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DAMAGE PROBABILITIES FOR SMALL-CEP, LOW-YIELD,
AIRBURST/GROUNDBURST ATTACKS AGAINST SELECTED PVN
AND QVN POINT TARGETS

D. C. Kephart, et al

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Low-Yield, Airburst/Groundburst
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D. C. Kephart and M. J. Parise

A Report prepared for
UNITED STATES AIR FORCE PROJECT RAND

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Presents computed tables showing the single-shot probability of damage to a target as a function of yield and CEP, for a weapon bursting either at ground level or at an altitude that approximately maximizes the probability of blast damage. The tables cover 28 P-type and 12 Q-type targets of current military interest. Additional spot calculations involving yields, CEPs, and vulnerability numbers not listed in this report can be made using Rand's circular slide rule calculator R-1380-PR. See also R-1168, R-1168/1. (PB)

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Damage Probabilities for Small-CEP,
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UNITED STATES AIR FORCE PROJECT RAND

Rand
SANTA MONICA, CA. 90406

PREFACE

This report is a companion volume to Rand reports R-1168-PR^{*} and R-1168/1-PR,^{*} which together present tables of single-shot "optimal" airburst damage probabilities as a function of delivery CEP and yield for 150 selected P-type (PVN) and Q-type (QVN) military targets. It was prepared under Project RAND in response to requests by Air Force officers and agencies for additional computed tables estimating the outcomes of attacks using small CEPs and small nuclear weapon yields, both airburst and groundburst, against certain overpressure-sensitive PVN point targets and dynamic-pressure-sensitive QVN point targets.

The damage probability tables given here cover 28 PVNs and 12 QVNs of current military interest. Additional spot calculations involving yields, CEPs, and vulnerability numbers not listed here can be made using Rand's circular slide rule calculator R-1380-PR,^{*} which is available to users of this report.

This work was conducted under the Rand project entitled "Future Strategic Aerospace Force Requirements."

^{*}R-1168-PR, *Some Aids for Estimating Damage Probabilities in Attacks Against Targets with P and Q Vulnerability Numbers*, D. C. Kephart, March 1973; R-1168/1-PR, *Some Aids for Estimating Damage Probabilities in Attacks Against Targets with P and Q Vulnerability Numbers: Supplementary Tables for Point Targets*, D. C. Kephart, November 1973; R-1380-PR, *Damage Probability Computer for Point Targets with P and Q Vulnerability Numbers*, D. C. Kephart, February 1974.

DAMAGE PROBABILITIES FOR SMALL-CEP, LOW-YIELD, AIRBURST/GROUNDBURST
ATTACKS AGAINST SELECTED PVN AND QVN POINT TARGETS

This report presents computed tables showing single-shot probability of damage (PD) to a point target as a function of yield and CEP, for a weapon bursting either at ground level or at an altitude that approximately maximizes the probability of blast damage, for a selection of PVN and QVN vulnerability numbers of current military interest. Damage probabilities are tabulated for yields in steps from 1 ton to 70 KT, with CEPs in steps from 0 to 600 ft. Definitions, assumptions, and mathematical bases for the damage tables are as detailed in Rand report R-1168-PR and in *Physical Vulnerability Handbook--Nuclear Weapons* (U), Defense Intelligence Agency, AF-550-1-2-69-INT, 1 June 1969 (Confidential).

The quantities listed in the computer printout PD tables are identified below:

VN = vulnerability number; arbitrary classification of a target's susceptibility to blast damage (as defined in R-1168-PR and in the DIA's *Physical Vulnerability Handbook--Nuclear Weapons*).

KT = warhead yield, kilotons.

Adj VN = adjusted VN, to account for yield-dependent damage response.

psi = peak overpressure (for PVNs), or peak dynamic pressure (for QVNs) at the weapon radius, lb/sq in.

HOB = weapon height of burst, ft (airburst values for HOB > 0 are associated with "maximum" probability of damage).

WR = weapon radius, ft.

CEP = circular probable error weapon delivery accuracy, ft.

PD = single-shot probability of damage.

For target VNs and yield-CEP combinations not listed here or in R-1168-PR, an interactive computing program is available (as described

in R-1168-PR) for calculating additional PD tables via remote interactive coupling to Rand's JOSS[®] computer. The computing program also calculates discrete sets of airburst and groundburst damage probabilities for both point targets and circular area targets with an offset aim point option for any yield-CEP combination, for both PVNs and QVNs.

For those wishing to translate to other computing languages a listing of the JOSS program is included in this report as Appendix A, and a summary of the JOSS language is presented as Appendix B. Attention is invited to parts 37 and 38 in the program where the equations fitting weapon radius to the adjusted vulnerability number are revised slightly to smooth out minor discontinuities associated with those listed in R-1168-PR.

The 1974 revisions to DIA's *Physical Vulnerability Handbook--Nuclear Weapons* do not affect the results for PVNs (sigma-20) and QVNs (sigma-30) given here and in the previous Rand publications. Concerning the accuracy of results--while the calculated damage probabilities are printed in three significant figures as an aid to curve-plotting and to show incremental trends, it should be recognized that actual outcomes might be greatly perturbed, perhaps as much as 25 percent, by uncertainties in bomb yield, delivery accuracy, height-of-burst, target location, target response, and target vulnerability number. These uncertainties, which are not accounted for here, may not ever be predictable, with high confidence, in advance of a conflict involving nuclear weapons.

The vulnerability numbers for which PD tables are presented, either here, or in R-1168-PR, or in R-1168/1-PR, are indexed on the following page. In R-1168-PR and R-1168/1-PR the PD tables are for airbursting on point targets with yields varying from 20 KT to 12 MT or 25 MT, with CEPs varying from 200 ft or 400 ft to 10,000 ft. In this report the PD tables are for both airbursting and groundbursting on point targets with yields varying from 1 ton to 70 KT and with CEPs varying from 0 to 600 ft.

