$ 0.00012	-0.39037 $\pm$ 0.00120	0.40663 $\pm$ 0.00346	-0.70029 $\pm$ 0.00222
60	0.14010 $\pm$ 0.00010	-0.44100 $\pm$ 0.00120	0.30500 $\pm$ 0.00365	-0.60906 $\pm$ 0.00103
65	0.12579 $\pm$ 0.00007	-0.49714 $\pm$ 0.00119	0.27132 $\pm$ 0.00373	-0.62410 $\pm$ 0.00130
70	0.10471 $\pm$ 0.00005	-0.55621 $\pm$ 0.00116	0.14448 $\pm$ 0.00360	-0.61030 $\pm$ 0.00099
75	0.09531 $\pm$ 0.00004	-0.61036 $\pm$ 0.00114	0.00507 $\pm$ 0.00350	-0.70500 $\pm$ 0.00090
80	0.09790 $\pm$ 0.00003	-0.60124 $\pm$ 0.00114	-0.14642 $\pm$ 0.00310	-0.71727 $\pm$ 0.00120
85	0.05273 $\pm$ 0.00003	-0.73903 $\pm$ 0.00121	-0.30754 $\pm$ 0.00272	-0.59930 $\pm$ 0.00105
90	0.03999 $\pm$ 0.00004	-0.77044 $\pm$ 0.00136	-0.47114 $\pm$ 0.00217	-0.41400 $\pm$ 0.00251
95	0.02977 $\pm$ 0.00004	-0.77147 $\pm$ 0.00161	-0.61950 $\pm$ 0.00183	-0.14513 $\pm$ 0.00310
100	0.02212 $\pm$ 0.00004	-0.66620 $\pm$ 0.00183	-0.71475 $\pm$ 0.00233	0.21270 $\pm$ 0.00345
105	0.01702 $\pm$ 0.00003	-0.39356 $\pm$ 0.00205	-0.69530 $\pm$ 0.00352	0.60130 $\pm$ 0.00330
110	0.01436 $\pm$ 0.00003	0.06394 $\pm$ 0.00199	-0.51741 $\pm$ 0.00444	0.85335 $\pm$ 0.00277
115	0.01390 $\pm$ 0.00003	0.50403 $\pm$ 0.00162	-0.24949 $\pm$ 0.00443	0.70710 $\pm$ 0.00212
120	0.01566 $\pm$ 0.00003	0.09430 $\pm$ 0.00090	-0.05143 $\pm$ 0.00360	0.44451 $\pm$ 0.00190
125	0.01912 $\pm$ 0.00004	0.99913 $\pm$ 0.00000	-0.00112 $\pm$ 0.00279	0.04160 $\pm$ 0.00200
130	0.02405 $\pm$ 0.00004	0.95062 $\pm$ 0.00056	-0.00522 $\pm$ 0.00212	-0.27711 $\pm$ 0.00100
135	0.03009 $\pm$ 0.00005	0.85597 $\pm$ 0.00096	-0.10720 $\pm$ 0.00171	-0.40194 $\pm$ 0.00165
140	0.03680 $\pm$ 0.00005	0.73665 $\pm$ 0.00116	-0.32900 $\pm$ 0.00146	-0.59000 $\pm$ 0.00142
145	0.04402 $\pm$ 0.00006	0.61949 $\pm$ 0.00121	-0.47090 $\pm$ 0.00120	-0.62000 $\pm$ 0.00120
150	0.05115 $\pm$ 0.00007	0.51050 $\pm$ 0.00117	-0.60273 $\pm$ 0.00104	-0.61321 $\pm$ 0.00112
155	0.05709 $\pm$ 0.00000	0.41000 $\pm$ 0.00100	-0.71943 $\pm$ 0.00000	-0.56000 $\pm$ 0.00102
160	0.05391 $\pm$ 0.00010	0.31909 $\pm$ 0.00090	-0.61004 $\pm$ 0.00056	-0.47053 $\pm$ 0.00090
165	0.00093 $\pm$ 0.00011	0.23003 $\pm$ 0.00070	-0.00000 $\pm$ 0.00034	-0.37000 $\pm$ 0.00074
170	0.07209 $\pm$ 0.00012	0.15332 $\pm$ 0.00040	-0.95371 $\pm$ 0.00016	-0.25072 $\pm$ 0.00053
175	0.07502 $\pm$ 0.00012	0.07590 $\pm$ 0.00025	-0.90000 $\pm$ 0.00004	-0.13173 $\pm$ 0.00020
180	0.07501 $\pm$ 0.00013	0.00000 $\pm$ 0.00000	-1.00000 $\pm$ 0.00000	-0.00000 $\pm$ 0.00000

12.50MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	K_x^2 K_z	K_x^2 K_x
5	13.25020 $\pm$ 0.01352	0.00262 $\pm$ 0.00006	0.99726 $\pm$ 0.00000	-0.07393 $\pm$ 0.00003
10	0.95216 $\pm$ 0.00259	0.00056 $\pm$ 0.00059	0.99433 $\pm$ 0.00005	-0.17632 $\pm$ 0.00030
15	0.40620 $\pm$ 0.00070	-0.04163 $\pm$ 0.00096	0.95663 $\pm$ 0.00032	-0.26039 $\pm$ 0.00121
20	0.32541 $\pm$ 0.00031	-0.00007 $\pm$ 0.00094	0.92846 $\pm$ 0.00072	-0.36026 $\pm$ 0.00201
25	0.29714 $\pm$ 0.00032	-0.13164 $\pm$ 0.00091	0.89241 $\pm$ 0.00115	-0.43154 $\pm$ 0.00251
30	0.27647 $\pm$ 0.00032	-0.17071 $\pm$ 0.00095	0.84667 $\pm$ 0.00161	-0.50026 $\pm$ 0.00261
35	0.25996 $\pm$ 0.00026	-0.20931 $\pm$ 0.00102	0.79699 $\pm$ 0.00207	-0.56656 $\pm$ 0.00296
40	0.23445 $\pm$ 0.00023	-0.24901 $\pm$ 0.00110	0.73619 $\pm$ 0.00252	-0.62330 $\pm$ 0.00295
45	0.21195 $\pm$ 0.00016	-0.29364 $\pm$ 0.00115	0.65593 $\pm$ 0.00293	-0.66707 $\pm$ 0.00267
50	0.18698 $\pm$ 0.00014	-0.33452 $\pm$ 0.00119	0.56566 $\pm$ 0.00329	-0.73815 $\pm$ 0.00264
55	0.16593 $\pm$ 0.00012	-0.36210 $\pm$ 0.00121	0.49467 $\pm$ 0.00356	-0.76045 $\pm$ 0.00230
60	0.14331 $\pm$ 0.00009	-0.43295 $\pm$ 0.00121	0.39266 $\pm$ 0.00373	-0.61130 $\pm$ 0.00186
65	0.12157 $\pm$ 0.00007	-0.46173 $\pm$ 0.00119	0.27910 $\pm$ 0.00376	-0.32717 $\pm$ 0.00142
70	0.10110 $\pm$ 0.00005	-0.54654 $\pm$ 0.00117	0.15296 $\pm$ 0.00371	-0.32334 $\pm$ 0.00101
75	0.08226 $\pm$ 0.00004	-0.60860 $\pm$ 0.00115	0.01420 $\pm$ 0.00350	-0.79320 $\pm$ 0.00066
80	0.06539 $\pm$ 0.00003	-0.67245 $\pm$ 0.00116	-0.13653 $\pm$ 0.00316	-0.72736 $\pm$ 0.00123
85	0.05066 $\pm$ 0.00003	-0.73209 $\pm$ 0.00123	-0.29784 $\pm$ 0.00270	-0.61265 $\pm$ 0.00161
90	0.03629 $\pm$ 0.00004	-0.77507 $\pm$ 0.00140	-0.46196 $\pm$ 0.00217	-0.43112 $\pm$ 0.00245
95	0.02636 $\pm$ 0.00004	-0.77402 $\pm$ 0.00165	-0.61181 $\pm$ 0.00167	-0.16307 $\pm$ 0.00302
100	0.02094 $\pm$ 0.00004	-0.67666 $\pm$ 0.00195	-0.70936 $\pm$ 0.00240	0.19736 $\pm$ 0.00335
105	0.01597 $\pm$ 0.00004	-0.40965 $\pm$ 0.00214	-0.69089 $\pm$ 0.00355	0.59556 $\pm$ 0.00325
110	0.01335 $\pm$ 0.00003	-0.05665 $\pm$ 0.00206	-0.50611 $\pm$ 0.00443	0.65660 $\pm$ 0.00269
115	0.01300 $\pm$ 0.00003	0.56695 $\pm$ 0.00170	-0.23111 $\pm$ 0.00440	0.79494 $\pm$ 0.00212
120	0.01462 $\pm$ 0.00003	0.69659 $\pm$ 0.00094	-0.02912 $\pm$ 0.00365	0.44191 $\pm$ 0.00201
125	0.01797 $\pm$ 0.00004	0.99940 $\pm$ 0.00006	0.01766 $\pm$ 0.00276	0.02970 $\pm$ 0.00203
130	0.02275 $\pm$ 0.00004	0.95493 $\pm$ 0.00059	-0.05246 $\pm$ 0.00212	-0.22614 $\pm$ 0.00190
135	0.02661 $\pm$ 0.00004	0.64951 $\pm$ 0.00099	-0.17964 $\pm$ 0.00173	-0.49604 $\pm$ 0.00167
140	0.03520 $\pm$ 0.00005	0.72698 $\pm$ 0.00119	-0.32507 $\pm$ 0.00150	-0.60243 $\pm$ 0.00145
145	0.04214 $\pm$ 0.00006	0.61171 $\pm$ 0.00125	-0.46906 $\pm$ 0.00131	-0.63702 $\pm$ 0.00128
150	0.04907 $\pm$ 0.00007	0.50336 $\pm$ 0.00121	-0.60209 $\pm$ 0.00110	-0.61977 $\pm$ 0.00117
155	0.05563 $\pm$ 0.00009	0.40450 $\pm$ 0.00109	-0.71936 $\pm$ 0.00086	-0.56469 $\pm$ 0.00106
160	0.06149 $\pm$ 0.00010	0.31392 $\pm$ 0.00093	-0.61820 $\pm$ 0.00060	-0.46167 $\pm$ 0.00097
165	0.06536 $\pm$ 0.00011	0.22991 $\pm$ 0.00073	-0.63677 $\pm$ 0.00037	-0.37809 $\pm$ 0.00060
170	0.07004 $\pm$ 0.00012	0.15068 $\pm$ 0.00050	-0.95361 $\pm$ 0.00017	-0.22990 $\pm$ 0.00056
175	0.07232 $\pm$ 0.00013	0.07458 $\pm$ 0.00025	-0.98840 $\pm$ 0.00004	-0.13227 $\pm$ 0.00030
180	0.07309 $\pm$ 0.00013	0.00000 $\pm$ 0.00000	-1.00000 $\pm$ 0.00000	-0.00000 $\pm$ 0.00000

13.00-MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	K_z'	K_x'
5	12.14150 ± 0.01371	0.00265 ± 0.00009	0.99726 ± 0.00000	-0.07387 ± 0.00003
10	0.07713 ± 0.00252	0.00042 ± 0.00004	0.98434 ± 0.00006	-0.17026 ± 0.00033
15	0.38316 ± 0.00063	-0.04100 ± 0.00102	0.95922 ± 0.00035	-0.27954 ± 0.00132
20	0.31170 ± 0.00035	-0.00090 ± 0.00095	0.92950 ± 0.00076	-0.35793 ± 0.00214
25	0.28645 ± 0.00040	-0.12937 ± 0.00092	0.89401 ± 0.00121	-0.42696 ± 0.00264
30	0.26729 ± 0.00036	-0.16707 ± 0.00095	0.85104 ± 0.00163	-0.49701 ± 0.00295
35	0.24779 ± 0.00032	-0.20466 ± 0.00104	0.79976 ± 0.00216	-0.56436 ± 0.00310
40	0.22705 ± 0.00025	-0.24345 ± 0.00111	0.73956 ± 0.00262	-0.62752 ± 0.00311
45	0.20530 ± 0.00019	-0.28424 ± 0.00116	0.66992 ± 0.00304	-0.68587 ± 0.00298
50	0.18290 ± 0.00015	-0.32705 ± 0.00119	0.59029 ± 0.00339	-0.73770 ± 0.00274
55	0.16060 ± 0.00011	-0.37423 ± 0.00121	0.50006 ± 0.00365	-0.78096 ± 0.00230
60	0.13864 ± 0.00009	-0.42445 ± 0.00120	0.39864 ± 0.00361	-0.81293 ± 0.00194
65	0.11754 ± 0.00007	-0.47671 ± 0.00119	0.28539 ± 0.00384	-0.83030 ± 0.00146
70	0.09760 ± 0.00005	-0.53710 ± 0.00117	0.15973 ± 0.00374	-0.82821 ± 0.00102
75	0.07941 ± 0.00003	-0.59942 ± 0.00116	0.02133 ± 0.00351	-0.80015 ± 0.00067
80	0.06302 ± 0.00003	-0.66359 ± 0.00113	-0.12947 ± 0.00315	-0.73681 ± 0.00119
85	0.04573 ± 0.00003	-0.72400 ± 0.00120	-0.29053 ± 0.00263	-0.62434 ± 0.00177
90	0.03672 ± 0.00004	-0.77063 ± 0.00143	-0.45517 ± 0.00217	-0.44603 ± 0.00239
95	0.02709 ± 0.00004	-0.77474 ± 0.00170	-0.60627 ± 0.00191	-0.17947 ± 0.00293
100	0.01957 ± 0.00004	-0.68450 ± 0.00201	-0.70557 ± 0.00243	0.18316 ± 0.00322
105	0.01505 ± 0.00004	-0.42363 ± 0.00222	-0.68725 ± 0.00353	0.59007 ± 0.00309
110	0.01252 ± 0.00003	0.03899 ± 0.00218	-0.49896 ± 0.00437	0.88576 ± 0.00255
115	0.01214 ± 0.00003	0.55704 ± 0.00179	-0.21237 ± 0.00434	0.80232 ± 0.00211
120	0.01370 ± 0.00003	0.89522 ± 0.00093	-0.00618 ± 0.00365	0.43951 ± 0.00203
125	0.01694 ± 0.00004	0.99914 ± 0.00012	0.03722 ± 0.00284	0.01849 ± 0.00205
130	0.02157 ± 0.00004	0.95112 ± 0.00062	-0.03687 ± 0.00219	-0.30636 ± 0.00192
135	0.02725 ± 0.00004	0.84329 ± 0.00103	-0.17119 ± 0.00180	-0.50946 ± 0.00170
140	0.03365 ± 0.00005	0.72176 ± 0.00122	-0.32025 ± 0.00150	-0.61360 ± 0.00148
145	0.04039 ± 0.00006	0.60445 ± 0.00128	-0.46653 ± 0.00139	-0.64573 ± 0.00133
150	0.04712 ± 0.00007	0.49669 ± 0.00124	-0.60091 ± 0.00118	-0.62626 ± 0.00124
155	0.05350 ± 0.00009	0.39571 ± 0.00112	-0.71893 ± 0.00093	-0.55936 ± 0.00117
160	0.05921 ± 0.00010	0.30916 ± 0.00096	-0.81809 ± 0.00066	-0.48490 ± 0.00106
165	0.06390 ± 0.00012	0.22630 ± 0.00075	-0.89578 ± 0.00040	-0.38022 ± 0.00088
170	0.06753 ± 0.00013	0.14820 ± 0.00052	-0.95384 ± 0.00019	-0.26117 ± 0.00063
175	0.06974 ± 0.00014	0.07336 ± 0.00026	-0.98842 ± 0.00005	-0.13286 ± 0.00033
180	0.07049 ± 0.00014	0.00000 ± 0.00000	-1.00000 ± 0.00000	-0.00000 ± 0.00000

13.50 MeV Laboratory energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	$K_z^{x'}$	$K_x^{x'}$
5	11.24677 $\pm$ 0.01397	0.00288 $\pm$ 0.00010	0.99727 $\pm$ 0.00000	-0.07384 $\pm$ 0.00003
10	0.80960 $\pm$ 0.00245	0.00032 $\pm$ 0.00068	0.98435 $\pm$ 0.00006	-0.17622 $\pm$ 0.00036
15	0.36207 $\pm$ 0.00059	-0.04198 $\pm$ 0.00106	0.95958 $\pm$ 0.00037	-0.27829 $\pm$ 0.00142
20	0.29897 $\pm$ 0.00044	-0.08782 $\pm$ 0.00096	0.93042 $\pm$ 0.00081	-0.35581 $\pm$ 0.00227
25	0.27649 $\pm$ 0.00049	-0.12692 $\pm$ 0.00092	0.89545 $\pm$ 0.00127	-0.42669 $\pm$ 0.00270
30	0.25864 $\pm$ 0.00045	-0.16353 $\pm$ 0.00095	0.85298 $\pm$ 0.00176	-0.49567 $\pm$ 0.00309
35	0.24002 $\pm$ 0.00037	-0.20017 $\pm$ 0.00105	0.80219 $\pm$ 0.00225	-0.56252 $\pm$ 0.00324
40	0.22001 $\pm$ 0.00026	-0.23810 $\pm$ 0.00112	0.74250 $\pm$ 0.00272	-0.62610 $\pm$ 0.00324
45	0.19892 $\pm$ 0.00021	-0.27812 $\pm$ 0.00117	0.67335 $\pm$ 0.00315	-0.68502 $\pm$ 0.00310
50	0.17725 $\pm$ 0.00015	-0.32081 $\pm$ 0.00119	0.59418 $\pm$ 0.00350	-0.73759 $\pm$ 0.00284
55	0.15551 $\pm$ 0.00011	-0.36671 $\pm$ 0.00120	0.50439 $\pm$ 0.00375	-0.78174 $\pm$ 0.00246
60	0.13418 $\pm$ 0.00009	-0.41632 $\pm$ 0.00119	0.40334 $\pm$ 0.00389	-0.81486 $\pm$ 0.00200
65	0.11369 $\pm$ 0.00006	-0.47006 $\pm$ 0.00117	0.29040 $\pm$ 0.00390	-0.83350 $\pm$ 0.00149
70	0.09442 $\pm$ 0.00004	-0.52814 $\pm$ 0.00115	0.16498 $\pm$ 0.00378	-0.83298 $\pm$ 0.00103
75	0.07669 $\pm$ 0.00003	-0.59024 $\pm$ 0.00115	0.02873 $\pm$ 0.00352	-0.80679 $\pm$ 0.00085
80	0.06079 $\pm$ 0.00003	-0.65472 $\pm$ 0.00118	-0.12407 $\pm$ 0.00315	-0.74562 $\pm$ 0.00116
85	0.04693 $\pm$ 0.00004	-0.71692 $\pm$ 0.00128	-0.28534 $\pm$ 0.00267	-0.63809 $\pm$ 0.00172
90	0.03528 $\pm$ 0.00004	-0.76531 $\pm$ 0.00146	-0.45056 $\pm$ 0.00218	-0.45965 $\pm$ 0.00233
95	0.02592 $\pm$ 0.00004	-0.77387 $\pm$ 0.00173	-0.60275 $\pm$ 0.00194	-0.19447 $\pm$ 0.00284
100	0.01892 $\pm$ 0.00004	-0.69020 $\pm$ 0.00205	-0.70335 $\pm$ 0.00243	0.17006 $\pm$ 0.00308
105	0.01422 $\pm$ 0.00004	-0.43519 $\pm$ 0.00228	-0.68454 $\pm$ 0.00346	0.58481 $\pm$ 0.00290
110	0.01176 $\pm$ 0.00003	0.02806 $\pm$ 0.00228	-0.49014 $\pm$ 0.00424	0.87119 $\pm$ 0.00244
115	0.01137 $\pm$ 0.00003	0.55472 $\pm$ 0.00189	-0.19350 $\pm$ 0.00428	0.60922 $\pm$ 0.00210
120	0.01287 $\pm$ 0.00003	0.89920 $\pm$ 0.00103	0.01716 $\pm$ 0.00373	0.43721 $\pm$ 0.00205
125	0.01601 $\pm$ 0.00004	0.99832 $\pm$ 0.00017	0.05734 $\pm$ 0.00298	0.00786 $\pm$ 0.00205
130	0.02049 $\pm$ 0.00004	0.94715 $\pm$ 0.00065	-0.02460 $\pm$ 0.00234	-0.31986 $\pm$ 0.00192
135	0.02600 $\pm$ 0.00005	0.83725 $\pm$ 0.00105	-0.16206 $\pm$ 0.00194	-0.52226 $\pm$ 0.00171
140	0.03220 $\pm$ 0.00005	0.71491 $\pm$ 0.00125	-0.31478 $\pm$ 0.00171	-0.62435 $\pm$ 0.00152
145	0.03875 $\pm$ 0.00006	0.59770 $\pm$ 0.00131	-0.46345 $\pm$ 0.00151	-0.65420 $\pm$ 0.00140
150	0.04529 $\pm$ 0.00008	0.49048 $\pm$ 0.00120	-0.59930 $\pm$ 0.00129	-0.63267 $\pm$ 0.00134
155	0.05149 $\pm$ 0.00010	0.39334 $\pm$ 0.00115	-0.71617 $\pm$ 0.00102	-0.57404 $\pm$ 0.00128
160	0.05704 $\pm$ 0.00011	0.30480 $\pm$ 0.00098	-0.81778 $\pm$ 0.00072	-0.48819 $\pm$ 0.00117
165	0.06166 $\pm$ 0.00013	0.22295 $\pm$ 0.00077	-0.89668 $\pm$ 0.00044	-0.38241 $\pm$ 0.00098
170	0.06514 $\pm$ 0.00014	0.14603 $\pm$ 0.00053	-0.95382 $\pm$ 0.00021	-0.28250 $\pm$ 0.00071
175	0.06729 $\pm$ 0.00015	0.07224 $\pm$ 0.00027	-0.98841 $\pm$ 0.00005	-0.13349 $\pm$ 0.00037
180	0.06802 $\pm$ 0.00015	0.00000 $\pm$ 0.00000	-1.00000 $\pm$ 0.00000	-0.00000 $\pm$ 0.00000

14.00MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	K_z^x	K_x^x
5	10.40020 ± 0.01429	0.00292 ± 0.00010	0.99727 ± 0.00000	-0.07361 ± 0.00004
10	0.74861 ± 0.00236	0.00027 ± 0.00073	0.98436 ± 0.00007	-0.17616 ± 0.00039
15	0.34276 ± 0.00057	-0.04201 ± 0.00109	0.95992 ± 0.00040	-0.27712 ± 0.00154
20	0.28717 ± 0.00055	-0.03661 ± 0.00097	0.93127 ± 0.00066	-0.35388 ± 0.00241
25	0.26714 ± 0.00060	-0.12448 ± 0.00093	0.89675 ± 0.00134	-0.42467 ± 0.00293
30	0.25050 ± 0.00054	-0.16006 ± 0.00099	0.85471 ± 0.00184	-0.49382 ± 0.00323
35	0.23268 ± 0.00043	-0.19582 ± 0.00107	0.80434 ± 0.00235	-0.56097 ± 0.00338
40	0.21333 ± 0.00032	-0.23296 ± 0.00113	0.74506 ± 0.00283	-0.62499 ± 0.00337
45	0.19285 ± 0.00023	-0.27225 ± 0.00117	0.67631 ± 0.00326	-0.68446 ± 0.00323
50	0.17176 ± 0.00016	-0.31426 ± 0.00116	0.59748 ± 0.00362	-0.73774 ± 0.00294
55	0.15065 ± 0.00012	-0.35952 ± 0.00118	0.50798 ± 0.00367	-0.78275 ± 0.00255
60	0.12992 ± 0.00009	-0.40854 ± 0.00116	0.40714 ± 0.00399	-0.81690 ± 0.00206
65	0.11001 ± 0.00006	-0.46174 ± 0.00114	0.29433 ± 0.00395	-0.83676 ± 0.00153
70	0.09130 ± 0.00004	-0.51939 ± 0.00113	0.16895 ± 0.00383	-0.83676 ± 0.00104
75	0.07410 ± 0.00003	-0.58126 ± 0.00114	0.03062 ± 0.00355	-0.81314 ± 0.00062
80	0.05868 ± 0.00004	-0.64588 ± 0.00119	-0.12038 ± 0.00316	-0.75389 ± 0.00113
85	0.04524 ± 0.00004	-0.70687 ± 0.00130	-0.28203 ± 0.00269	-0.64650 ± 0.00163
90	0.03393 ± 0.00005	-0.75924 ± 0.00148	-0.44790 ± 0.00221	-0.47216 ± 0.00228
95	0.02486 ± 0.00005	-0.77169 ± 0.00175	-0.60108 ± 0.00197	-0.29818 ± 0.00276
100	0.01805 ± 0.00004	-0.69378 ± 0.00206	-0.70204 ± 0.00239	0.15801 ± 0.00294
105	0.01349 ± 0.00004	-0.44448 ± 0.00231	-0.68282 ± 0.00333	0.57952 ± 0.00268
110	0.01106 ± 0.00004	0.01076 ± 0.00235	-0.46160 ± 0.00407	0.67603 ± 0.00226
115	0.01070 ± 0.00003	0.55163 ± 0.00200	-0.17474 ± 0.00423	0.81558 ± 0.00210
120	0.01214 ± 0.00003	0.99955 ± 0.00110	0.04065 ± 0.00369	0.43493 ± 0.00207
125	0.01517 ± 0.00004	0.99597 ± 0.00025	0.07760 ± 0.00322	-0.00226 ± 0.00204
130	0.01951 ± 0.00004	0.94295 ± 0.00066	-0.03985 ± 0.00257	-0.33270 ± 0.00192
135	0.02485 ± 0.00005	0.83131 ± 0.00107	-0.15240 ± 0.00214	-0.53451 ± 0.00173
140	0.03086 ± 0.00006	0.70835 ± 0.00127	-0.30881 ± 0.00189	-0.63472 ± 0.00157
145	0.03721 ± 0.00007	0.59128 ± 0.00133	-0.45994 ± 0.00166	-0.66245 ± 0.00149
150	0.04357 ± 0.00009	0.48464 ± 0.00129	-0.59735 ± 0.00143	-0.63898 ± 0.00146
155	0.04959 ± 0.00010	0.38832 ± 0.00118	-0.71716 ± 0.00113	-0.57870 ± 0.00141
160	0.05499 ± 0.00012	0.30070 ± 0.00101	-0.81731 ± 0.00081	-0.49151 ± 0.00130
165	0.05948 ± 0.00014	0.21987 ± 0.00079	-0.89649 ± 0.00049	-0.38465 ± 0.00109
170	0.06286 ± 0.00015	0.14395 ± 0.00055	-0.95375 ± 0.00023	-0.28388 ± 0.00079
175	0.06498 ± 0.00016	0.07120 ± 0.00028	-0.98840 ± 0.00006	-0.13414 ± 0.00042
180	0.06567 ± 0.00017	0. ± 0.00000	-1.00000 ± 0.00000	0. ± 0.00000