PVN									
VN	K-factor								
	0	1	2	3	4	5	6	7	8
0									
1									
2									
3									
4									
5									
6									
7									
8									
9									
10	●								
11	●								
12	●	●							
13	●		●						
14									
15									
16									
17									
18									
19									
20									
21	●								
22	●								
23									
24									
25									
26									
27									
28									
29	●								
30	●								
31		●							
32			●						
33				●					
34									●
35		●							
36									
37									
38		●							
39	●			●					
40									
41									
42									
43									
44									
45									
46									
47									
48									
49									●
50									
51									
52									
53									
54									
55									
56									
57									

QVN									
VN	K-factor								
	0	1	2	3	4	5	6	7	8
0									
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

● DAMAGE PROBABILITY
TABLES IN THIS
REPORT

PVN									
VN	K-factor								
	0	1	2	3	4	5	6	7	8
0									
1									
2									
3									
4									
5									
6	△								
7	△								
8	△								
9	△								
10	△								
11	△	△							
12	△	△							
13	△	△							
14	△	△							
15	△	△							
16	△	△							
17	△	△							
18	△	△							
19	△	△							
20	△	△							
21	△	△							
22	△	△							
23	△	△							
24	△	△							
25	△	△							
26	△	△							
27	△	△							
28	△	△							
29	△	△							
30	△	△							
31	△	△							
32	△	△							
33	△	△							
34	△	△							
35	△	△							
36	△	△							
37	△	△							
38	△	△							
39	△	△							
40	△	△							
41	△	△							
42	△	△							
43	△	△							
44	△	△							
45	△	△							
46	△	△							
47	△	△							
48	△	△							
49	△	△							
50	△	△							
51	△	△							
52	△	△							
53	△	△							
54	△	△							
55	△	△							
56	△	△							
57	△	△							

QVN									
VN	K-factor								
	0	1	2	3	4	5	6	7	8
0									
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

● R-1168-PR
△ R-1168/1-PR

INDICES OF DAMAGE PROBABILITY TABLES

IIP0

Ground-burst

Air-burst

11P0

KT .001 .002 .005 .007 .010 .020 .05 .07 .10 .20 .500 .700 1.000 2.000 5.000 7.000 10.00 20.00 50.00 70.00
Adj VN 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0
Pd 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
WR 114 144 195 215 245 310 421 471 530 660 907 1014 1142 1406 1924 2155 2401 3101 4209 4708
CEP PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD

30 .994 .999
40 .980 .995 .999
50 .960 .980 .997 .998 .999
75 .759 .980 .987 .982 .991 .998
100 .570 .724 .887 .927 .957 .987 .998 .999
125 .425 .575 .775 .837 .891 .938 .982 .994 .998
150 .323 .455 .659 .732 .803 .909 .978 .988 .994 .999
200 .109 .295 .466 .540 .620 .770 .915 .967 .970 .992 .999 .999
250 .133 .262 .336 .398 .471 .626 .817 .872 .918 .971 .995 .997 .999
300 .095 .146 .250 .300 .362 .503 .708 .777 .842 .933 .985 .992 .996 .999
350 .071 .110 .191 .232 .284 .406 .605 .680 .756 .878 .966 .981 .990 .998
400 .055 .085 .151 .184 .227 .332 .515 .590 .670 .813 .937 .963 .980 .995 .999
450 .044 .068 .121 .149 .185 .274 .439 .511 .591 .744 .899 .936 .963 .989 .998 .999
500 .035 .056 .100 .123 .153 .230 .377 .443 .520 .676 .855 .902 .940 .980 .997 .998 .999
600 .025 .039 .070 .108 .147 .283 .338 .405 .553 .755 .819 .877 .931 .990 .995 .998 .999

IIP0

KT .001 .002 .005 .007 .010 .020 .05 .07 .10 .20 .500 .700 1.000 2.000 5.000 7.000 10.00 20.00 50.00 70.00
Adj VN 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0
Pd 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
WR 79 100 135 151 170 214 291 325 367 467 627 701 790 995 1350 1511 1702 2144 2910 3255
164 206 240 313 353 444 603 674 760 957 1299 1453 1636 2062 2798 3130 3523 4442 6028 6744
CEP PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD

30 .998 .999
40 .981 .998
50 .926 .975 .996 .998 .999
75 .926 .975 .996 .998 .999
100 .801 .908 .977 .988 .994 .999
125 .682 .806 .934 .960 .978 .994 .999
150 .519 .694 .864 .912 .947 .981 .997 .999
200 .361 .501 .706 .776 .841 .932 .985 .992 .996 .997
250 .253 .355 .556 .612 .711 .845 .953 .972 .985 .996 .999
300 .184 .271 .437 .509 .599 .742 .898 .953 .962 .985 .998 .999
350 .139 .210 .344 .412 .486 .641 .879 .942 .975 .974 .996 .998 .999
400 .109 .166 .281 .317 .403 .551 .753 .818 .875 .951 .990 .995 .998 .999
450 .087 .134 .231 .274 .337 .473 .677 .744 .818 .918 .981 .990 .995 .998 .999
500 .071 .110 .192 .233 .285 .408 .606 .682 .759 .879 .967 .981 .991 .994 .998 .999
600 .050 .078 .138 .170 .209 .308 .484 .559 .639 .767 .924 .953 .974 .993 .998 .999

12P1

Ground-burst

	KI	.001	.002	.005	.007	.010	.020	.05	.07	.10	.70	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
adj VN	21	22.1	19.8	19.0	18.3	17.0	15.6	15.2	16.8	14.1	13.4	13.2	13.0	12.7	12.3	12.2	12.1	12.0	11.8	11.8	11.8
p+I	91	63	41	36	31	25	18	17	15	13	12	12	11	11	10	10	10	10	10	10	10
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VR	37	54	69	106	127	178	273	317	370	467	13	820	941	1223	1713	1534	2198	2810	3871	4350	4350
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																					
5																					
10	.995																				
15	.957	.995																			
20	.864	.973	.999																		
30	.622	.853	.984	.994	.998																
40	.432	.685	.913	.970	.989	.999															
50	.308	.535	.847	.917	.983	.994															
75	.153	.297	.597	.713	.819	.949	.995	.998	.999												
100	.090	.182	.410	.320	.841	.846	.974	.989	.993	.999											
125	.059	.131	.291	.381	.491	.718	.927	.963	.983	.987											
150	.041	.086	.214	.286	.379	.558	.856	.916	.958	.991	.999										
200	.023	.049	.128	.174	.239	.409	.689	.783	.864	.959	.995	.998	.999								
250	.015	.032	.084	.116	.161	.290	.539	.641	.743	.894	.980	.991	.994	.999							
300	.010	.022	.059	.082	.115	.213	.422	.518	.623	.808	.951	.974	.988	.998							
350	.008	.016	.044	.061	.086	.162	.335	.420	.519	.715	.907	.946	.972	.994	.999						
400	.006	.013	.034	.047	.067	.127	.270	.344	.433	.628	.850	.906	.947	.986	.998	.999					
450	.005	.010	.027	.038	.053	.102	.221	.285	.364	.546	.788	.857	.913	.974	.998	.999					
500	.004	.008	.022	.031	.043	.084	.184	.239	.309	.477	.724	.803	.872	.956	.993	.997	.998				
600	.003	.006	.015	.021	.030	.058	.132	.174	.228	.357	.602	.691	.777	.904	.980	.990	.995	.999			