14.50MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	K_x^+	K_x^-
5	9.63862 $\pm$ 0.31466	0.00297 $\pm$ 0.00011	0.93727 $\pm$ 0.00000	-0.07377 $\pm$ 0.00004
10	0.03336 $\pm$ 0.00233	0.00026 $\pm$ 0.00073	0.98436 $\pm$ 0.00006	-0.17616 $\pm$ 0.00043
15	0.32506 $\pm$ 0.00061	-0.04195 $\pm$ 0.00113	0.96023 $\pm$ 0.00044	-0.27602 $\pm$ 0.00155
20	0.27625 $\pm$ 0.00070	-0.03535 $\pm$ 0.00097	0.93206 $\pm$ 0.00091	-0.35211 $\pm$ 0.00255
25	0.25342 $\pm$ 0.00073	-0.12205 $\pm$ 0.00094	0.89794 $\pm$ 0.00141	-0.44225 $\pm$ 0.00307
30	0.24265 $\pm$ 0.00064	-0.15657 $\pm$ 0.00101	0.85627 $\pm$ 0.00193	-0.49219 $\pm$ 0.00336
35	0.22575 $\pm$ 0.00051	-0.19159 $\pm$ 0.00103	0.80627 $\pm$ 0.00245	-0.55966 $\pm$ 0.00352
40	0.20639 $\pm$ 0.00037	-0.22600 $\pm$ 0.00114	0.74733 $\pm$ 0.00295	-0.62411 $\pm$ 0.00351
45	0.18707 $\pm$ 0.00026	-0.26860 $\pm$ 0.00116	0.67667 $\pm$ 0.00339	-0.68415 $\pm$ 0.00335
50	0.16656 $\pm$ 0.00016	-0.30795 $\pm$ 0.00116	0.60029 $\pm$ 0.00374	-0.73511 $\pm$ 0.00305
55	0.14533 $\pm$ 0.00012	-0.35263 $\pm$ 0.00115	0.51035 $\pm$ 0.00399	-0.78395 $\pm$ 0.00264
60	0.12563 $\pm$ 0.00009	-0.40107 $\pm$ 0.00112	0.41018 $\pm$ 0.00410	-0.81903 $\pm$ 0.00213
65	0.10650 $\pm$ 0.00006	-0.45373 $\pm$ 0.00110	0.29734 $\pm$ 0.00406	-0.84007 $\pm$ 0.00157
70	0.08633 $\pm$ 0.00004	-0.51092 $\pm$ 0.00110	0.17161 $\pm$ 0.00369	-0.84226 $\pm$ 0.00105
75	0.07164 $\pm$ 0.00004	-0.57247 $\pm$ 0.00112	0.03321 $\pm$ 0.00360	-0.61925 $\pm$ 0.00060
80	0.05803 $\pm$ 0.00004	-0.63706 $\pm$ 0.00120	-0.11819 $\pm$ 0.00320	-0.76170 $\pm$ 0.00110
85	0.04364 $\pm$ 0.00005	-0.70050 $\pm$ 0.00132	-0.25039 $\pm$ 0.00273	-0.85516 $\pm$ 0.00165
90	0.03267 $\pm$ 0.00005	-0.75250 $\pm$ 0.00151	-0.44701 $\pm$ 0.00227	-0.48366 $\pm$ 0.00224
95	0.10650 $\pm$ 0.00006	-0.45373 $\pm$ 0.00110	0.29734 $\pm$ 0.00406	-0.84007 $\pm$ 0.00157
100	0.08633 $\pm$ 0.00004	-0.51092 $\pm$ 0.00110	0.17161 $\pm$ 0.00369	-0.84226 $\pm$ 0.00105
105	0.07164 $\pm$ 0.00004	-0.57247 $\pm$ 0.00112	0.03321 $\pm$ 0.00360	-0.61925 $\pm$ 0.00060
110	0.05803 $\pm$ 0.00004	-0.63706 $\pm$ 0.00120	-0.11819 $\pm$ 0.00320	-0.76170 $\pm$ 0.00110
115	0.04364 $\pm$ 0.00005	-0.70050 $\pm$ 0.00132	-0.25039 $\pm$ 0.00273	-0.85516 $\pm$ 0.00165
120	0.03267 $\pm$ 0.00005	-0.75250 $\pm$ 0.00151	-0.44701 $\pm$ 0.00227	-0.48366 $\pm$ 0.00224
125	0.02367 $\pm$ 0.00005	-0.76606 $\pm$ 0.00176	-0.60113 $\pm$ 0.00200	-0.22074 $\pm$ 0.00270
130	0.01720 $\pm$ 0.00005	-0.69544 $\pm$ 0.00205	-0.70340 $\pm$ 0.00232	0.14691 $\pm$ 0.00260
135	0.01262 $\pm$ 0.00004	-0.45165 $\pm$ 0.00231	-0.63213 $\pm$ 0.00315	0.57507 $\pm$ 0.00245
140	0.01045 $\pm$ 0.00004	0.01035 $\pm$ 0.00241	-0.47407 $\pm$ 0.00368	0.88042 $\pm$ 0.00211
145	0.01009 $\pm$ 0.00003	0.54864 $\pm$ 0.00211	-0.15626 $\pm$ 0.00426	0.82133 $\pm$ 0.00210
150	0.01146 $\pm$ 0.00003	0.69931 $\pm$ 0.00120	0.06410 $\pm$ 0.00417	0.43259 $\pm$ 0.00209
155	0.01441 $\pm$ 0.00004	0.93507 $\pm$ 0.00035	0.09842 $\pm$ 0.00356	-0.01197 $\pm$ 0.00205
160	0.01660 $\pm$ 0.00004	0.93659 $\pm$ 0.00071	0.00520 $\pm$ 0.00289	-0.34499 $\pm$ 0.00192
165	0.02378 $\pm$ 0.00005	0.82542 $\pm$ 0.00109	-0.14236 $\pm$ 0.00242	-0.54627 $\pm$ 0.00176
170	0.02961 $\pm$ 0.00006	0.70201 $\pm$ 0.00126	-0.30246 $\pm$ 0.00214	-0.64474 $\pm$ 0.00164
175	0.03577 $\pm$ 0.00006	0.58516 $\pm$ 0.00135	-0.45610 $\pm$ 0.00190	-0.67050 $\pm$ 0.00160
180	0.04194 $\pm$ 0.00010	0.47911 $\pm$ 0.00131	-0.59514 $\pm$ 0.00162	-0.64518 $\pm$ 0.00161
185	0.04779 $\pm$ 0.00012	0.36357 $\pm$ 0.00120	-0.71596 $\pm$ 0.00126	-0.58332 $\pm$ 0.00153
190	0.05304 $\pm$ 0.00014	0.29685 $\pm$ 0.00103	-0.81672 $\pm$ 0.00091	-0.49463 $\pm$ 0.00147
195	0.05741 $\pm$ 0.00016	0.21696 $\pm$ 0.00082	-0.83623 $\pm$ 0.00055	-0.38691 $\pm$ 0.00124
200	0.06070 $\pm$ 0.00017	0.14200 $\pm$ 0.00056	-0.95366 $\pm$ 0.00020	-0.26527 $\pm$ 0.00090
205	0.06274 $\pm$ 0.00018	0.07022 $\pm$ 0.00029	-0.98636 $\pm$ 0.00007	-0.13480 $\pm$ 0.00047
210	0.06344 $\pm$ 0.00018	0.00000 $\pm$ 0.00000	-1.00000 $\pm$ 0.00000	-0.00000 $\pm$ 0.00000

15.00MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	K_z^x	K_z^x
5	0.95097 $\pm$ 0.01509	0.00302 $\pm$ 0.00012	0.99727 $\pm$ 0.00000	-0.07372 $\pm$ 0.00004
10	0.04325 $\pm$ 0.00220	0.00029 $\pm$ 0.00004	0.98437 $\pm$ 0.00000	-0.17013 $\pm$ 0.00047
15	0.30555 $\pm$ 0.00071	-0.04164 $\pm$ 0.00110	0.95054 $\pm$ 0.00047	-0.27495 $\pm$ 0.00170
20	0.26515 $\pm$ 0.00000	-0.05404 $\pm$ 0.00090	0.93200 $\pm$ 0.00090	-0.35047 $\pm$ 0.00270
25	0.25030 $\pm$ 0.00007	-0.11953 $\pm$ 0.00090	0.89904 $\pm$ 0.00140	-0.42121 $\pm$ 0.00322
30	0.23569 $\pm$ 0.00075	-0.15334 $\pm$ 0.00104	0.85770 $\pm$ 0.00202	-0.49075 $\pm$ 0.00353
35	0.21922 $\pm$ 0.00059	-0.16745 $\pm$ 0.00111	0.80000 $\pm$ 0.00250	-0.55056 $\pm$ 0.00305
40	0.20099 $\pm$ 0.00043	-0.22319 $\pm$ 0.00116	0.74934 $\pm$ 0.00307	-0.62344 $\pm$ 0.00305
45	0.16157 $\pm$ 0.00029	-0.26116 $\pm$ 0.00117	0.68111 $\pm$ 0.00352	-0.68003 $\pm$ 0.00349
50	0.16150 $\pm$ 0.00020	-0.30193 $\pm$ 0.00115	0.60260 $\pm$ 0.00300	-0.73065 $\pm$ 0.00317
55	0.14154 $\pm$ 0.00013	-0.34601 $\pm$ 0.00112	0.51339 $\pm$ 0.00412	-0.70531 $\pm$ 0.00273
60	0.12193 $\pm$ 0.00009	-0.39300 $\pm$ 0.00105	0.41256 $\pm$ 0.00422	-0.52137 $\pm$ 0.00219
65	0.10313 $\pm$ 0.00006	-0.44600 $\pm$ 0.00105	0.29955 $\pm$ 0.00417	-0.04342 $\pm$ 0.00161
70	0.08549 $\pm$ 0.00004	-0.50259 $\pm$ 0.00105	0.17371 $\pm$ 0.00390	-0.04604 $\pm$ 0.00105
75	0.06929 $\pm$ 0.00004	-0.55363 $\pm$ 0.00111	0.03467 $\pm$ 0.00367	-0.02510 $\pm$ 0.00070
80	0.05470 $\pm$ 0.00005	-0.62025 $\pm$ 0.00121	-0.11730 $\pm$ 0.00327	-0.76912 $\pm$ 0.00100
85	0.04213 $\pm$ 0.00006	-0.69207 $\pm$ 0.00130	-0.26022 $\pm$ 0.00201	-0.65522 $\pm$ 0.00165
90	0.03150 $\pm$ 0.00006	-0.74515 $\pm$ 0.00155	-0.44771 $\pm$ 0.00235	-0.49420 $\pm$ 0.00224
95	0.02295 $\pm$ 0.00006	-0.76336 $\pm$ 0.00177	-0.60277 $\pm$ 0.00205	-0.23226 $\pm$ 0.00267
100	0.01654 $\pm$ 0.00005	-0.69533 $\pm$ 0.00203	-0.70557 $\pm$ 0.00222	0.13670 $\pm$ 0.00269
105	0.01222 $\pm$ 0.00004	-0.45670 $\pm$ 0.00220	-0.60251 $\pm$ 0.00293	0.57055 $\pm$ 0.00222
110	0.00934 $\pm$ 0.00004	0.00431 $\pm$ 0.00245	-0.46707 $\pm$ 0.00370	0.00421 $\pm$ 0.00197
115	0.00955 $\pm$ 0.00004	0.54551 $\pm$ 0.00225	-0.13024 $\pm$ 0.00440	0.02043 $\pm$ 0.00213
120	0.01000 $\pm$ 0.00004	0.69354 $\pm$ 0.00132	0.00732 $\pm$ 0.00459	0.43012 $\pm$ 0.00215
125	0.01371 $\pm$ 0.00004	0.99206 $\pm$ 0.00048	0.11903 $\pm$ 0.00404	-0.02136 $\pm$ 0.00209
130	0.01777 $\pm$ 0.00005	0.93390 $\pm$ 0.00076	0.02043 $\pm$ 0.00339	-0.35000 $\pm$ 0.00195
135	0.02270 $\pm$ 0.00006	0.61954 $\pm$ 0.00112	-0.13207 $\pm$ 0.00270	-0.55760 $\pm$ 0.00101
140	0.02044 $\pm$ 0.00007	0.69502 $\pm$ 0.00131	-0.29504 $\pm$ 0.00246	-0.65446 $\pm$ 0.00173
145	0.03442 $\pm$ 0.00009	0.57925 $\pm$ 0.00137	-0.45202 $\pm$ 0.00210	-0.67034 $\pm$ 0.00175
150	0.04040 $\pm$ 0.00011	0.47361 $\pm$ 0.00134	-0.59273 $\pm$ 0.00185	-0.05120 $\pm$ 0.00179
155	0.04609 $\pm$ 0.00013	0.37905 $\pm$ 0.00123	-0.71463 $\pm$ 0.00140	-0.50790 $\pm$ 0.00170
160	0.05119 $\pm$ 0.00015	0.29310 $\pm$ 0.00106	-0.81603 $\pm$ 0.00103	-0.49514 $\pm$ 0.00100
165	0.05544 $\pm$ 0.00017	0.21419 $\pm$ 0.00084	-0.89591 $\pm$ 0.00063	-0.30910 $\pm$ 0.00140
170	0.05664 $\pm$ 0.00019	0.14014 $\pm$ 0.00050	-0.95354 $\pm$ 0.00039	-0.20660 $\pm$ 0.00102
175	0.06063 $\pm$ 0.00020	0.06929 $\pm$ 0.00030	-0.98835 $\pm$ 0.00008	-0.13547 $\pm$ 0.00054
180	0.06130 $\pm$ 0.00021	0.00000 $\pm$ 0.00000	-1.00000 $\pm$ 0.00000	-0.00000 $\pm$ 0.00000

15.50 MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	K_x^+	K_x^-
5	0.32797 $\pm$ 0.01557	0.00300 $\pm$ 0.00012	0.99720 $\pm$ 0.00000	-0.07307 $\pm$ 0.00004
10	0.53764 $\pm$ 0.00225	0.00035 $\pm$ 0.00090	0.98437 $\pm$ 0.00009	-0.17612 $\pm$ 0.00051
15	0.29401 $\pm$ 0.00005	-0.04160 $\pm$ 0.00119	0.96003 $\pm$ 0.00050	-0.27390 $\pm$ 0.00192
20	0.25605 $\pm$ 0.00105	-0.00269 $\pm$ 0.00099	0.93349 $\pm$ 0.00102	-0.34094 $\pm$ 0.00205
25	0.24277 $\pm$ 0.00103	-0.11722 $\pm$ 0.00099	0.90006 $\pm$ 0.00155	-0.41971 $\pm$ 0.00330
30	0.22900 $\pm$ 0.00007	-0.15006 $\pm$ 0.00100	0.85901 $\pm$ 0.00211	-0.40940 $\pm$ 0.00369
35	0.21300 $\pm$ 0.00050	-0.10346 $\pm$ 0.00115	0.80950 $\pm$ 0.00267	-0.55761 $\pm$ 0.00303
40	0.19531 $\pm$ 0.00049	-0.21051 $\pm$ 0.00119	0.75114 $\pm$ 0.00320	-0.62293 $\pm$ 0.00301
45	0.17635 $\pm$ 0.00033	-0.25580 $\pm$ 0.00110	0.60307 $\pm$ 0.00367	-0.60406 $\pm$ 0.00302
50	0.15603 $\pm$ 0.00022	-0.29600 $\pm$ 0.00115	0.60472 $\pm$ 0.00403	-0.73936 $\pm$ 0.00329
55	0.13729 $\pm$ 0.00014	-0.33900 $\pm$ 0.00110	0.51540 $\pm$ 0.00427	-0.70670 $\pm$ 0.00202
60	0.11019 $\pm$ 0.00010	-0.30693 $\pm$ 0.00105	0.41443 $\pm$ 0.00436	-0.02374 $\pm$ 0.00226
65	0.09991 $\pm$ 0.00007	-0.43050 $\pm$ 0.00102	0.30110 $\pm$ 0.00430	-0.04600 $\pm$ 0.00165
70	0.08277 $\pm$ 0.00005	-0.49465 $\pm$ 0.00104	0.17400 $\pm$ 0.00410	-0.05133 $\pm$ 0.00106
75	0.06705 $\pm$ 0.00005	-0.55533 $\pm$ 0.00111	0.03516 $\pm$ 0.00370	-0.03009 $\pm$ 0.00077
80	0.05297 $\pm$ 0.00006	-0.61944 $\pm$ 0.00125	-0.11756 $\pm$ 0.00330	-0.77019 $\pm$ 0.00100
85	0.04071 $\pm$ 0.00007	-0.60332 $\pm$ 0.00142	-0.20136 $\pm$ 0.00293	-0.67373 $\pm$ 0.00160
90	0.03039 $\pm$ 0.00007	-0.73722 $\pm$ 0.00161	-0.44953 $\pm$ 0.00245	-0.50415 $\pm$ 0.00220
95	0.02210 $\pm$ 0.00006	-0.75758 $\pm$ 0.00101	-0.60507 $\pm$ 0.00212	-0.24289 $\pm$ 0.00269
100	0.01507 $\pm$ 0.00006	-0.69356 $\pm$ 0.00201	-0.70907 $\pm$ 0.00213	0.12727 $\pm$ 0.00263
105	0.01160 $\pm$ 0.00005	-0.45993 $\pm$ 0.00223	-0.60396 $\pm$ 0.00272	0.56524 $\pm$ 0.00201
110	0.00945 $\pm$ 0.00004	-0.00082 $\pm$ 0.00249	-0.46090 $\pm$ 0.00360	0.00745 $\pm$ 0.00187
115	0.00907 $\pm$ 0.00004	0.54324 $\pm$ 0.00242	-0.12004 $\pm$ 0.00471	0.03003 $\pm$ 0.00210
120	0.01035 $\pm$ 0.00004	0.09732 $\pm$ 0.00149	0.11015 $\pm$ 0.00515	0.42743 $\pm$ 0.00227
125	0.01300 $\pm$ 0.00004	0.90375 $\pm$ 0.00065	0.13949 $\pm$ 0.00459	-0.03051 $\pm$ 0.00221
130	0.01701 $\pm$ 0.00005	0.92905 $\pm$ 0.00086	0.03558 $\pm$ 0.00380	-0.36822 $\pm$ 0.00204
135	0.02100 $\pm$ 0.00006	0.01360 $\pm$ 0.00118	-0.12164 $\pm$ 0.00322	-0.56356 $\pm$ 0.00189
140	0.02734 $\pm$ 0.00008	0.60971 $\pm$ 0.00135	-0.20906 $\pm$ 0.00205	-0.66309 $\pm$ 0.00186
145	0.03314 $\pm$ 0.00010	0.57349 $\pm$ 0.00141	-0.44777 $\pm$ 0.00252	-0.60601 $\pm$ 0.00193
150	0.03895 $\pm$ 0.00012	0.46869 $\pm$ 0.00138	-0.59019 $\pm$ 0.00213	-0.65727 $\pm$ 0.00202
155	0.04447 $\pm$ 0.00015	0.37469 $\pm$ 0.00120	-0.71319 $\pm$ 0.00167	-0.59242 $\pm$ 0.00203
160	0.04943 $\pm$ 0.00017	0.20966 $\pm$ 0.00111	-0.81527 $\pm$ 0.00118	-0.50143 $\pm$ 0.00189
165	0.05356 $\pm$ 0.00019	0.21153 $\pm$ 0.00080	-0.89556 $\pm$ 0.00072	-0.39144 $\pm$ 0.00160
170	0.05660 $\pm$ 0.00021	0.13036 $\pm$ 0.00061	-0.95341 $\pm$ 0.00034	-0.26800 $\pm$ 0.00116
175	0.05861 $\pm$ 0.00023	0.06840 $\pm$ 0.00031	-0.90000 $\pm$ 0.00009	-0.13615 $\pm$ 0.00061
180	0.05927 $\pm$ 0.00023	0.00000 $\pm$ 0.00000	-1.00000 $\pm$ 0.00000	-0.00000 $\pm$ 0.00000

10.00 MeV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/er	A_y	K_x^* K_z	K_x^* K_y
5	7.76174 $\pm$ 0.01611	0.00313 $\pm$ 0.00013	0.99726 $\pm$ 0.00000	-0.07362 $\pm$ 0.00005
10	0.55006 $\pm$ 0.00224	0.00043 $\pm$ 0.00096	0.99437 $\pm$ 0.00010	-0.17610 $\pm$ 0.00056
15	0.26043 $\pm$ 0.00103	-0.04112 $\pm$ 0.00122	0.96112 $\pm$ 0.00054	-0.27301 $\pm$ 0.00206
20	0.24629 $\pm$ 0.00125	-0.06130 $\pm$ 0.00101	0.93415 $\pm$ 0.00106	-0.34750 $\pm$ 0.00301
25	0.23580 $\pm$ 0.00120	-0.11480 $\pm$ 0.00103	0.90101 $\pm$ 0.00163	-0.41632 $\pm$ 0.00353
30	0.22276 $\pm$ 0.00101	-0.14682 $\pm$ 0.00114	0.86022 $\pm$ 0.00220	-0.46833 $\pm$ 0.00365
35	0.20731 $\pm$ 0.00077	-0.17952 $\pm$ 0.00122	0.81102 $\pm$ 0.00279	-0.55630 $\pm$ 0.00399
40	0.18995 $\pm$ 0.00055	-0.21395 $\pm$ 0.00125	0.75276 $\pm$ 0.00334	-0.62855 $\pm$ 0.00396
45	0.17140 $\pm$ 0.00037	-0.25075 $\pm$ 0.00122	0.68481 $\pm$ 0.00362	-0.68422 $\pm$ 0.00377
50	0.15231 $\pm$ 0.00025	-0.29041 $\pm$ 0.00117	0.60646 $\pm$ 0.00420	-0.74017 $\pm$ 0.00341
55	0.13323 $\pm$ 0.00016	-0.33340 $\pm$ 0.00109	0.51705 $\pm$ 0.00444	-0.78835 $\pm$ 0.00293
60	0.11461 $\pm$ 0.00011	-0.36018 $\pm$ 0.00103	0.41582 $\pm$ 0.00453	-0.82617 $\pm$ 0.00233
65	0.09663 $\pm$ 0.00006	-0.43119 $\pm$ 0.00100	0.30207 $\pm$ 0.00446	-0.85019 $\pm$ 0.00169
70	0.08018 $\pm$ 0.00006	-0.46677 $\pm$ 0.00103	0.17519 $\pm$ 0.00425	-0.85578 $\pm$ 0.00107
75	0.06492 $\pm$ 0.00007	-0.54690 $\pm$ 0.00113	0.03480 $\pm$ 0.00393	-0.63847 $\pm$ 0.00077
80	0.05125 $\pm$ 0.00006	-0.61056 $\pm$ 0.00131	-0.11882 $\pm$ 0.00354	-0.78299 $\pm$ 0.00111
85	0.03936 $\pm$ 0.00006	-0.67433 $\pm$ 0.00152	-0.26364 $\pm$ 0.00311	-0.68179 $\pm$ 0.00175
90	0.02935 $\pm$ 0.00005	-0.72872 $\pm$ 0.00172	-0.45323 $\pm$ 0.00266	-0.51336 $\pm$ 0.00237
95	0.02130 $\pm$ 0.00007	-0.75077 $\pm$ 0.00189	-0.61030 $\pm$ 0.00223	-0.25274 $\pm$ 0.00277
100	0.01525 $\pm$ 0.00006	-0.69019 $\pm$ 0.00204	-0.71366 $\pm$ 0.00209	0.11851 $\pm$ 0.00263
105	0.01116 $\pm$ 0.00005	-0.46118 $\pm$ 0.00223	-0.66656 $\pm$ 0.00257	0.56209 $\pm$ 0.00187
110	0.00901 $\pm$ 0.00004	-0.00449 $\pm$ 0.00257	-0.45564 $\pm$ 0.00367	0.89915 $\pm$ 0.00186
115	0.00863 $\pm$ 0.00004	0.54103 $\pm$ 0.00266	-0.10420 $\pm$ 0.00224	0.83452 $\pm$ 0.00227
120	0.00986 $\pm$ 0.00004	0.69572 $\pm$ 0.00172	0.13243 $\pm$ 0.00565	0.42445 $\pm$ 0.00249
125	0.01249 $\pm$ 0.00005	0.96636 $\pm$ 0.00065	0.15965 $\pm$ 0.00525	-0.03352 $\pm$ 0.00245
130	0.01630 $\pm$ 0.00006	0.92367 $\pm$ 0.00100	0.05084 $\pm$ 0.00438	-0.37832 $\pm$ 0.00221
135	0.02100 $\pm$ 0.00007	0.60756 $\pm$ 0.00127	-0.11119 $\pm$ 0.00375	-0.57921 $\pm$ 0.00203
140	0.02631 $\pm$ 0.00009	0.68362 $\pm$ 0.00143	-0.26219 $\pm$ 0.00333	-0.67307 $\pm$ 0.00203
145	0.03193 $\pm$ 0.00011	0.56703 $\pm$ 0.00146	-0.44344 $\pm$ 0.00293	-0.69349 $\pm$ 0.00216
150	0.03757 $\pm$ 0.00014	0.46368 $\pm$ 0.00145	-0.58758 $\pm$ 0.00247	-0.66314 $\pm$ 0.00229
155	0.04293 $\pm$ 0.00016	0.37045 $\pm$ 0.00134	-0.71169 $\pm$ 0.00193	-0.59687 $\pm$ 0.00231
160	0.04775 $\pm$ 0.00019	0.26824 $\pm$ 0.00117	-0.61448 $\pm$ 0.00136	-0.50467 $\pm$ 0.00216
165	0.05177 $\pm$ 0.00022	0.20895 $\pm$ 0.00093	-0.69519 $\pm$ 0.00082	-0.39368 $\pm$ 0.00183
170	0.05480 $\pm$ 0.00024	0.13664 $\pm$ 0.00065	-0.95326 $\pm$ 0.00039	-0.26848 $\pm$ 0.00133
175	0.05669 $\pm$ 0.00025	0.06754 $\pm$ 0.00033	-0.96829 $\pm$ 0.00010	-0.13661 $\pm$ 0.00070
180	0.05732 $\pm$ 0.00026	0.00000 $\pm$ 0.00000	-1.00000 $\pm$ 0.00000	-0.00000 $\pm$ 0.00000

10.50-16.7 eV Laboratory Energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	K_z^2	K_x^2
3	7.24550 $\pm$ 0.01699	0.00319 $\pm$ 0.00014	0.34724 $\pm$ 0.00009	-0.07355 $\pm$ 0.00002
10	0.31616 $\pm$ 0.00226	0.00053 $\pm$ 0.00102	0.39437 $\pm$ 0.00011	-0.17609 $\pm$ 0.00002
15	0.26504 $\pm$ 0.00125	-0.04113 $\pm$ 0.00124	0.36140 $\pm$ 0.00055	-0.27205 $\pm$ 0.00221
20	0.24046 $\pm$ 0.00147	-0.07997 $\pm$ 0.00104	0.93476 $\pm$ 0.00114	-0.34013 $\pm$ 0.00316
25	0.22937 $\pm$ 0.00138	-0.11239 $\pm$ 0.00110	0.390191 $\pm$ 0.00171	-0.41704 $\pm$ 0.00309
30	0.21696 $\pm$ 0.00115	-0.14361 $\pm$ 0.00123	0.86136 $\pm$ 0.00230	-0.40720 $\pm$ 0.00401
35	0.20192 $\pm$ 0.00088	-0.17564 $\pm$ 0.00131	0.81235 $\pm$ 0.00291	-0.55609 $\pm$ 0.00416
40	0.18490 $\pm$ 0.00063	-0.20949 $\pm$ 0.00133	0.75425 $\pm$ 0.00345	-0.62226 $\pm$ 0.00413
45	0.16670 $\pm$ 0.00042	-0.24574 $\pm$ 0.00130	0.66637 $\pm$ 0.00399	-0.68445 $\pm$ 0.00392
50	0.14600 $\pm$ 0.00026	-0.26486 $\pm$ 0.00122	0.60800 $\pm$ 0.00436	-0.74407 $\pm$ 0.00355
55	0.12935 $\pm$ 0.00018	-0.32736 $\pm$ 0.00113	0.51840 $\pm$ 0.00463	-0.79200 $\pm$ 0.00304
60	0.11119 $\pm$ 0.00012	-0.37360 $\pm$ 0.00105	0.41653 $\pm$ 0.00472	-0.82666 $\pm$ 0.00241
65	0.09367 $\pm$ 0.00009	-0.42464 $\pm$ 0.00101	0.30257 $\pm$ 0.00455	-0.85360 $\pm$ 0.00173
70	0.07769 $\pm$ 0.00006	-0.47902 $\pm$ 0.00106	0.17499 $\pm$ 0.00445	-0.86019 $\pm$ 0.00109
75	0.06267 $\pm$ 0.00009	-0.53853 $\pm$ 0.00126	0.03373 $\pm$ 0.00413	-0.84193 $\pm$ 0.00076
80	0.04961 $\pm$ 0.00009	-0.60165 $\pm$ 0.00141	-0.12093 $\pm$ 0.00376	-0.78355 $\pm$ 0.00119
85	0.03807 $\pm$ 0.00009	-0.68506 $\pm$ 0.00166	-0.26693 $\pm$ 0.00335	-0.80947 $\pm$ 0.00107
90	0.02636 $\pm$ 0.00009	-0.771905 $\pm$ 0.00168	-0.45776 $\pm$ 0.00290	-0.52208 $\pm$ 0.00254
95	0.02055 $\pm$ 0.00008	-0.74266 $\pm$ 0.00204	-0.61594 $\pm$ 0.00242	-0.20195 $\pm$ 0.00294
100	0.01465 $\pm$ 0.00007	-0.65530 $\pm$ 0.00218	-0.71966 $\pm$ 0.00215	0.11031 $\pm$ 0.00271
105	0.01072 $\pm$ 0.00006	-0.46056 $\pm$ 0.00234	-0.69026 $\pm$ 0.00259	0.55806 $\pm$ 0.00103
110	0.00861 $\pm$ 0.00005	-0.00686 $\pm$ 0.00276	-0.45139 $\pm$ 0.00393	0.89230 $\pm$ 0.00199
115	0.00823 $\pm$ 0.00004	0.53929 $\pm$ 0.00300	-0.08443 $\pm$ 0.00600	0.63746 $\pm$ 0.00243
120	0.00941 $\pm$ 0.00004	0.89364 $\pm$ 0.00202	0.15403 $\pm$ 0.00670	0.42110 $\pm$ 0.00205
125	0.01196 $\pm$ 0.00005	0.98239 $\pm$ 0.00111	0.17936 $\pm$ 0.00539	-0.04347 $\pm$ 0.00265
130	0.01564 $\pm$ 0.00006	0.91839 $\pm$ 0.00121	0.06578 $\pm$ 0.00504	-0.39016 $\pm$ 0.00249
135	0.02019 $\pm$ 0.00006	0.80158 $\pm$ 0.00143	-0.10081 $\pm$ 0.00437	-0.58939 $\pm$ 0.00222
140	0.02534 $\pm$ 0.00010	0.67751 $\pm$ 0.00156	-0.27533 $\pm$ 0.00369	-0.80204 $\pm$ 0.00224
145	0.03079 $\pm$ 0.00013	0.56219 $\pm$ 0.00160	-0.43909 $\pm$ 0.00342	-0.70062 $\pm$ 0.00243
150	0.03626 $\pm$ 0.00016	0.45873 $\pm$ 0.00156	-0.58494 $\pm$ 0.00286	-0.60069 $\pm$ 0.00201
155	0.04147 $\pm$ 0.00019	0.36668 $\pm$ 0.00144	-0.71018 $\pm$ 0.00223	-0.60124 $\pm$ 0.00264
160	0.04615 $\pm$ 0.00022	0.28268 $\pm$ 0.00125	-0.81367 $\pm$ 0.00156	-0.50765 $\pm$ 0.00247
165	0.05007 $\pm$ 0.00025	0.20643 $\pm$ 0.00100	-0.89480 $\pm$ 0.00095	-0.39587 $\pm$ 0.00203
170	0.05301 $\pm$ 0.00027	0.13486 $\pm$ 0.00069	-0.95311 $\pm$ 0.00044	-0.27065 $\pm$ 0.00151
175	0.05484 $\pm$ 0.00026	0.06669 $\pm$ 0.00035	-0.98820 $\pm$ 0.00011	-0.13747 $\pm$ 0.00050
180	0.05547 $\pm$ 0.00029	0.00000 $\pm$ 0.00000	-1.00000 $\pm$ 0.00000	-0.00000 $\pm$ 0.00000