Air-burst

KT	20.1	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adel VN	44.1	22.1	19.8	19.0	18.3	17.0	15.6	15.2	14.1	13.4	13.2	13.0	12.7	12.3	12.2	12.1	12.0	11.8	11.6	
pal	91	63	41	36	31	25	19	18	17	15	13	12	12	11	11	10	10	10	10	
MOB	17	26	49	62	78	117	186	218	257	346	503	573	658	854	1193	1346	1529	1851	2684	3014
WR	39	57	95	116	144	212	342	403	477	654	966	1109	1290	1676	2371	2684	3058	3925	5427	6106
CCP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.397																			
10	.869	.996																		
15	.991	.978	.999																	
20																				
30	.665	.872	.988	.997	.999															
40	.472	.713	.948	.981	.995															
50	.341	.563	.874	.944	.980	.998														
75	.172	.318	.637	.770	.879	.979	.999													
100	.101	.196	.446	.582	.723	.918	.993	.997	.999											
125	.066	.131	.319	.436	.574	.822	.974	.990	.996	.999										
150	.047	.093	.236	.332	.454	.714	.939	.972	.989	.998										
200	.027	.054	.142	.206	.294	.521	.825	.900	.950	.990	.999									
250	.017	.035	.094	.138	.201	.362	.691	.793	.878	.968	.987	.999	.999							
300	.012	.024	.066	.108	.145	.247	.568	.680	.786	.926	.940	.995	.998							
350	.009	.018	.049	.073	.109	.221	.467	.576	.689	.868	.976	.989	.995	.999						
400	.007	.014	.038	.057	.085	.175	.385	.487	.600	.801	.953	.976	.989	.998						
450	.005	.011	.030	.045	.068	.142	.322	.413	.520	.730	.922	.957	.979	.996	.999					
500	.004	.009	.024	.037	.055	.117	.271	.353	.452	.661	.883	.931	.964	.992	.999					
550	.003	.006	.017	.026	.039	.083	.198	.263	.346	.538	.792	.863	.919	.977	.997	.998	.999			
600	.004	.008	.017	.026	.039	.083	.198	.263	.346	.538	.792	.863	.919	.977	.997	.998	.999			

12P1

12P2

Ground-burst

Air-burst

12P2

KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj VN	30.8	28.5	25.4	24.4	23.3	21.3	19.0	18.3	17.5	16.2	14.9	14.5	14.1	13.4	12.7	12.5	12.3	12.0	11.7	11.6
psl	310	201	116	96	79	55	36	31	27	22	17	16	15	13	11	11	11	10	9	8
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	23	34	57	69	85	124	204	243	281	409	627	728	851	1141	1652	1885	2163	2810	3936	4445
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
C	.999																			
S	.941	.992																		
10	.784	.938	.996	.999																
15	.574	.823	.980	.993	.998															
20																				
30	.326	.565	.877	.942	.978	.998														
40	.202	.383	.720	.831	.916	.987	.999													
50	.135	.269	.571	.699	.819	.958	.998	.999												
75	.063	.132	.324	.431	.561	.807	.974	.990	.997											
100	.036	.077	.200	.276	.379	.625	.904	.954	.981	.998										
125	.021	.050	.134	.189	.266	.476	.800	.885	.944	.990	.999									
150	.016	.035	.095	.136	.195	.366	.687	.785	.884	.974	.998	.999								
200	.009	.020	.055	.079	.115	.230	.484	.611	.730	.805	.988	.995	.998							
250	.006	.013	.036	.052	.076	.155	.359	.462	.582	.681	.960	.982	.992	.999						
300	.004	.009	.025	.036	.053	.111	.268	.354	.461	.661	.912	.954	.979	.986						
350	.003	.007	.018	.027	.040	.083	.206	.277	.369	.58	.848	.911	.954	.990	.999					
400	.002	.005	.014	.021	.030	.064	.163	.221	.299	.495	.776	.856	.919	.979	.998	.999				
450	.002	.004	.011	.016	.024	.051	.131	.180	.246	.474	.703	.795	.874	.963	.995	.998	.999			
500	.001	.003	.009	.013	.020	.042	.108	.149	.205	.460	.633	.732	.823	.939	.991	.996	.998			
600	.001	.002	.006	.009	.014	.029	.077	.106	.144	.269	.510	.611	.715	.876	.975	.988	.995	.999		
KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj VN	30.8	28.5	25.4	24.4	23.3	21.3	19.0	18.3	17.5	16.2	14.9	14.5	14.1	13.4	12.7	12.5	12.3	12.0	11.7	11.6
psl	310	201	116	96	79	55	36	31	27	22	17	16	15	13	11	11	11	10	9	8
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	10	15	25	31	39	64	120	150	196	274	433	506	593	738	1151	1314	1506	1951	2724	3072
25	37	62	74	99	128	224	275	319	501		604	948	1121	1533	2284	2537	2996	3925	5542	6274
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
S	.999																			
10	.963	.996																		
15	.920	.959	.999	.999																
20	.841	.868	.987	.995	.999															
30	.379	.624	.907	.957	.984	.998														
40	.219	.438	.767	.863	.934	.989														
50	.161	.313	.622	.741	.848	.964	.999													
75	.076	.156	.364	.472	.599	.925	.984	.995	.999											
100	.044	.091	.229	.309	.412	.649	.934	.975	.992	.999										
125	.038	.060	.153	.212	.292	.498	.848	.929	.973	.997										
150	.020	.042	.110	.153	.214	.385	.746	.854	.937	.992										
200	.011	.024	.063	.099	.129	.243	.555	.694	.821	.980	.997	.999								
250	.007	.015	.041	.059	.084	.164	.412	.544	.686	.897	.990	.996	.999							
300	.005	.011	.029	.041	.059	.119	.312	.426	.563	.812	.972	.998	.996	.999						
350	.004	.014	.021	.030	.044	.088	.242	.338	.461	.720	.941	.973	.983	.996						
400	.003	.006	.016	.023	.034	.064	.192	.273	.391	.632	.899	.949	.977	.996						
450	.002	.005	.013	.019	.027	.054	.155	.224	.317	.552	.848	.915	.952	.991	.999					
500	.002	.004	.010	.015	.022	.044	.128	.186	.267	.482	.792	.875	.934	.986	.999	.999				
600	.001	.003	.007	.010	.015	.031	.091	.134	.196	.372	.678	.781	.868	.964	.996	.999	.999			