17.0-MeV Laboratory energy

θ c.m. deg	$\sigma(\theta)$ c.m. b/sr	A_y	K_z'	K_x'
5	0.77377 $\pm$ 0.01733	0.00320 $\pm$ 0.00015	0.99729 $\pm$ 0.00000	-0.07350 $\pm$ 0.00000
10	0.46352 $\pm$ 0.00231	0.00004 $\pm$ 0.00109	0.99930 $\pm$ 0.00012	-0.17000 $\pm$ 0.00000
15	0.25075 $\pm$ 0.00149	-0.04000 $\pm$ 0.00127	0.99169 $\pm$ 0.00063	-0.27111 $\pm$ 0.00237
20	0.23331 $\pm$ 0.00170	-0.07040 $\pm$ 0.00100	0.93539 $\pm$ 0.00120	-0.34402 $\pm$ 0.00333
25	0.22347 $\pm$ 0.00153	-0.10990 $\pm$ 0.00119	0.90277 $\pm$ 0.00179	-0.41503 $\pm$ 0.00390
30	0.21160 $\pm$ 0.00130	-0.14042 $\pm$ 0.00135	0.80242 $\pm$ 0.00241	-0.40053 $\pm$ 0.00410
35	0.19000 $\pm$ 0.00099	-0.17102 $\pm$ 0.00144	0.51300 $\pm$ 0.00304	-0.55540 $\pm$ 0.00433
40	0.16015 $\pm$ 0.00070	-0.20510 $\pm$ 0.00140	0.75562 $\pm$ 0.00304	-0.02200 $\pm$ 0.00429
45	0.10225 $\pm$ 0.00047	-0.24004 $\pm$ 0.00142	0.90770 $\pm$ 0.00417	-0.00401 $\pm$ 0.00400
50	0.14390 $\pm$ 0.00031	-0.27949 $\pm$ 0.00133	0.60933 $\pm$ 0.00455	-0.74203 $\pm$ 0.00309
55	0.12505 $\pm$ 0.00020	-0.32140 $\pm$ 0.00122	0.51951 $\pm$ 0.00400	-0.79169 $\pm$ 0.00315
60	0.10792 $\pm$ 0.00014	-0.30710 $\pm$ 0.00113	0.41754 $\pm$ 0.00490	-0.03110 $\pm$ 0.00200
65	0.09105 $\pm$ 0.00011	-0.41702 $\pm$ 0.00109	0.30200 $\pm$ 0.00409	-0.05702 $\pm$ 0.00179
70	0.07531 $\pm$ 0.00010	-0.47134 $\pm$ 0.00114	0.17431 $\pm$ 0.00409	-0.00455 $\pm$ 0.00111
75	0.06002 $\pm$ 0.00011	-0.53010 $\pm$ 0.00131	0.03205 $\pm$ 0.00440	-0.04729 $\pm$ 0.00003
80	0.04505 $\pm$ 0.00012	-0.59201 $\pm$ 0.00157	-0.12377 $\pm$ 0.00400	-0.79592 $\pm$ 0.00130
85	0.03005 $\pm$ 0.00011	-0.65549 $\pm$ 0.00100	-0.29100 $\pm$ 0.00300	-0.00000 $\pm$ 0.00200
90	0.02743 $\pm$ 0.00010	-0.71000 $\pm$ 0.00211	-0.40320 $\pm$ 0.00321	-0.53035 $\pm$ 0.00270
95	0.01905 $\pm$ 0.00009	-0.73410 $\pm$ 0.00230	-0.62209 $\pm$ 0.00270	-0.27000 $\pm$ 0.00320
100	0.01415 $\pm$ 0.00007	-0.67093 $\pm$ 0.00247	-0.72701 $\pm$ 0.00230	0.10200 $\pm$ 0.00290
105	0.01030 $\pm$ 0.00000	-0.45011 $\pm$ 0.00200	-0.09500 $\pm$ 0.00265	0.55407 $\pm$ 0.00192
110	0.00824 $\pm$ 0.00005	-0.09733 $\pm$ 0.00313	-0.44320 $\pm$ 0.00453	0.03390 $\pm$ 0.00200
115	0.00700 $\pm$ 0.00004	0.53013 $\pm$ 0.00347	-0.07303 $\pm$ 0.00699	0.03904 $\pm$ 0.00200
120	0.00300 $\pm$ 0.00004	0.09170 $\pm$ 0.00240	0.17404 $\pm$ 0.00770	0.41732 $\pm$ 0.00330
125	0.01140 $\pm$ 0.00000	0.97040 $\pm$ 0.00141	0.19055 $\pm$ 0.00003	-0.05747 $\pm$ 0.00340
130	0.01002 $\pm$ 0.00007	0.91200 $\pm$ 0.00149	0.00039 $\pm$ 0.00500	-0.40007 $\pm$ 0.00291
135	0.01943 $\pm$ 0.00009	0.74503 $\pm$ 0.00107	-0.09062 $\pm$ 0.00509	-0.59477 $\pm$ 0.00250
140	0.02442 $\pm$ 0.00012	0.67131 $\pm$ 0.00170	-0.20007 $\pm$ 0.00455	-0.09001 $\pm$ 0.00251
145	0.02971 $\pm$ 0.00015	0.55054 $\pm$ 0.00177	-0.43470 $\pm$ 0.00399	-0.70795 $\pm$ 0.00275
150	0.03502 $\pm$ 0.00010	0.45379 $\pm$ 0.00171	-0.50231 $\pm$ 0.00332	-0.07452 $\pm$ 0.00297
155	0.04000 $\pm$ 0.00021	0.30214 $\pm$ 0.00157	-0.70007 $\pm$ 0.00257	-0.00551 $\pm$ 0.00302
160	0.04403 $\pm$ 0.00024	0.27950 $\pm$ 0.00130	-0.61207 $\pm$ 0.00160	-0.51047 $\pm$ 0.00202
165	0.04843 $\pm$ 0.00026	0.20393 $\pm$ 0.00100	-0.69442 $\pm$ 0.00100	-0.39003 $\pm$ 0.00239
170	0.05130 $\pm$ 0.00030	0.13329 $\pm$ 0.00075	-0.95297 $\pm$ 0.00051	-0.27219 $\pm$ 0.00173
175	0.05300 $\pm$ 0.00032	0.06500 $\pm$ 0.00039	-0.90022 $\pm$ 0.00013	-0.13011 $\pm$ 0.00091
180	0.05300 $\pm$ 0.00032	0.00000 $\pm$ 0.00000	-1.00000 $\pm$ 0.00000	-0.00000 $\pm$ 0.00000

Lab Energy (MeV)	Phase Shift (Degrees)	Standard Deviation	Lab Energy (MeV)	Phase Shift (Degrees)	Standard Deviation
.05	2s1/2	.0000	.45	2s1/2	.0137
	2p3/2	.0006		2p3/2	.9379
	2p1/2	.0002		2p1/2	.2923
	2d5/2	.0000		2d5/2	.0000
	2d3/2	.0000		2d3/2	.0001
	2f7/2	.0000		2f7/2	.0000
.10	2f5/2	.0000	.50	2f5/2	.0000
	2s1/2	.0006		2s1/2	.0158
	2p3/2	.0103		2p3/2	.0035
	2p1/2	.0036		2p1/2	.0021
	2d5/2	.0000		2d5/2	.0001
	2d3/2	.0000		2d3/2	.0000
.15	2f7/2	.0000	.55	2f7/2	.0000
	2f5/2	.0000		2f5/2	.0000
	2s1/2	.0018		2s1/2	.0176
	2p3/2	.0417		2p3/2	.0046
	2p1/2	.0143		2p1/2	.0026
	2d5/2	.0000		2d5/2	.0001
.20	2d3/2	.0000	.60	2d3/2	.0001
	2f7/2	.0000		2f7/2	.0000
	2f5/2	.0000		2f5/2	.0000
	2s1/2	.0035		2s1/2	.0197
	2p3/2	.1017		2p3/2	.0060
	2p1/2	.0344		2p1/2	.0032
.25	2d5/2	.0000	.65	2d5/2	.0001
	2d3/2	.0000		2d3/2	.0001
	2f7/2	.0000		2f7/2	.0000
	2f5/2	.0000		2f5/2	.0000
	2s1/2	.0054		2s1/2	.0216
	2p3/2	.1943		2p3/2	.0073
.30	2p1/2	.0648	.70	2p1/2	.0038
	2d5/2	.0000		2d5/2	.0038
	2d3/2	.0000		2d3/2	.0001
	2f7/2	.0000		2f7/2	.0000
	2f5/2	.0000		2f5/2	.0000
	2s1/2	.0075		2s1/2	.0234
.35	2p3/2	.3222	.75	2p3/2	.0088
	2p1/2	.1057		2p1/2	.0045
	2d5/2	.0000		2d5/2	.0002
	2d3/2	.0000		2d3/2	.0001
	2f7/2	.0000		2f7/2	.0000
	2f5/2	.0000		2f5/2	.0000
.40	2s1/2	.0096	.80	2s1/2	.0252
	2p3/2	.4375		2p3/2	.0104
	2p1/2	.1573		2p1/2	.0052
	2d5/2	.0000		2d5/2	.0002
	2d3/2	.0000		2d3/2	.0002
	2f7/2	.0000		2f7/2	.0000
.45	2f5/2	.0000	.85	2f5/2	.0000
	2s1/2	.0117		2s1/2	.0269
	2p3/2	.0022		2p3/2	.0122
	2p1/2	.0012		2p1/2	.0060
	2d5/2	.0000		2d5/2	.0002
	2d3/2	.0000		2d3/2	.0002
.50	2f7/2	.0000	.90	2f7/2	.0000
	2f5/2	.0000		2f5/2	.0000
	2s1/2	.0117		2s1/2	.0269
	2p3/2	.0022		2p3/2	.0122
	2p1/2	.0012		2p1/2	.0060
	2d5/2	.0000		2d5/2	.0002
.55	2d3/2	.0000	.95	2d3/2	.0002
	2f7/2	.0000		2f7/2	.0000
	2f5/2	.0000		2f5/2	.0000
	2s1/2	.0117		2s1/2	.0269
	2p3/2	.0022		2p3/2	.0122
	2p1/2	.0012		2p1/2	.0060
.60	2d5/2	.0000	1.00	2d5/2	.0002
	2d3/2	.0000		2d3/2	.0002
	2f7/2	.0000		2f7/2	.0000
	2f5/2	.0000		2f5/2	.0000
	2s1/2	.0117		2s1/2	.0269
	2p3/2	.0022		2p3/2	.0122
.65	2p1/2	.0012	1.05	2p1/2	.0060
	2d5/2	.0000		2d5/2	.0002
	2d3/2	.0000		2d3/2	.0002
	2f7/2	.0000		2f7/2	.0000
	2f5/2	.0000		2f5/2	.0000
	2s1/2	.0117		2s1/2	.0269
.70	2p3/2	.0022	1.10	2p3/2	.0122
	2p1/2	.0012		2p1/2	.0060
	2d5/2	.0000		2d5/2	.0002
	2d3/2	.0000		2d3/2	.0002
	2f7/2	.0000		2f7/2	.0000
	2f5/2	.0000		2f5/2	.0000
.75	2s1/2	.0054	1.15	2s1/2	.0216
	2p3/2	.1943		2p3/2	.0073
	2p1/2	.0648		2p1/2	.0038
	2d5/2	.0000		2d5/2	.0038
	2d3/2	.0000		2d3/2	.0001
	2f7/2	.0000		2f7/2	.0000
.80	2f5/2	.0000	1.20	2f5/2	.0000
	2s1/2	.0075		2s1/2	.0234
	2p3/2	.3222		2p3/2	.0088
	2p1/2	.1057		2p1/2	.0045
	2d5/2	.0000		2d5/2	.0002
	2d3/2	.0000		2d3/2	.0001
.85	2f7/2	.0000	1.25	2f7/2	.0000
	2f5/2	.0000		2f5/2	.0000
	2s1/2	.0096		2s1/2	.0252
	2p3/2	.4375		2p3/2	.0104
	2p1/2	.1573		2p1/2	.0052
	2d5/2	.0000		2d5/2	.0002
.90	2d3/2	.0000	1.30	2d3/2	.0002
	2f7/2	.0000		2f7/2	.0000
	2f5/2	.0000		2f5/2	.0000
	2s1/2	.0117		2s1/2	.0269
	2p3/2	.0022		2p3/2	.0122
	2p1/2	.0012		2p1/2	.0060
.95	2d5/2	.0000	1.35	2d5/2	.0002
	2d3/2	.0000		2d3/2	.0002
	2f7/2	.0000		2f7/2	.0000
	2f5/2	.0000		2f5/2	.0000
	2s1/2	.0117		2s1/2	.0269
	2p3/2	.0022		2p3/2	.0122
1.00	2p1/2	.0012	1.40	2p1/2	.0060
	2d5/2	.0000		2d5/2	.0002
	2d3/2	.0000		2d3/2	.0002
	2f7/2	.0000		2f7/2	.0000
	2f5/2	.0000		2f5/2	.0000
	2s1/2	.0117		2s1/2	.0269
1.05	2p3/2	.0022	1.45	2p3/2	.0122
	2p1/2	.0012		2p1/2	.0060
	2d5/2	.0000		2d5/2	.0002
	2d3/2	.0000		2d3/2	.0002
	2f7/2	.0000		2f7/2	.0000
	2f5/2	.0000		2f5/2	.0000
1.10	2s1/2	.0054	1.50	2s1/2	.0216
	2p3/2	.1943		2p3/2	.0073
	2p1/2	.0648		2p1/2	.0038
	2d5/2	.0000		2d5/2	.0038
	2d3/2	.0000		2d3/2	.0001
	2f7/2	.0000		2f7/2	.0000
1.15	2f5/2	.0000	1.55	2f5/2	.0000
	2s1/2	.0075		2s1/2	.0234
	2p3/2	.3222		2p3/2	.0088
	2p1/2	.1057		2p1/2	.0045
	2d5/2	.0000		2d5/2	.0002
	2d3/2	.0000		2d3/2	.0001
1.20	2f7/2	.0000	1.60	2f7/2	.0000
	2f5/2	.0000		2f5/2	.0000
	2s1/2	.0096		2s1/2	.0252
	2p3/2	.4375		2p3/2	.0104
	2p1/2	.1573		2p1/2	.0052
	2d5/2	.0000		2d5/2	.0002
1.25	2d3/2	.0000	1.65	2d3/2	.0002
	2f7/2	.0000		2f7/2	.0000
	2f5/2	.0000		2f5/2	.0000
	2s1/2	.0117		2s1/2	.0269
	2p3/2	.0022		2p3/2	.0122
	2p1/2	.0012		2p1/2	.0060
1.30	2d5/2	.0000	1.70	2d5/2	.0002
	2d3/2	.0000		2d3/2	.0002
	2f7/2	.0000		2f7/2	.0000
	2f5/2	.0000		2f5/2	.0000
	2s1/2	.0117		2s1/2	.0269
	2p3/2	.0022		2p3/2	.0122
1.35	2p1/2	.0012	1.75	2p1/2	.0060
	2d5/2	.0000		2d5/2	.0002
	2d3/2	.0000		2d3/2	.0002
	2f7/2	.0000		2f7/2	.0000
	2f5/2	.0000		2f5/2	.0000
	2s1/2	.0117		2s1/2	.0269
1.40	2p3/2	.0022	1.80	2p3/2	.0122
	2p1/2	.0012		2p1/2	.0060
	2d5/2	.0000		2d5/2	.0002
	2d3/2	.0000		2d3/2	.0002
	2f7/2	.0000		2f7/2	.0000
	2f5/2	.0000		2f5/2	.0000
1.45	2s1/2	.0054	1.85	2s1/2	.0216
	2p3/2	.1943		2p3/2	.0073
	2p1/2	.0648		2p1/2	.0038
	2d5/2	.0000		2d5/2	.0038
	2d3/2	.0000		2d3/2	.0001
	2f7/2	.0000		2f7/2	.0000
1.50	2f5/2	.0000	1.90	2f5/2	.0000
	2s1/2	.0075		2s1/2	.0234
	2p3/2	.3222		2p3/2	.0088
	2p1/2	.1057		2p1/2	.0045
	2d5/2	.0000		2d5/2	.0002
	2d3/2	.0000		2d3/2	.0001
1.55	2f7/2	.0000	1.95	2f7/2	.0000
	2f5/2	.0000		2f5/2	.0000
	2s1/2	.0096		2s1/2	.0252
	2p3/2	.4375		2p3/2	.0104
	2p1/2	.1573		2p1/2	.0052
	2d5/2	.0000		2d5/2	.0002
1.60	2d3/2	.0000	2.00	2d3/2	.0002
	2f7/2	.0000		2f7/2	.0000
	2f5/2	.0000		2f5/2	.0000
	2s1/2	.0117		2s1/2	.0269
	2p3/2	.0022		2p3/2	.0122
	2p1/2	.0012		2p1/2	.0060
1.65	2d5/2	.0000	2.05	2d5/2	.0002

Lab Energy (MeV)	Phase Shift (Degrees)	Standard Deviation	Lab Energy (MeV)	Phase Shift (Degrees)	Standard Deviation
.85			1.25		
2s1/2	-9.9001	.0235	2s1/2	-14.6761	.0403
2p3/2	4.6756	.0142	2p3/2	12.8734	.0366
2p1/2	1.2333	.0059	2p1/2	2.7957	.0153
2d5/2	.0002	.0003	2d5/2	.0003	.0009
2d3/2	-.0005	.0002	2d3/2	-.0013	.0007
2f7/2	.0000	.0000	2f7/2	.0002	.0000
2f5/2	.0000	.0000	2f5/2	.0001	.0000
.90			1.30		
2s1/2	-10.5345	.0302	2s1/2	-15.2237	.0416
2p3/2	5.4101	.0164	2p3/2	14.3411	.0429
2p1/2	1.4022	.0073	2p1/2	3.0313	.0166
2d5/2	.0002	.0003	2d5/2	.0009	.0010
2d3/2	-.0005	.0003	2d3/2	-.0015	.0005
2f7/2	.0000	.0000	2f7/2	.0002	.0000
2f5/2	.0000	.0000	2f5/2	.0002	.0000
.95			1.35		
2s1/2	-11.1576	.0317	2s1/2	-15.7725	.0429
2p3/2	6.2170	.0183	2p3/2	15.9265	.0476
2p1/2	1.5739	.0087	2p1/2	3.2756	.0179
2d5/2	.0003	.0004	2d5/2	.0010	.0011
2d3/2	-.0006	.0003	2d3/2	-.0016	.0009
2f7/2	.0001	.0000	2f7/2	.0002	.0000
2f5/2	.0000	.0000	2f5/2	.0002	.0000
1.00			1.40		
2s1/2	-11.7693	.0333	2s1/2	-16.3078	.0441
2p3/2	7.1011	.0215	2p3/2	17.6418	.0526
2p1/2	1.7549	.0037	2p1/2	3.5281	.0193
2d5/2	.0004	.0005	2d5/2	.0011	.0012
2d3/2	-.0007	.0004	2d3/2	-.0018	.0010
2f7/2	.0001	.0000	2f7/2	.0003	.0000
2f5/2	.0001	.0000	2f5/2	.0002	.0000
1.05			1.45		
2s1/2	-12.3712	.0348	2s1/2	-16.8349	.0453
2p3/2	8.0576	.0244	2p3/2	19.4372	.0530
2p1/2	1.9452	.0107	2p1/2	3.7392	.0207
2d5/2	.0004	.0005	2d5/2	.0013	.0014
2d3/2	-.0008	.0004	2d3/2	-.0019	.0011
2f7/2	.0001	.0000	2f7/2	.0003	.0000
2f5/2	.0001	.0000	2f5/2	.0002	.0000
1.10			1.50		
2s1/2	-12.9522	.0362	2s1/2	-17.3541	.0465
2p3/2	9.1221	.0275	2p3/2	21.4699	.0537
2p1/2	2.1446	.0118	2p1/2	4.0537	.0221
2d5/2	.0005	.0006	2d5/2	.0014	.0015
2d3/2	-.0009	.0005	2d3/2	-.0021	.0012
2f7/2	.0001	.0000	2f7/2	.0004	.0000
2f5/2	.0001	.0000	2f5/2	.0003	.0000
1.15			1.55		
2s1/2	-13.5432	.0376	2s1/2	-17.8655	.0477
2p3/2	10.2703	.0309	2p3/2	23.5943	.0597
2p1/2	2.3530	.0129	2p1/2	4.3367	.0236
2d5/2	.0006	.0007	2d5/2	.0016	.0016
2d3/2	-.0010	.0006	2d3/2	-.0023	.0014
2f7/2	.0001	.0000	2f7/2	.0004	.0000
2f5/2	.0001	.0000	2f5/2	.0003	.0000
1.20			1.60		
2s1/2	-14.1143	.0390	2s1/2	-18.3699	.0488
2p3/2	11.5135	.0346	2p3/2	25.8631	.0760
2p1/2	2.5704	.0141	2p1/2	4.6230	.0251
2d5/2	.0007	.0008	2d5/2	.0018	.0018
2d3/2	-.0012	.0007	2d3/2	-.0025	.0015
2f7/2	.0002	.0000	2f7/2	.0005	.0001
2f5/2	.0001	.0000	2f5/2	.0004	.0000

Lab Energy (MeV)	Phase Shift (Degrees)	Standard Deviation	Lab Energy (MeV)	Phase Shift (Degrees)	Standard Deviation
1.65	2s1/2	-16.6655	2s1/2	-22.6095	.0579
	2p3/2	23.2773	2p3/2	51.9252	.1353
	2p1/2	4.9175	2p1/2	7.5530	.0491
	2d5/2	.0020	2d5/2	.0341	.0036
	2d3/2	-.0026	2d3/2	-.0044	.0030
1.70	2f7/2	.0005	2f7/2	.0301	.0001
	2f5/2	.0004	2f5/2	.0009	.0001
	2s1/2	-19.3564	2s1/2	-23.0512	.0508
	2p3/2	30.6351	2p3/2	55.1695	.1403
	2p1/2	5.2201	2p1/2	7.9220	.0419
1.75	2d5/2	.0022	2d5/2	.0045	.0036
	2d3/2	-.0028	2d3/2	-.0046	.0032
	2f7/2	.0005	2f7/2	.0014	.0002
	2f5/2	.0005	2f5/2	.0010	.0001
	2s1/2	-19.6397	2s1/2	-23.4877	.0597
1.80	2p3/2	33.5319	2p3/2	56.3974	.1445
	2p1/2	5.5308	2p1/2	8.2931	.0433
	2d5/2	.0024	2d5/2	.0048	.0041
	2d3/2	-.0030	2d3/2	-.0049	.0034
	2f7/2	.0007	2f7/2	.0015	.0002
1.85	2f5/2	.0005	2f5/2	.0011	.0001
	2s1/2	-20.3164	2s1/2	-23.9190	.0605
	2p3/2	36.3599	2p3/2	61.5825	.1450
	2p1/2	5.8494	2p1/2	8.6712	.0455
	2d5/2	.0026	2d5/2	.0052	.0044
1.90	2d3/2	-.0033	2d3/2	-.0051	.0036
	2f7/2	.0008	2f7/2	.0016	.0002
	2f5/2	.0006	2f5/2	.0012	.0002
	2s1/2	-20.7869	2s1/2	-24.3454	.0614
	2p3/2	39.3072	2p3/2	64.7009	.1508
1.95	2p1/2	6.1759	2p1/2	9.0561	.0475
	2d5/2	.0029	2d5/2	.0056	.0046
	2d3/2	-.0035	2d3/2	-.0053	.0038
	2f7/2	.0008	2f7/2	.0018	.0002
	2f5/2	.0006	2f5/2	.0013	.0002
2.00	2s1/2	-21.2512	2s1/2	-24.7670	.0622
	2p3/2	42.3582	2p3/2	67.7314	.1528
	2p1/2	6.5101	2p1/2	9.4478	.0494
	2d5/2	.0032	2d5/2	.0051	.0049
	2d3/2	-.0037	2d3/2	-.0056	.0041
2.05	2f7/2	.0009	2f7/2	.0019	.0002
	2f5/2	.0007	2f5/2	.0014	.0002
	2s1/2	-21.7097	2s1/2	-25.1839	.0631
	2p3/2	45.4936	2p3/2	70.6563	.1542
	2p1/2	6.8519	2p1/2	9.8460	.0512
2.10	2d5/2	.0035	2d5/2	.0065	.0052
	2d3/2	-.0039	2d3/2	-.0058	.0043
	2f7/2	.0010	2f7/2	.0021	.0002
	2f5/2	.0008	2f5/2	.0016	.0002
	2s1/2	-22.1624	2s1/2	-25.5962	.0639
2.15	2p3/2	48.6910	2p3/2	73.4618	.1550
	2p1/2	7.2013	2p1/2	10.2506	.0532
	2d5/2	.0038	2d5/2	.0070	.0055
	2d3/2	-.0041	2d3/2	-.0051	.0045
	2f7/2	.0011	2f7/2	.0022	.0003
2.20	2f5/2	.0008	2f5/2	.0017	.0002
	2s1/2	-20.3164	2s1/2	-23.9190	.0605
	2p3/2	36.3599	2p3/2	61.5825	.1450
	2p1/2	5.8494	2p1/2	8.6712	.0455
	2d5/2	.0026	2d5/2	.0052	.0044
2.25	2d3/2	-.0033	2d3/2	-.0051	.0036
	2f7/2	.0008	2f7/2	.0016	.0002
	2f5/2	.0006	2f5/2	.0012	.0002
	2s1/2	-20.7869	2s1/2	-24.3454	.0614
	2p3/2	39.3072	2p3/2	64.7009	.1508
2.30	2p1/2	6.1759	2p1/2	9.0561	.0475
	2d5/2	.0029	2d5/2	.0056	.0046
	2d3/2	-.0035	2d3/2	-.0053	.0038
	2f7/2	.0008	2f7/2	.0018	.0002
	2f5/2	.0006	2f5/2	.0013	.0002
2.35	2s1/2	-21.2512	2s1/2	-24.7670	.0622
	2p3/2	42.3582	2p3/2	67.7314	.1528
	2p1/2	6.5101	2p1/2	9.4478	.0494
	2d5/2	.0032	2d5/2	.0051	.0049
	2d3/2	-.0037	2d3/2	-.0056	.0041
2.40	2f7/2	.0009	2f7/2	.0019	.0002
	2f5/2	.0007	2f5/2	.0014	.0002
	2s1/2	-21.7097	2s1/2	-25.1839	.0631
	2p3/2	45.4936	2p3/2	70.6563	.1542
	2p1/2	6.8519	2p1/2	9.8460	.0512
2.45	2d5/2	.0035	2d5/2	.0065	.0052
	2d3/2	-.0039	2d3/2	-.0058	.0043
	2f7/2	.0010	2f7/2	.0021	.0002
	2f5/2	.0008	2f5/2	.0016	.0002
	2s1/2	-22.1624	2s1/2	-25.5962	.0639
2.50	2p3/2	48.6910	2p3/2	73.4618	.1550
	2p1/2	7.2013	2p1/2	10.2506	.0532
	2d5/2	.0038	2d5/2	.0070	.0055
	2d3/2	-.0041	2d3/2	-.0051	.0045
	2f7/2	.0011	2f7/2	.0022	.0003
2.55	2f5/2	.0008	2f5/2	.0017	.0002
	2s1/2	-22.3164	2s1/2	-23.9190	.0605
	2p3/2	36.3599	2p3/2	61.5825	.1450
	2p1/2	5.8494	2p1/2	8.6712	.0455
	2d5/2	.0026	2d5/2	.0052	.0044
2.60	2d3/2	-.0033	2d3/2	-.0051	.0036
	2f7/2	.0008	2f7/2	.0016	.0002
	2f5/2	.0006	2f5/2	.0012	.0002
	2s1/2	-20.7869	2s1/2	-24.3454	.0614
	2p3/2	39.3072	2p3/2	64.7009	.1508
2.65	2p1/2	6.1759	2p1/2	9.0561	.0475
	2d5/2	.0029	2d5/2	.0056	.0046
	2d3/2	-.0035	2d3/2	-.0053	.0038
	2f7/2	.0008	2f7/2	.0018	.0002
	2f5/2	.0006	2f5/2	.0013	.0002
2.70	2s1/2	-21.2512	2s1/2	-24.7670	.0622
	2p3/2	42.3582	2p3/2	67.7314	.1528
	2p1/2	6.5101	2p1/2	9.4478	.0494
	2d5/2	.0032	2d5/2	.0051	.0049
	2d3/2	-.0037	2d3/2	-.0056	.0041
2.75	2f7/2	.0009	2f7/2	.0019	.0002
	2f5/2	.0007	2f5/2	.0014	.0002
	2s1/2	-21.7097	2s1/2	-25.1839	.0631
	2p3/2	45.4936	2p3/2	70.6563	.1542
	2p1/2	6.8519	2p1/2	9.8460	.0512
2.80	2d5/2	.0035	2d5/2	.0065	.0052
	2d3/2	-.0039	2d3/2	-.0058	.0043
	2f7/2	.0010	2f7/2	.0021	.0002
	2f5/2	.0008	2f5/2	.0016	.0002
	2s1/2	-22.1624	2s1/2	-25.5962	.0639
2.85	2p3/2	48.6910	2p3/2	73.4618	.1550
	2p1/2	7.2013	2p1/2	10.2506	.0532
	2d5/2	.0038	2d5/2	.0070	.0055
	2d3/2	-.0041	2d3/2	-.0051	.0045
	2f7/2	.0011	2f7/2	.0022	.0003
2.90	2f5/2	.0008	2f5/2	.0017	.0002
	2s1/2	-22.3164	2s1/2	-23.9190	.0605
	2p3/2	36.3599	2p3/2	61.5825	.1450
	2p1/2	5.8494	2p1/2	8.6712	.0455
	2d5/2	.0026	2d5/2	.0052	.0044
2.95	2d3/2	-.0033	2d3/2	-.0051	.0036
	2f7/2	.0008	2f7/2	.0016	.0002
	2f5/2	.0006	2f5/2	.0012	.0002
	2s1/2	-20.7869	2s1/2	-24.3454	.0614
	2p3/2	39.3072	2p3/2	64.7009	.1508
3.00	2p1/2	6.1759	2p1/2	9.0561	.0475
	2d5/2	.0029	2d5/2	.0056	.0046
	2d3/2	-.0035	2d3/2	-.0053	.0038
	2f7/2	.0008	2f7/2	.0018	.0002
	2f5/2	.0006	2f5/2	.0013	.0002
3.05	2s1/2	-21.2512	2s1/2	-24.7670	.0622
	2p3/2	42.3582	2p3/2	67.7314	.1528
	2p1/2	6.5101	2p1/2	9.4478	.0494
	2d5/2	.0032	2d5/2	.0051	.0049
	2d3/2	-.0037	2d3/2	-.0056	.0041
3.10	2f7/2	.0009	2f7/2	.0019	.0002
	2f5/2	.0007	2f5/2	.0014	.0002
	2s1/2	-21.7097	2s1/2	-25.1839	.0631
	2p3/2	45.4936	2p3/2	70.6563	.1542
	2p1/2	6.8519	2p1/2	9.8460	.0512
3.15	2d5/2	.0035	2d5/2	.0065	.0052
	2d3/2	-.0039	2d3/2	-.0058	.0043
	2f7/2	.0010	2f7/2	.0021	.0002
	2f5/2	.0008	2f5/2	.0016	.0002
	2s1/2	-22.1624	2s1/2	-25.5962	.0639
3.20	2p3/2	48.6910	2p3/2	73.4618	.1550
	2p1/2	7.2013	2p1/2	10.2506	.0532
	2d5/2	.0038	2d5/2	.0070	.0055
	2d3/2	-.0041	2d3/2	-.0051	.0045
	2f7/2	.0011	2f7/2	.0022	.0003
3.25	2f5/2	.0008	2f5/2	.0017	.0002
	2s1/2	-22.3164	2s1/2	-23.9190	.0605
	2p3/2	36.3599	2p3/2	61.5825	.1450
	2p1/2	5.8494	2p1/2	8.6712	.0455
	2d5/2	.0026	2d5/2	.0052	.0044
3.30	2d3/2	-.0033	2d3/2	-.0051	.0036
	2f7/2	.0008	2f7/2	.0016	.0002
	2f5/2	.0006	2f5/2	.0012	.0002
	2s1/2	-20.7869	2s1/2	-24.3454	.0614
	2p3/2	39.3072	2p3/2	64.7009	.1508
3.35	2p1/2	6.1759	2p1/2	9.0561	.0475
	2d5/2	.0029	2d5/2	.0056	.0046
	2d3/2	-.0035	2d3/2	-.0053	.0038
	2f7/2	.0008	2f7/2	.0018	.0002
	2f5/2	.0006	2f5/2	.0013	.0002
3.40	2s1/2	-21.2512	2s1/2	-24.7670	.0622
	2p3/2	42.3582	2p3/2	67.7314	.1528
	2p1/2	6.5101	2p1/2	9.4478	.0494
	2d5/2	.0032	2d5/2	.0051	.0049
	2d3/2	-.0037	2d3/2	-.0056	.0041
3.45	2f7/2	.0009	2f7/2	.0019	.0002
	2f5/2	.0007	2f5/2	.0014	.0002
	2s1/2	-21.7097	2s1/2	-25.1839	.0631
	2p3/2	45.4936	2p3/2	70.6563	.1542
	2p1/2	6.8519	2p1/2	9.8460	.0512
3.50	2d5/2	.0035	2d5/2	.0065	.0052
	2d3/2	-.0039	2d3/2	-.0058	.0043
	2f7/2	.0010	2f7/2	.0021	.0002
	2f5/2	.0008	2f5/2	.0016	.0002
	2s1/2	-22.1624	2s1/2	-25.5962	.0639