12P2

Air-burst

13P0

19P2

Ground-burst

Air-burst

19P2

KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj VN	37.8	35.5	32.4	31.4	30.3	28.3	26.0	25.3	24.5	23.2	21.9	21.5	21.1	20.4	19.7	19.5	19.3	19.0	18.7	18.6
psi	1111	720	416	343	282	196	129	112	98	78	60	56	52	44	41	39	38	36	34	33
HOE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	15	22	35	42	51	74	118	140	166	231	348	402	467	619	896	1018	1164	1504	2095	2362
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.985	.998																		
10	.757	.926	.994	.998	.999															
15	.488	.730	.948	.979	.993	.998														
20	.320	.538	.844	.918	.965	.993														
30	.160	.299	.593	.713	.825	.957	.997	.998												
40	.094	.183	.407	.520	.649	.864	.983	.994	.998											
50	.061	.122	.288	.381	.498	.741	.948	.977	.991	.999										
75	.028	.057	.142	.196	.271	.473	.780	.866	.932	.986	.989									
100	.016	.032	.083	.116	.165	.308	.594	.706	.811	.942	.983	.997	.999							
125	.010	.021	.054	.076	.109	.212	.447	.556	.673	.863	.977	.989	.996	.999						
150	.007	.015	.038	.054	.077	.153	.341	.437	.550	.785	.943	.971	.987	.998						
200	.004	.008	.022	.031	.044	.090	.212	.281	.370	.577	.824	.908	.945	.987	.998	.999				
250	.003	.005	.014	.020	.029	.059	.142	.192	.259	.431	.702	.791	.868	.936	.997	.999				
300	.002	.004	.010	.014	.020	.041	.101	.138	.189	.328	.579	.677	.772	.908	.984	.992	.99	.999		
350	.001	.003	.007	.010	.015	.030	.076	.104	.143	.255	.477	.573	.674	.843	.984	.982	.991	.998		
400	.001	.002	.005	.008	.011	.023	.059	.081	.112	.203	.385	.484	.584	.769	.934	.983	.982	.996	.999	
450	.001	.002	.004	.006	.009	.019	.047	.064	.090	.164	.330	.411	.505	.695	.895	.937	.946	.992	.999	.999
500	.001	.001	.003	.005	.007	.015	.038	.053	.073	.136	.278	.351	.438	.635	.849	.903	.944	.985	.998	.999
600	.001	.002	.003	.005	.010	.027	.037	.052	.097		.204	.261	.333	.502	.747	.821	.885	.960	.994	.997
KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj VN	37.8	35.5	32.4	31.4	30.3	28.3	26.0	25.3	24.5	23.2	21.9	21.5	21.1	20.4	19.7	19.5	19.3	19.0	18.7	18.6
psi	1111	720	416	343	282	196	129	112	98	78	60	56	52	44	41	39	38	36	34	33
HOE	9	10	16	19	23	32	52	62	74	107	172	204	245	348	497	573	669	883	1259	1627
WR	16	24	39	47	57	81	128	151	178	244	362	415	481	632	952	1092	1260	1630	2331	2638
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
5	.989	.999																		
10	.791	.944	.997	.999																
15	.527	.780	.967	.998	.996															
20	.351	.593	.987	.946	.979	.997														
30	.179	.441	.658	.774	.873	.973	.998	.999												
40	.105	.212	.466	.586	.713	.902	.987	.996	.999											
50	.067	.142	.336	.440	.564	.797	.964	.985	.994	.999										
75	.031	.066	.169	.232	.318	.533	.825	.898	.949	.990	.999									
100	.018	.038	.100	.139	.196	.356	.647	.752	.846	.955	.995	.998	.999							
125	.011	.024	.065	.092	.131	.248	.497	.606	.717	.887	.981	.991	.996	.999						
150	.008	.017	.046	.065	.093	.181	.385	.484	.596	.737	.953	.976	.999	.999						
200	.004	.010	.026	.037	.054	.107	.243	.317	.409	.614	.853	.911	.952	.988	.999					
250	.003	.006	.017	.024	.035	.070	.164	.218	.289	.465	.727	.810	.881	.962	.986	.998	.999			
300	.002	.004	.012	.017	.024	.043	.118	.159	.213	.357	.606	.700	.789	.915	.989	.995	.998			
350	.001	.003	.009	.012	.018	.036	.088	.119	.162	.279	.503	.596	.694	.853	.974	.986	.995	.999		
400	.001	.002	.007	.009	.014	.029	.069	.093	.127	.223	.418	.507	.604	.782	.950	.974	.988	.998		
450	.001	.002	.005	.007	.011	.022	.054	.074	.102	.181	.351	.432	.525	.709	.917	.954	.977	.995	.999	.999
500	.001	.002	.004	.006	.009	.014	.044	.061	.084	.150	.297	.370	.456	.639	.877	.927	.961	.991	.999	.999
600	.001	.003	.004	.006	.013	.031	.043	.059	.107		.219	.277	.349	.516	.784	.856	.914	.975	.997	.998

19P2

Air-burst

21P0

22P 0

Ground-burst

22PD																					
KT	.001	.002	.005	.007	.01C	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00	
Adj VN	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
psi	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
MOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	43	55	74	83	93	118	160	179	201	234	344	385	434	544	742	830	934	1177	1598	1787	
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																					
5																					
10	.998																				
15	.981	.995	.999																		
20	.925	.974	.996	.998	.999																
30	.727	.857	.958	.976	.987	.997															
40	.535	.690	.863	.910	.945	.983	.997	.999													
50	.394	.540	.743	.809	.868	.947	.989	.994	.997	.999											
75	.203	.300	.474	.548	.628	.777	.919	.950	.972	.992	.999	.999									
100	.121	.184	.309	.368	.438	.580	.768	.842	.895	.943	.993	.995	.998								
125	.080	.123	.213	.258	.313	.443	.646	.720	.792	.902	.975	.987	.993	.998							
150	.056	.087	.154	.188	.231	.338	.523	.598	.679	.819	.941	.965	.981	.995	.999						
200	.032	.050	.090	.111	.139	.210	.348	.411	.486	.611	.828	.881	.925	.974	.996	.998					
250	.021	.032	.059	.073	.092	.141	.242	.291	.352	.491	.695	.764	.833	.931	.994	.999					
300	.014	.023	.041	.051	.065	.100	.176	.214	.262	.379	.573	.649	.727	.857	.958	.976	.987	.997			
350	.011	.017	.031	.038	.048	.075	.133	.163	.202	.298	.471	.544	.625	.774	.917	.948	.971	.992	.999	.999	
400	.008	.013	.023	.029	.037	.058	.104	.128	.159	.239	.389	.457	.535	.690	.863	.910	.945	.983	.997	.999	
450	.006	.010	.019	.023	.029	.046	.083	.103	.128	.193	.325	.386	.458	.611	.803	.862	.910	.968	.994	.997	
500	.005	.008	.015	.019	.024	.038	.068	.084	.103	.161	.274	.328	.394	.540	.743	.809	.868	.947	.989	.994	
600	.004	.006	.011	.013	.017	.026	.048	.059	.075	.115	.201	.244	.297	.423	.623	.698	.773	.889	.971	.994	
KT	.011	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00	
Adj VN	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
psi	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
MOB	21	27	37	41	46	58	78	88	99	124	169	189	213	284	384	407	458	577	744	977	
WR	45	57	77	86	97	123	166	186	210	264	359	401	452	564	773	864	973	1227	1665	1862	
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD

Air-burst

KT	311	302	005	307	010	020	05	07	17	20	500	700	1,000	2,000	5,000	7,000	10,00	20,00	50,00	70,00
Alj VN	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
psi	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
HOU	21	27	31	41	46	58	78	88	99	124	189	199	213	268	384	407	458	577	744	877
HR	45	57	77	86	97	123	166	186	210	264	359	401	452	549	773	864	973	1227	1665	1862
CLP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
n																				
5	309																			
10	309																			
15	985	906	999																	
20	937	978	997	998	999						999	995	997	999						
70	753	875	965	981	990	998														
40	562	717	993	924	955	986	998	999	999											
50	418	568	768	831	896	956	991	996	998	999										
75	219	321	503	576	656	801	932	959	977	994	999									
200	131	198	330	392	464	618	811	867	914	969										
125	986	132	228	276	374	469	673	746	815	916	980	989	995	999						
150	961	994	166	202	248	369	550	626	706	840	951	971	985	996	999					
200	015	034	045	120	170	225	370	436	512	648	849	898	937	979	997	998				
250	022	035	064	079	099	152	259	311	375	518	722	790	853	939	987	993	999			
300	016	035	045	056	070	108	189	230	281	403	601	676	753	875	965	981	990	998		
350	011	018	033	041	052	081	143	176	217	318	497	572	653	798	930	958	977	984	998	
400	019	014	025	032	040	063	112	138	171	236	413	483	562	717	883	924	955	986	998	999
450	017	011	022	025	032	050	090	111	138	208	366	410	484	619	827	880	924	974	985	998
500	006	009	016	020	026	041	074	091	114	174	283	350	418	568	768	831	897	956	991	996
600	004	006	011	014	018	028	052	064	091	125	216	261	317	448	651	725	797	905	976	987

29P0

Ground-burst

Air-burst

29P0

KT	001	002	005	007	010	020	05	07	10	20	300	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj. Vm	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
psi	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222
WJR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WJR	26	13	44	50	56	71	90	107	121	152	207	231	260	328	445	498	561	706	959	1072
CIP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.999																			
10	.867	.991	.999	.999																
15	.833	.927	.983	.991	.996	.999														
20	.658	.802	.932	.959	.977	.994	.999													
30	.394	.540	.743	.809	.868	.907	.980	.994	.997	.999										
40	.249	.352	.552	.628	.707	.842	.931	.972	.983	.996	.999									
50	.169	.253	.405	.479	.557	.712	.880	.921	.953	.986	.998	.999								
75	.080	.123	.213	.258	.313	.443	.646	.720	.792	.902	.975	.987	.993	.998						
100	.046	.071	.127	.156	.193	.286	.454	.527	.608	.759	.908	.942	.967	.991	.999					
125	.030	.046	.084	.103	.129	.195	.326	.387	.459	.613	.807	.883	.911	.968	.994	.997	.999			
150	.021	.032	.059	.073	.092	.141	.242	.291	.352	.491	.695	.766	.833	.927	.983	.991	.996	.999		
200	.012	.018	.034	.042	.053	.082	.145	.178	.219	.322	.502	.577	.658	.802	.932	.959	.977	.994	.999	
250	.007	.012	.022	.027	.034	.054	.096	.119	.158	.222	.366	.432	.508	.663	.845	.905	.934	.978	.996	.998
300	.005	.008	.015	.019	.024	.038	.068	.084	.105	.161	.274	.328	.394	.530	.743	.809	.868	.947	.989	.994
350	.004	.006	.011	.014	.018	.028	.050	.063	.079	.122	.211	.233	.310	.440	.642	.716	.789	.900	.975	.994
400	.003	.005	.009	.011	.014	.021	.039	.048	.061	.095	.166	.203	.249	.362	.552	.628	.707	.842	.951	.972
450	.002	.004	.007	.008	.011	.017	.031	.038	.049	.076	.134	.165	.203	.300	.474	.548	.629	.777	.919	.950
500	.002	.003	.005	.007	.009	.014	.023	.031	.040	.062	.111	.136	.169	.253	.409	.479	.557	.712	.880	.921
600	.001	.002	.004	.005	.006	.010	.018	.022	.028	.043	.078	.097	.121	.194	.309	.368	.438	.590	.788	.848
FT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.730	1,303	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj. Vm	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
psi	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222
WJR	11	14	19	22	25	31	42	47	53	67	90	101	114	144	195	214	245	309	439	479
WJR	29	36	49	55	62	78	105	114	133	167	277	354	486	660	949	947	616	777	1054	1179
CIP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.999																			
10	.990	.995	.999																	
15	.877	.952	.980	.995	.998	.999														
20	.720	.852	.936	.974	.987	.997	.999													
30	.451	.604	.799	.957	.987	.986	.984	.997	.999											
40	.297	.416	.616	.691	.766	.983	.983	.993	.999	.999										
50	.200	.295	.467	.541	.621	.771	.916	.947	.970	.992	.999	.999								
75	.095	.146	.250	.301	.343	.504	.709	.798	.843	.931	.995	.992	.996	.999	.999					
100	.055	.086	.151	.185	.227	.372	.510	.591	.672	.814	.998	.963	.990	.995	.999					
125	.036	.056	.100	.123	.153	.270	.378	.444	.521	.677	.955	.903	.940	.981	.997	.999				
150	.025	.039	.071	.088	.109	.187	.283	.338	.406	.554	.954	.920	.977	.992	.999	.999				
200	.014	.022	.040	.050	.061	.104	.173	.211	.258	.491	.960	.942	.977	.992	.999	.999	.999			
250	.008	.014	.026	.033	.041	.064	.115	.141	.176	.281	.931	.902	.931	.975	.998	.999	.999	.999		
300	.006	.010	.019	.023	.027	.045	.081	.101	.126	.191	.913	.900	.931	.964	.994	.997	.999	.999		
350	.007	.011	.017	.021	.023	.041	.075	.094	.115	.165	.904	.900	.930	.961	.994	.997	.999	.999		
400	.004	.006	.010	.013	.016	.026	.047	.059	.073	.111	.877	.900	.930	.961	.994	.997	.999	.999		
450	.003	.004	.009	.010	.013	.020	.037	.046	.054	.076	.863	.905	.936	.964	.994	.997	.999	.999		
500	.002	.003	.007	.009	.010	.017	.030	.034	.044	.070	.832	.912	.940	.965	.994	.997	.999	.999		
600	.002	.002	.005	.006	.007	.012	.021	.026	.033	.052	.804	.916	.944	.969	.994	.997	.999	.999		

29P0

30P0

Ground-burst

[illegible]

Air-burst

[illegible]