Lab Energy (MeV)	Phase Shift	Standard Deviation (Degrees)
2.45		
2s1/2	-26.0040	.0647
2p3/2	76.1378	.1553
2p1/2	10.6615	.0551
2d5/2	.0075	.0058
2d3/2	-.0063	.0048
2f7/2	.0024	.0003
2f5/2	.0018	.0002
2.50		
2s1/2	-26.4075	.0654
2p3/2	-101.3221	.1551
2p1/2	11.0784	.0570
2d5/2	.0081	.0062
2d3/2	-.0066	.0051
2f7/2	.0026	.0003
2f5/2	.0020	.0003
2.55		
2s1/2	-26.8068	.0662
2p3/2	-98.9211	.1545
2p1/2	11.5012	.0589
2d5/2	.0086	.0065
2d3/2	-.0069	.0053
2f7/2	.0028	.0003
2f5/2	.0021	.0003
2.60		
2s1/2	-27.2020	.0670
2p3/2	-96.6595	.1536
2p1/2	11.9297	.0609
2d5/2	.0092	.0068
2d3/2	-.0071	.0056
2f7/2	.0030	.0004
2f5/2	.0023	.0003
2.65		
2s1/2	-27.5931	.0677
2p3/2	-94.5356	.1525
2p1/2	12.3637	.0628
2d5/2	.0098	.0072
2d3/2	-.0074	.0059
2f7/2	.0032	.0004
2f5/2	.0024	.0003
2.70		
2s1/2	-27.9833	.0684
2p3/2	-92.5458	.1512
2p1/2	12.8030	.0648
2d5/2	.0105	.0076
2d3/2	-.0076	.0062
2f7/2	.0035	.0004
2f5/2	.0026	.0003
2.75		
2s1/2	-28.3636	.0691
2p3/2	-90.6853	.1497
2p1/2	13.2475	.0667
2d5/2	.0112	.0079
2d3/2	-.0079	.0065
2f7/2	.0037	.0004
2f5/2	.0028	.0004
2.80		
2s1/2	-28.7433	.0698
2p3/2	-88.9481	.1482
2p1/2	13.6969	.0687
2d5/2	.0119	.0083
2d3/2	-.0081	.0069
2f7/2	.0040	.0005
2f5/2	.0030	.0004

Lab Energy (MeV)	Phase Shift	Standard Deviation (Degrees)
2.85		
2s1/2	-29.1192	.0705
2p3/2	-87.3281	.1466
2p1/2	14.1510	.0700
2d5/2	.0126	.0087
2d3/2	-.0083	.0072
2f7/2	.0043	.0005
2f5/2	.0032	.0004
2.90		
2s1/2	-29.4916	.0712
2p3/2	-85.8188	.1450
2p1/2	14.6095	.0725
2d5/2	.0134	.0091
2d3/2	-.0086	.0075
2f7/2	.0045	.0005
2f5/2	.0034	.0004
2.95		
2s1/2	-29.8605	.0719
2p3/2	-84.4129	.1434
2p1/2	15.0725	.0745
2d5/2	.0142	.0096
2d3/2	-.0088	.0079
2f7/2	.0048	.0006
2f5/2	.0036	.0005
3.00		
2s1/2	-30.2260	.0725
2p3/2	-83.1044	.1418
2p1/2	15.5395	.0764
2d5/2	.0150	.0100
2d3/2	-.0090	.0082
2f7/2	.0052	.0006
2f5/2	.0039	.0005
3.05		
2s1/2	-30.5881	.0732
2p3/2	-81.8367	.1403
2p1/2	16.0103	.0783
2d5/2	.0159	.0104
2d3/2	-.0093	.0086
2f7/2	.0055	.0006
2f5/2	.0041	.0005
3.10		
2s1/2	-30.9469	.0738
2p3/2	-80.7534	.1387
2p1/2	16.4847	.0802
2d5/2	.0168	.0109
2d3/2	-.0095	.0090
2f7/2	.0058	.0007
2f5/2	.0044	.0006
3.15		
2s1/2	-31.3026	.0744
2p3/2	-79.6938	.1373
2p1/2	16.9624	.0821
2d5/2	.0177	.0113
2d3/2	-.0097	.0093
2f7/2	.0062	.0007
2f5/2	.0046	.0006
3.20		
2s1/2	-31.6551	.0751
2p3/2	-78.7172	.1358
2p1/2	17.4433	.0839
2d5/2	.0187	.0118
2d3/2	-.0099	.0097
2f7/2	.0065	.0008
2f5/2	.0049	.0006

Lab Energy (MeV)	Phase Shift	Standard Deviation (Degrees)
3.25		
2s1/2	-32.0045	.0757
2p3/2	-77.0036	.1344
2p1/2	17.9272	.0658
2d5/2	.0197	.0123
2d3/2	-.0101	.0101
2f7/2	.0069	.0008
2f5/2	.0052	.0007
3.30		
2s1/2	-32.3509	.0763
2p3/2	-76.9529	.1331
2p1/2	18.4136	.0676
2d5/2	.0207	.0128
2d3/2	-.0103	.0105
2f7/2	.0073	.0009
2f5/2	.0055	.0007
3.35		
2s1/2	-32.6944	.0769
2p3/2	-76.1607	.1318
2p1/2	18.9025	.0695
2d5/2	.0218	.0133
2d3/2	-.0104	.0110
2f7/2	.0077	.0009
2f5/2	.0058	.0008
3.40		
2s1/2	-33.0350	.0774
2p3/2	-75.4228	.1306
2p1/2	19.3935	.0913
2d5/2	.0229	.0138
2d3/2	-.0106	.0114
2f7/2	.0082	.0010
2f5/2	.0061	.0008
3.45		
2s1/2	-33.3727	.0780
2p3/2	-74.7354	.1295
2p1/2	19.8865	.0931
2d5/2	.0241	.0144
2d3/2	-.0108	.0118
2f7/2	.0086	.0010
2f5/2	.0065	.0008
3.50		
2s1/2	-33.7077	.0786
2p3/2	-74.0947	.1283
2p1/2	20.3811	.0948
2d5/2	.0253	.0149
2d3/2	-.0109	.0123
2f7/2	.0091	.0011
2f5/2	.0068	.0009
3.55		
2s1/2	-34.0399	.0791
2p3/2	-73.4976	.1273
2p1/2	20.8772	.0966
2d5/2	.0266	.0155
2d3/2	-.0110	.0127
2f7/2	.0096	.0011
2f5/2	.0072	.0009
3.60		
2s1/2	-34.3695	.0797
2p3/2	-72.9409	.1263
2p1/2	21.3744	.0983
2d5/2	.0279	.0160
2d3/2	-.0112	.0132
2f7/2	.0101	.0012
2f5/2	.0076	.0010

Lab Energy (MeV)	Phase Shift	Standard Deviation (Degrees)
3.65		
2s1/2	-34.6364	.0803
2p3/2	-72.4220	.1253
2p1/2	21.8725	.1000
2d5/2	.0292	.0166
2d3/2	-.0113	.0137
2f7/2	.0105	.0012
2f5/2	.0080	.0010
3.70		
2s1/2	-35.0207	.0808
2p3/2	-71.9331	.1244
2p1/2	22.3714	.1017
2d5/2	.0306	.0172
2d3/2	-.0114	.0142
2f7/2	.0111	.0013
2f5/2	.0084	.0011
3.75		
2s1/2	-35.3425	.0813
2p3/2	-71.4368	.1236
2p1/2	22.8706	.1034
2d5/2	.0320	.0178
2d3/2	-.0114	.0146
2f7/2	.0117	.0014
2f5/2	.0088	.0011
3.80		
2s1/2	-35.6618	.0819
2p3/2	-71.0661	.1228
2p1/2	23.3701	.1050
2d5/2	.0335	.0184
2d3/2	-.0115	.0151
2f7/2	.0123	.0014
2f5/2	.0092	.0012
3.85		
2s1/2	-35.9787	.0824
2p3/2	-70.6738	.1220
2p1/2	23.8695	.1067
2d5/2	.0350	.0190
2d3/2	-.0116	.0157
2f7/2	.0129	.0015
2f5/2	.0097	.0013
3.90		
2s1/2	-36.2931	.0829
2p3/2	-70.3081	.1213
2p1/2	24.3686	.1083
2d5/2	.0365	.0196
2d3/2	-.0116	.0162
2f7/2	.0135	.0016
2f5/2	.0101	.0013
3.95		
2s1/2	-36.6052	.0834
2p3/2	-69.9673	.1206
2p1/2	24.8672	.1099
2d5/2	.0381	.0203
2d3/2	-.0116	.0167
2f7/2	.0141	.0016
2f5/2	.0106	.0014
4.00		
2s1/2	-36.9149	.0839
2p3/2	-69.6497	.1200
2p1/2	25.3650	.1115
2d5/2	.0398	.0209
2d3/2	-.0116	.0172
2f7/2	.0148	.0017
2f5/2	.0111	.0014

Lab Energy (MeV)	Phase Shift	Standard Deviation (Degrees)	Lab Energy (MeV)	Phase Shift	Standard Deviation (Degrees)
4.05			4.45		
2s1/2	-37.2224	.0844	2s1/2	-39.6040	.0863
2p3/2	-69.3539	.1194	2p3/2	-67.6265	.1160
2p1/2	25.8619	.1131	2p1/2	29.7751	.1252
2d3/2	.0415	.0216	2d3/2	.0571	.0274
2d3/2	-0.116	.0178	2d3/2	-.0108	.0225
2f7/2	.0155	.0018	2f7/2	.0217	.0025
2f5/2	.0116	.0015	2f5/2	.0163	.0021
4.10			4.50		
2s1/2	-37.5276	.0849	2s1/2	-39.8925	.0888
2p3/2	-69.0785	.1188	2p3/2	-67.4757	.1157
2p1/2	26.3575	.1146	2p1/2	30.2536	.1267
2d3/2	.0433	.0223	2d5/2	.0593	.0281
2d3/2	-.0115	.0183	2d3/2	-.0104	.0231
2f7/2	.0162	.0019	2f7/2	.0226	.0026
2f5/2	.0122	.0016	2f5/2	.0170	.0022
4.15			4.55		
2s1/2	-37.8306	.0854	2s1/2	-40.1789	.0893
2p3/2	-68.8222	.1183	2p3/2	-67.3366	.1155
2p1/2	26.8517	.1162	2p1/2	30.7290	.1282
2d3/2	.0451	.0230	2d5/2	.0615	.0289
2d3/2	-.0115	.0189	2d3/2	-.0102	.0238
2f7/2	.0169	.0020	2f7/2	.0236	.0028
2f5/2	.0127	.0016	2f5/2	.0177	.0023
4.20			4.60		
2s1/2	-38.1314	.0859	2s1/2	-40.4635	.0897
2p3/2	-68.5839	.1178	2p3/2	-67.2088	.1153
2p1/2	27.3443	.1177	2p1/2	31.2013	.1297
2d3/2	.0470	.0237	2d5/2	.0639	.0297
2d3/2	-.0114	.0195	2d3/2	-.0099	.0244
2f7/2	.0176	.0021	2f7/2	.0245	.0029
2f5/2	.0133	.0017	2f5/2	.0184	.0024
4.25			4.65		
2s1/2	-38.4301	.0864	2s1/2	-40.7461	.0902
2p3/2	-68.3625	.1174	2p3/2	-67.0914	.1151
2p1/2	27.8350	.1192	2p1/2	31.6703	.1312
2d3/2	.0489	.0244	2d5/2	.0662	.0305
2d3/2	-.0113	.0201	2d3/2	-.0096	.0251
2f7/2	.0184	.0021	2f7/2	.0255	.0030
2f5/2	.0138	.0018	2f5/2	.0191	.0025
4.30			4.70		
2s1/2	-38.7267	.0869	2s1/2	-41.0269	.0907
2p3/2	-68.1569	.1170	2p3/2	-66.9339	.1150
2p1/2	28.3236	.1207	2p1/2	32.1357	.1326
2d3/2	.0508	.0251	2d5/2	.0687	.0313
2d3/2	-.0112	.0207	2d3/2	-.0093	.0258
2f7/2	.0192	.0022	2f7/2	.0265	.0031
2f5/2	.0144	.0019	2f5/2	.0199	.0026
4.35			4.75		
2s1/2	-39.0212	.0874	2s1/2	-41.3058	.0911
2p3/2	-67.9653	.1166	2p3/2	-66.8859	.1149
2p1/2	28.6100	.1222	2p1/2	32.5976	.1341
2d3/2	.0529	.0259	2d5/2	.0712	.0322
2d3/2	-.0110	.0213	2d3/2	-.0089	.0264
2f7/2	.0200	.0023	2f7/2	.0275	.0032
2f5/2	.0150	.0020	2f5/2	.0205	.0027
4.40			4.80		
2s1/2	-39.3136	.0876	2s1/2	-41.5829	.0916
2p3/2	-67.7893	.1163	2p3/2	-66.7968	.1148
2p1/2	29.2939	.1237	2p1/2	33.0556	.1356
2d3/2	.0550	.0265	2d5/2	.0737	.0330
2d3/2	-.0108	.0219	2d3/2	-.0085	.0271
2f7/2	.0209	.0024	2f7/2	.0285	.0033
2f5/2	.0157	.0020	2f5/2	.0214	.0028