30P0

Air-burst

31 P 1

Ground-burst

Air-burst

32PZ

KT	001	002	005	007	010	012	014	016	018	020	022	024	026	028	030	032	034	036	038	040	042	044	046	048	050	052	054	056	058	060	062	064	066	068	070	072	074	076	078	080	082	084	086	088	090	092	094	096	098	100																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
VS	50.8	44.5	45.4	38.3	39.0	38.3	37.5	36.0	35.2	34.5	33.8	33.1	32.4	31.7	31.0	30.3	29.6	28.9	28.2	27.5	26.8	26.1	25.4	24.7	24.0	23.3	22.6	21.9	21.2	20.5	19.8	19.1	18.4	17.7	17.0	16.3	15.6	14.9	14.2	13.5	12.8	12.1	11.4	10.7	10.0	9.3	8.6	7.9	7.2	6.5	5.8	5.1	4.4	3.7	3.0	2.3	1.6	0.9	0.2	-0.5	-1.2	-1.9	-2.6	-3.3	-4.0	-4.7	-5.4	-6.1	-6.8	-7.5	-8.2	-8.9	-9.6	-10.3	-11.0	-11.7	-12.4	-13.1	-13.8	-14.5	-15.2	-15.9	-16.6	-17.3	-18.0	-18.7	-19.4	-20.1	-20.8	-21.5	-22.2	-22.9	-23.6	-24.3	-25.0	-25.7	-26.4	-27.1	-27.8	-28.5	-29.2	-29.9	-30.6	-31.3	-32.0	-32.7	-33.4	-34.1	-34.8	-35.5	-36.2	-36.9	-37.6	-38.3	-39.0	-39.7	-40.4	-41.1	-41.8	-42.5	-43.2	-43.9	-44.6	-45.3	-46.0	-46.7	-47.4	-48.1	-48.8	-49.5	-50.2	-50.9	-51.6	-52.3	-53.0	-53.7	-54.4	-55.1	-55.8	-56.5	-57.2	-57.9	-58.6	-59.3	-60.0	-60.7	-61.4	-62.1	-62.8	-63.5	-64.2	-64.9	-65.6	-66.3	-67.0	-67.7	-68.4	-69.1	-69.8	-70.5	-71.2	-71.9	-72.6	-73.3	-74.0	-74.7	-75.4	-76.1	-76.8	-77.5	-78.2	-78.9	-79.6	-80.3	-81.0	-81.7	-82.4	-83.1	-83.8	-84.5	-85.2	-85.9	-86.6	-87.3	-88.0	-88.7	-89.4	-90.1	-90.8	-91.5	-92.2	-92.9	-93.6	-94.3	-95.0	-95.7	-96.4	-97.1	-97.8	-98.5	-99.2	-99.9	-100.6	-101.3	-102.0	-102.7	-103.4	-104.1	-104.8	-105.5	-106.2	-106.9	-107.6	-108.3	-109.0	-109.7	-110.4	-111.1	-111.8	-112.5	-113.2	-113.9	-114.6	-115.3	-116.0	-116.7	-117.4	-118.1	-118.8	-119.5	-120.2	-120.9	-121.6	-122.3	-123.0	-123.7	-124.4	-125.1	-125.8	-126.5	-127.2	-127.9	-128.6	-129.3	-130.0	-130.7	-131.4	-132.1	-132.8	-133.5	-134.2	-134.9	-135.6	-136.3	-137.0	-137.7	-138.4	-139.1	-139.8	-140.5	-141.2	-141.9	-142.6	-143.3	-144.0	-144.7	-145.4	-146.1	-146.8	-147.5	-148.2	-148.9	-149.6	-150.3	-151.0	-151.7	-152.4	-153.1	-153.8	-154.5	-155.2	-155.9	-156.6	-157.3	-158.0	-158.7	-159.4	-160.1	-160.8	-161.5	-162.2	-162.9	-163.6	-164.3	-165.0	-165.7	-166.4	-167.1	-167.8	-168.5	-169.2	-169.9	-170.6	-171.3	-172.0	-172.7	-173.4	-174.1	-174.8	-175.5	-176.2	-176.9	-177.6	-178.3	-179.0	-179.7	-180.4	-181.1	-181.8	-182.5	-183.2	-183.9	-184.6	-185.3	-186.0	-186.7	-187.4	-188.1	-188.8	-189.5	-190.2	-190.9	-191.6	-192.3	-193.0	-193.7	-194.4	-195.1	-195.8	-196.5	-197.2	-197.9	-198.6	-199.3	-200.0	-200.7	-201.4	-202.1	-202.8	-203.5	-204.2	-204.9	-205.6	-206.3	-207.0	-207.7	-208.4	-209.1	-209.8	-210.5	-211.2	-211.9	-212.6	-213.3	-214.0	-214.7	-215.4	-216.1	-216.8	-217.5	-218.2	-218.9	-219.6	-220.3	-221.0	-221.7	-222.4	-223.1	-223.8	-224.5	-225.2	-225.9	-226.6	-227.3	-228.0	-228.7	-229.4	-230.1	-230.8	-231.5	-232.2	-232.9	-233.6	-234.3	-235.0	-235.7	-236.4	-237.1	-237.8	-238.5	-239.2	-239.9	-240.6	-241.3	-242.0	-242.7	-243.4	-244.1	-244.8	-245.5	-246.2	-246.9	-247.6	-248.3	-249.0	-249.7	-250.4	-251.1	-251.8	-252.5	-253.2	-253.9	-254.6	-255.3	-256.0	-256.7	-257.4	-258.1	-258.8	-259.5	-260.2	-260.9	-261.6	-262.3	-263.0	-263.7	-264.4	-265.1	-265.8	-266.5	-267.2	-267.9	-268.6	-269.3	-270.0	-270.7	-271.4	-272.1	-272.8	-273.5	-274.2	-274.9	-275.6	-276.3	-277.0	-277.7	-278.4	-279.1	-279.8	-280.5	-281.2	-281.9	-282.6	-283.3	-284.0	-284.7	-285.4	-286.1	-286.8	-287.5	-288.2	-288.9	-289.6	-290.3	-291.0	-291.7	-292.4	-293.1	-293.8	-294.5	-295.2	-295.9	-296.6	-297.3	-298.0	-298.7	-299.4	-300.1	-300.8	-301.5	-302.2	-302.9	-303.6	-304.3	-305.0	-305.7	-306.4	-307.1	-307.8	-308.5	-309.2	-309.9	-310.6	-311.3	-312.0	-312.7	-313.4	-314.1	-314.8	-315.5	-316.2	-316.9	-317.6	-318.3	-319.0	-319.7	-320.4	-321.1	-321.8	-322.5	-323.2	-323.9	-324.6	-325.3	-326.0	-326.7	-327.4	-328.1	-328.8	-329.5	-330.2	-330.9	-331.6	-332.3	-333.0	-333.7	-334.4	-335.1	-335.8	-336.5	-337.2	-337.9	-338.6	-339.3	-340.0	-340.7	-341.4	-342.1	-342.8	-343.5	-344.2	-344.9	-345.6	-346.3	-347.0	-347.7	-348.4	-349.1	-349.8	-350.5	-351.2	-351.9	-352.6	-353.3	-354.0	-354.7	-355.4	-356.1	-356.8	-357.5	-358.2	-358.9	-359.6	-360.3	-361.0	-361.7	-362.4	-363.1	-363.8	-364.5	-365.2	-365.9	-366.6	-367.3	-368.0	-368.7	-369.4	-370.1	-370.8	-371.5	-372.2	-372.9	-373.6	-374.3	-375.0	-375.7	-376.4	-377.1	-377.8	-378.5	-379.2	-379.9	-380.6	-381.3	-382.0	-382.7	