Lab Energy (MeV)	Phase Shift (Degrees)	Standard Deviation	Lab Energy (MeV)	Phase Shift (Degrees)	Standard Deviation	
4.05	2s1/2	-41.6582	.0921	2s1/2	-45.9208	.1051
	2p3/2	-56.7161	.1148	2p3/2	-66.6224	.1264
	2p1/2	33.5095	.1371	2p1/2	44.3099	.1654
	2d5/2	.0763	.0336	2d5/2	.1791	.0622
	2d3/2	- .0081	.0276	2d3/2	.0195	.0511
	2f7/2	.0296	.0035	2f7/2	.0727	.0055
2f5/2	.0222	.0029	2f5/2	.0546	.0071	
4.90	2s1/2	-42.1317	.0925	2s1/2	-50.0667	.1091
	2p3/2	-66.6434	.1143	2p3/2	-66.6542	.1310
	2p1/2	33.9599	.1337	2p1/2	45.6197	.1959
	2d5/2	.0790	.0347	2d5/2	.2042	.0652
	2d3/2	- .0076	.0285	2d3/2	.0264	.0560
	2f7/2	.0307	.0036	2f7/2	.0535	.0093
2f5/2	.0231	.0030	2f5/2	.0526	.0052	
4.95	2s1/2	-42.4035	.0930	2s1/2	-51.1021	.1124
	2p3/2	-66.5762	.1148	2p3/2	-67.1474	.1354
	2p1/2	34.4059	.1402	2p1/2	47.2060	.2080
	2d5/2	.0816	.0356	2d5/2	.2317	.0744
	2d3/2	- .0071	.0293	2d3/2	.0383	.0611
	2f7/2	.0319	.0037	2f7/2	.0952	.0112
2f5/2	.0239	.0031	2f5/2	.0714	.0093	
5.00	2s1/2	-42.6736	.0935	2s1/2	-52.2033	.1159
	2p3/2	-66.5203	.1149	2p3/2	-67.4637	.1425
	2p1/2	34.8476	.1417	2p1/2	43.4741	.2195
	2d5/2	.0846	.0365	2d5/2	.2616	.0509
	2d3/2	- .0066	.0300	2d3/2	.0505	.0654
	2f7/2	.0330	.0039	2f7/2	.1050	.0127
2f5/2	.0248	.0032	2f5/2	.0610	.0105	
5.25	2s1/2	-43.9956	.0951	2s1/2	-53.3265	.1197
	2p3/2	-66.3262	.1157	2p3/2	-67.6964	.1493
	2p1/2	36.9889	.1496	2p1/2	49.6300	.2313
	2d5/2	.0927	.0410	2d5/2	.2940	.0376
	2d3/2	- .0035	.0337	2d3/2	.0645	.0719
	2f7/2	.0393	.0046	2f7/2	.1220	.0144
2f5/2	.0295	.0035	2f5/2	.0915	.0120	
5.50	2s1/2	-45.2637	.0932	2s1/2	-54.3560	.1239
	2p3/2	-66.2650	.1172	2p3/2	-68.1699	.1568
	2p1/2	39.0107	.1580	2p1/2	50.6804	.2434
	2d5/2	.1166	.0459	2d5/2	.3291	.0946
	2d3/2	.0006	.0377	2d3/2	.0800	.0776
	2f7/2	.0463	.0054	2f7/2	.1372	.0162
2f5/2	.0348	.0045	2f5/2	.1028	.0134	
5.75	2s1/2	-46.5311	.1007	2s1/2	-55.3637	.1285
	2p3/2	-66.3077	.1195	2p3/2	-68.5493	.1651
	2p1/2	40.9064	.1669	2p1/2	51.6320	.2559
	2d5/2	.1354	.0511	2d5/2	.3670	.1019
	2d3/2	.0037	.0420	2d3/2	.0974	.0835
	2f7/2	.0542	.0064	2f7/2	.1536	.0181
2f5/2	.0407	.0053	2f5/2	.1151	.0151	
6.00	2s1/2	-47.7428	.1033	2s1/2	-56.3445	.1336
	2p3/2	-66.4425	.1226	2p3/2	-68.9427	.1740
	2p1/2	42.6729	.1763	2p1/2	52.4918	.2685
	2d5/2	.1562	.0565	2d5/2	.4077	.1093
	2d3/2	.0120	.0464	2d3/2	.1168	.0837
	2f7/2	.0630	.0074	2f7/2	.1713	.0302
2f5/2	.0473	.0062	2f5/2	.1233	.0165	

Lab Energy (MeV)	Phase Shift (Degrees)	Standard Deviation	Lab Energy (MeV)	Phase Shift (Degrees)	Standard Deviation
8.25			10.25		
2s1/2	-57.3015	.1391	2s1/2	-64.1776	.2027
2p3/2	-59.3451	.1836	2p3/2	-72.6770	.2026
2p1/2	53.2664	.2813	2p1/2	57.1115	.3910
2d5/2	.4515	.1171	2d5/2	.9220	.1667
2d3/2	.1384	.0950	2d3/2	.4018	.1529
2f7/2	.1904	.0225	2f7/2	.3935	.0473
2f5/2	.1426	.0187	2f5/2	.2963	.0390
3.50			10.50		
2s1/2	-55.2352	.1450	2s1/2	-64.9480	.2134
2p3/2	-69.7547	.1938	2p3/2	-73.0465	.2976
2p1/2	53.9623	.2914	2p1/2	57.3731	.4037
2d5/2	.4933	.1250	2d5/2	.9975	.1953
2d3/2	.1623	.1035	2d3/2	.4477	.1605
2f7/2	.2108	.0250	2f7/2	.4297	.0514
2f5/2	.1578	.0207	2f5/2	.3210	.0423
4.75			10.75		
2s1/2	-59.1466	.1515	2s1/2	-65.7031	.2248
2p3/2	-70.1692	.2047	2p3/2	-73.4062	.3132
2p1/2	54.5859	.3076	2p1/2	57.5935	.4207
2d5/2	.5484	.1332	2d5/2	1.0770	.2061
2d3/2	.1835	.1032	2d3/2	.4939	.1686
2f7/2	.2326	.0216	2f7/2	.4847	.0535
2f5/2	.1741	.0226	2f5/2	.3471	.0458
9.00			11.00		
2s1/2	-60.0361	.1586	2s1/2	-66.4343	.2369
2p3/2	-70.5869	.2161	2p3/2	-73.8993	.3294
2p1/2	55.1429	.3210	2p1/2	57.7943	.4350
2d5/2	.6018	.1446	2d5/2	1.1606	.2161
2d3/2	.2172	.1160	2d3/2	.5495	.1770
2f7/2	.2560	.0334	2f7/2	.5015	.0601
2f5/2	.1916	.0251	2f5/2	.3744	.0495
9.25			11.25		
2s1/2	-60.9046	.1652	2s1/2	-67.1558	.2497
2p3/2	-71.0063	.2282	2p3/2	-74.2232	.3401
2p1/2	55.6390	.3346	2p1/2	57.9600	.4516
2d5/2	.6536	.1502	2d5/2	1.2465	.2262
2d3/2	.2485	.1231	2d3/2	.6055	.1553
2f7/2	.2809	.0334	2f7/2	.5402	.0643
2f5/2	.2101	.0276	2f5/2	.4032	.0533
9.50			11.50		
2s1/2	-61.7524	.1744	2s1/2	-67.8496	.2633
2p3/2	-71.4260	.2409	2p3/2	-74.6316	.3634
2p1/2	56.0793	.3483	2p1/2	58.0935	.4676
2d5/2	.7189	.1590	2d5/2	1.3407	.2365
2d3/2	.2825	.1303	2d3/2	.6851	.1938
2f7/2	.3073	.0356	2f7/2	.5808	.0697
2f5/2	.2295	.0302	2f5/2	.4333	.0573
9.75			11.75		
2s1/2	-62.5802	.1832	2s1/2	-68.5320	.2776
2p3/2	-71.8450	.2542	2p3/2	-75.0795	.3613
2p1/2	56.4635	.3563	2p1/2	58.2155	.4340
2d5/2	.7828	.1680	2d5/2	1.4373	.2471
2d3/2	.3193	.1377	2d3/2	.7284	.2025
2f7/2	.3354	.0399	2f7/2	.6233	.0750
2f5/2	.2503	.0330	2f5/2	.4649	.0616
10.00			12.00		
2s1/2	-63.3885	.1936	2s1/2	-69.1973	.2926
2p3/2	-72.2623	.2661	2p3/2	-75.4616	.3997
2p1/2	56.8112	.3765	2p1/2	58.3101	.5007
2d5/2	.8505	.1772	2d5/2	1.5385	.2578
2d3/2	.3590	.1412	2d3/2	.7955	.2112
2f7/2	.3651	.0435	2f7/2	.6876	.0804
2f5/2	.2723	.0339	2f5/2	.4980	.0660

Lab Energy (MeV)	Phase Shift (Degrees)	Standard Deviation	Lab Energy (MeV)	Phase Shift (Degrees)	Standard Deviation
12.25	2s1/2	-69.0460	14.25	2s1/2	-74.4614
	2p3/2	-75.3377	2p3/2	2p3/2	-70.6559
	2p1/2	58.3656	2p1/2	2p1/2	58.5116
	2d3/2	1.6442	2d3/2	2d3/2	2.6656
	2d5/2	.8665	2d5/2	2d5/2	1.5666
	2f7/2	.7144	2f7/2	2f7/2	1.1635
	2f5/2	.5325	2f5/2	2f5/2	.8650
12.50	2s1/2	-70.4763	14.50	2s1/2	-74.9600
	2p3/2	-76.2075	2p3/2	2p3/2	-78.9241
	2p1/2	50.4440	2p1/2	2p1/2	50.4591
	2d3/2	1.7546	2d3/2	2d3/2	2.8163
	2d5/2	.9415	2d5/2	2d5/2	1.6971
	2f7/2	.7630	2f7/2	2f7/2	1.2296
	2f5/2	.5686	2f5/2	2f5/2	.9139
12.75	2s1/2	-71.0945	14.75	2s1/2	-75.4611
	2p3/2	-76.5709	2p3/2	2p3/2	-79.2321
	2p1/2	50.4371	2p1/2	2p1/2	58.4620
	2d3/2	1.8693	2d3/2	2d3/2	2.9724
	2d5/2	1.0206	2d5/2	2d5/2	1.8124
	2f7/2	.9137	2f7/2	2f7/2	1.2331
	2f5/2	.6052	2f5/2	2f5/2	.9644
13.00	2s1/2	-71.6947	15.00	2s1/2	-75.9385
	2p3/2	-76.9277	2p3/2	2p3/2	-79.5329
	2p1/2	58.5165	2p1/2	2p1/2	58.4314
	2d3/2	1.9899	2d3/2	2d3/2	3.1336
	2d5/2	1.1038	2d5/2	2d5/2	1.9327
	2f7/2	.8655	2f7/2	2f7/2	1.3659
	2f5/2	.6453	2f5/2	2f5/2	1.0167
13.25	2s1/2	-72.2791	15.25	2s1/2	-76.4009
	2p3/2	-77.2778	2p3/2	2p3/2	-79.8266
	2p1/2	58.5340	2p1/2	2p1/2	58.3981
	2d3/2	2.1148	2d3/2	2d3/2	3.3008
	2d5/2	1.1914	2d5/2	2d5/2	2.0579
	2f7/2	.9215	2f7/2	2f7/2	1.4421
	2f5/2	.6860	2f5/2	2f5/2	1.0707
13.50	2s1/2	-72.6478	15.50	2s1/2	-76.8485
	2p3/2	-77.6210	2p3/2	2p3/2	-80.1131
	2p1/2	58.5403	2p1/2	2p1/2	58.3630
	2d3/2	2.2448	2d3/2	2d3/2	3.4732
	2d5/2	1.2834	2d5/2	2d5/2	2.1883
	2f7/2	.9785	2f7/2	2f7/2	1.5176
	2f5/2	.7283	2f5/2	2f5/2	1.1264
13.75	2s1/2	-73.4010	15.75	2s1/2	-77.2813
	2p3/2	-77.9574	2p3/2	2p3/2	-80.3923
	2p1/2	58.5386	2p1/2	2p1/2	58.3269
	2d3/2	2.3799	2d3/2	2d3/2	3.6511
	2d5/2	1.3799	2d5/2	2d5/2	2.3238
	2f7/2	1.0360	2f7/2	2f7/2	1.5956
	2f5/2	.7722	2f5/2	2f5/2	1.1838
14.00	2s1/2	-73.9388	16.00	2s1/2	-77.6935
	2p3/2	-78.2867	2p3/2	2p3/2	-80.6644
	2p1/2	58.5285	2p1/2	2p1/2	58.2907
	2d3/2	2.5201	2d3/2	2d3/2	3.8347
	2d5/2	1.4809	2d5/2	2d5/2	2.4645
	2f7/2	1.0995	2f7/2	2f7/2	1.6759
	2f5/2	.8178	2f5/2	2f5/2	1.2430

Lab Energy (MeV)		Phase Shift	Standard Deviation (Degrees)
16.25	2s1/2	-78.1029	.6814
	2p3/2	-80.9293	.7978
	2p1/2	58.2549	.8748
	2d5/2	4.0238	.4690
	2d3/2	2.6105	.3854
	2f7/2	1.7557	.2166
	2f5/2	1.3039	.1757
16.50	2s1/2	-78.4917	.7132
	2p3/2	-81.1871	.8261
	2p1/2	58.2203	.9038
	2d5/2	4.2186	.4836
	2d3/2	2.7619	.3974
	2f7/2	1.6439	.2274
	2f5/2	1.3666	.1843
16.75	2s1/2	-78.8659	.7462
	2p3/2	-81.4378	.8549
	2p1/2	58.1876	.9337
	2d5/2	4.4191	.4934
	2d3/2	2.9188	.4097
	2f7/2	1.9315	.2386
	2f5/2	1.4311	.1932
17.00	2s1/2	-79.2255	.7803
	2p3/2	-81.6814	.8843
	2p1/2	58.1574	.9646
	2d5/2	4.6252	.5136
	2d3/2	3.0311	.4223
	2f7/2	2.0216	.2500
	2f5/2	1.4973	.2023