-383.4	-384.1	-384.8	-385.5	-386.2	-386.9	-387.6	-388.3	-389.0	-389.7	-390.4	-391.1	-391.8	-392.5	-393.2	-393.9	-394.6	-395.3	-396.0	-396.7	-397.4	-398.1	-398.8	-399.5	-400.2	-400.9	-401.6	-402.3	-403.0	-403.7	-404.4	-405.1	-405.8	-406.5	-407.2	-407.9	-408.6	-409.3	-410.0	-410.7	-411.4	-412.1	-412.8	-413.5	-414.2	-414.9	-415.6	-416.3	-417.0	-417.7	-418.4	-419.1	-419.8	-420.5	-421.2	-421.9	-422.6	-423.3	-424.0	-424.7	-425.4	-426.1	-426.8	-427.5	-428.2	-428.9	-429.6	-430.3	-431.0	-431.7	-432.4	-433.1	-433.8	-434.5	-435.2	-435.9	-436.6	-437.3	-438.0	-438.7	-439.4	-440.1	-440.8	-441.5	-442.2	-442.9	-443.6	-444.3	-445.0	-445.7	-446.4	-447.1	-447.8	-448.5	-449.2	-449.9	-450.6	-451.3	-452.0	-452.7	-453.4	-454.1	-454.8	-455.5	-456.2	-456.9	-457.6	-458.3	-459.0	-459.7	-460.4	-461.1	-461.8	-462.5	-463.2	-463.9	-464.6	-465.3	-466.0	-466.7	-467.4	-468.1	-468.8	-469.5	-470.2	-470.9	-471.6	-472.3	-473.0	-473.7	-474.4	-475.1	-475.8	-476.5	-477.2	-477.9	-478.6	-479.3	-480.0	-480.7	-481.4	-482.1	-482.8	-483.5	-484.2	-484.9	-485.6	-486.3	-487.0	-487.7	-488.4	-489.1	-489.8	-490.5	-491.2	-491.9	-492.6	-493.3	-494.0	-494.7	-495.4	-496.1	-496.8	-497.5	-498.2	-498.9	-499.6	-500.3	-501.0	-501.7	-502.4	-503.1	-503.8	-504.5	-505.2	-505.9	-506.6	-507.3	-508.0	-508.7	-509.4	-510.1	-510.8	-511.5	-512.2	-512.9	-513.6	-514.3	-515.0	-515.7	-516.4	-517.1	-517.8	-518.5	-519.2	-519.9	-520.6	-521.3	-522.0	-522.7	-523.4	-524.1	-524.8	-525.5	-526.2	-526.9	-527.6	-528.3	-529.0	-529.7	-530.4	-531.1	-531.8	-532.5	-533.2	-533.9	-534.6	-535.3	-536.0	-536.7	-537.4	-538.1	-538.8	-539.5	-540.2	-540.9	-541.6	-542.3	-543.0	-543.7	-544.4	-545.1	-545.8	-546.5	-547.2	-547.9	-548.6	-549.3	-550.0	-550.7	-551.4	-552.1	-552.8	-553.5	-554.2	-554.9	-555.6	-556.3	-557.0	-557.7	-558.4	-559.1	-559.8	-560.5	-561.2	-561.9	-562.6	-563.3	-564.0	-564.7	-565.4	-566.1	-566.8	-567.5	-568.2	-568.9	-569.6	-570.3	-571.0	-571.7	-572.4	-573.1	-573.8	-574.5	-575.2	-575.9	-576.6	-577.3	-578.0	-578.7	-579.4	-580.1	-580.8	-581.5	-582.2	-582.9	-583.6	-584.3	-585.0	-585.7	-586.4	-587.1	-587.8	-588.5	-589.2	-589.9	-590.6	-591.3	-592.0	-592.7	-593.4	-594.1	-594.8	-595.5	-596.2	-596.9	-597.6	-598.3	-599.0	-599.7	-600.4	-601.1	-601.8	-602.5	-603.2	-603.9	-604.6	-605.3	-606.0	-606.7	-607.4	-608.1	-608.8	-609.5	-610.2	-610.9	-611.6	-612.3	-613.0	-613.7	-614.4	-615.1	-615.8	-616.5	-617.2	-617.9	-618.6	-619.3	-620.0	-620.7	-621.4	-622.1	-622.8	-623.5	-624.2	-624.9	-625.6	-626.3	-627.0	-627.7	-628.4	-629.1	-629.8	-630.5	-631.2	-631.9	-632.6	-633.3	-634.0	-634.7	-635.4	-636.1	-636.8	-637.5	-638.2	-638.9	-639.6	-640.3	-641.0	-641.7	-642.4	-643.1	-643.8	-644.5	-645.2	-645.9	-646.6	-647.3	-648.0	-648.7	-649.4	-650.1	-650.8	-651.5	-652.2	-652.9	-653.6	-654.3	-655.0	-655.7	-656.4	-657.1	-657.8	-658.5	-659.2	-659.9	-660.6	-661.3	-662.0	-662.7	-663.4	-664.1	-664.8	-665.5	-666.2	-666.9	-667.6	-668.3	-669.0	-669.7	-670.4	-671.1	-671.8	-672.5	-673.2	-673.9	-674.6	-675.3	-676.0	-676.7	-677.4	-678.1	-678.8	-679.5	-680.2	-680.9	-681.6	-682.3	-683.0	-683.7	-684.4	-685.1	-685.8	-686.5	-687.2	-687.9	-688.6	-689.3	-690.0	-690.7	-691.4	-692.1	-692.8	-693.5	-694.2	-694.9	-695.6	-696.3	-697.0	-697.7	-698.4	-699.1	-699.8	-700.5	-701.2	-701.9	-702.6	-703.3	-704.0	-704.7	-705.4	-706.1	-706.8	-707.5	-708.2	-708.9	-709.6	-710.3	-711.0	-711.7	-712.4	-713.1	-713.8	-714.5	-715.2	-715.9	-716.6	-717.3	-718.0	-718.7	-719.4	-720.1	-720.8	-721.5	-722.2	-722.9	-723.6	-724.3	-725.0	-725.7	-726.4	-727.1	-727.8	-728.5	-729.2	-729.9	-730.6	-731.3	-732.0	-732.7	-733.4	-734.1	-734.8	-735.5	-736.2	-736.9	-737.6	-738.3	-739.0	-739.7	-740.4	-741.1	-741.8	-742.5	-743.2	-743.9	-744.6	-745.3	-746.0	-746.7	-747.4	-748.1	-748.8	-749.5	-750.2	-750.9	-751.6	-752.3	-753.0	-753.7	-754.4	-755.1	-755.8	-756.5	-757.2	-757.9	-758.6	-759.3	-760.0	-760.7	-761.4	-762.1	-762.8	-763.5	-764.2	-764.9	-765.6	-766.3	-767.0	-767.7	-768.4	-769.1	-769.8	-770.5	-771.2	-771.9	-772.6	-773.3	-774.0	-774.7	-775.4	-776.1	-776.8	-777.5	-778.2	-778.9	-779.6	-780.3	-781.0	-781.7	-782.4	-783.1	-783.8	-784.5	-785.2	-785.9	-786.6	-787.3	-788.0	-788.7	-789.4	-790.1	-790.8	-791.5	-792.2	-792.9	-793.6	-794.3	-795.0	-795.7	-796.4	-797.1	-797.8	-798.5	-799.2	-799.9	-800.6	-801.3	-802.0	-802.7	-803.4	-804.1	-804.8	-805.5	-806.2	-806.9	-807.6	-808.3	-809.0	-809.7	-810.4	-811.1	-8

33P4

Ground-burst

Air-burst

33P4

KT	0.01	0.02	0.03	0.07	0.10	0.20	0.50	1.00	2.00	5.00	7.00	10.00	20.00	50.00	70.00
Adj W	59.2	56.7	53.4	52.2	51.0	48.6	45.5	44.5	43.4	41.3	38.9	36.1	34.1	33.0	32.1
Pos	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MR	0	6	10	12	14	21	34	41	49	70	114	132	156	211	311
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0															
5	347	587	885	946	979	998									
10	103	208	463	586	717	910	992	997	999						
15	048	099	248	335	448	699	937	973	990	999					
20	027	057	149	208	289	506	822	902	956	994					
30	012	026	070	099	143	276	564	684	800	944	936	998	999		
40	007	015	040	057	083	164	382	481	617	826	879	991	997	999	
50	004	009	026	037	054	112	268	337	468	705	838	970	987	998	
75	002	004	012	017	025	052	131	181	251	437	556	842	919	978	999
100	001	002	007	009	014	029	076	107	151	281	366	670	772	916	998
125	001	002	004	006	009	019	050	070	100	192	222	320	404	505	628
150	001	003	004	006	013	035	089	071	138	320	397	517	623	773	944
200	001	002	003	007	023	028	071	081	197	257	333	517	773	944	999
250	001	002	003	007	023	028	071	081	197	257	333	517	773	944	999
300	001	002	003	007	023	028	071	081	197	257	333	517	773	944	999
350	001	002	003	007	023	028	071	081	197	257	333	517	773	944	999
400	001	002	003	007	023	028	071	081	197	257	333	517	773	944	999
450	001	002	003	007	023	028	071	081	197	257	333	517	773	944	999
500	001	002	003	007	023	028	071	081	197	257	333	517	773	944	999
600	001	002	003	007	023	028	071	081	197	257	333	517	773	944	999

33P4

33P 8

Ground-burst

33P8																				
KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	1.000	2.000	5.000	7.000	10.00	20.00	3.00	70.00	
Adj VN	66.8	64.2	60.9	59.7	58.4	55.8	42.5	51.3	50.0	47.5	44.3	43.2	41.9	39.6	36.0	35.8	34.8	33.0	31.0	30.3
HO8	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	3	4	6	7	9	13	22	27	33	48	79	93	115	167	275	325	387	544	840	981
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.158	.307	.620	.743	.853	.971	.999													
10	.043	.089	.226	.300	.419	.673	.931	.971	.990	.999										
15	.019	.041	.104	.154	.219	.407	.740	.845	.925	.989	.999									
20	.011	.023	.063	.090	.131	.259	.549	.675	.798	.950	.997	.999								
30	.005	.010	.029	.041	.061	.126	.307	.408	.535	.785	.969	.988	.996							
40	.003	.006	.016	.024	.035	.073	.189	.260	.337	.599	.891	.949	.980	.998						
50	.002	.004	.010	.015	.022	.048	.126	.177	.249	.452	.781	.875	.941	.992						
75	.001	.002	.005	.007	.010	.022	.058	.083	.121	.240	.515	.639	.764	.832	.995	.998				
100	.001	.003	.004	.006	.012	.033	.048	.070	.144		.341	.448	.575	.812	.975	.990	.997			
125	.001	.002	.002	.004	.008	.021	.031	.046	.095	.217	.321	.429	.676	.929	.967	.987	.998			
150	.001	.002	.003	.005	.015	.022	.032	.062	.109	.172	.237	.326	.552	.859	.924	.966	.995			
200	.001	.001	.001	.003	.008	.012	.018	.039	.102	.143	.202	.372	.694	.797	.884	.974	.998	.999		
250	.001	.001	.001	.002	.005	.008	.012	.025	.068	.094	.135	.260	.543	.656	.770	.926	.982	.997		
300	.001	.001	.001	.001	.004	.005	.008	.017	.047	.067	.096	.190	.428	.533	.653	.854	.977	.990		
350	.001	.003	.004	.006	.013	.035	.043	.072	.144	.043	.043	.072	.144	.338	.434	.548	.771	.932	.978	
400	.001	.002	.003	.005	.010	.027	.038	.056	.113	.273	.356	.461	.687	.914	.956					
450	.001	.002	.002	.004	.008	.021	.030	.044	.090	.223	.296	.389	.608	.848	.926					
500	.001	.001	.002	.003	.006	.017	.025	.036	.074	.196	.248	.331	.537	.816	.889					
600	.001	.001	.001	.002	.004	.012	.017	.025	.052	.134	.181	.246	.420	.707	.801					
KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	1.000	2.000	5.000	7.000	10.00	20.00	3.00	70.00	
Adj VN	66.9	64.3	60.9	59.7	58.4	55.8	42.5	51.3	50.0	47.5	44.3	43.2	41.9	39.6	36.0	35.8	34.8	33.0	31.0	30.3
HO8	4	5	7	8	10	13	19	21	25	33	49	57	86	134	190	244	314	422	598	727
WR	2	4	6	7	9	13	23	27	34	50	84	101	123	180	284	331	422	598	927	1082
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD

Air-burst

WT	.001	.002	.005	.007	.10	.20	.500	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
101	66.9	60.7	60.9	59.7	58.4	55.8	52.5	51.1	50.0	47.5	44.3	43.2	41.9	40.6	40.3
102	5	5	7	8	10	13	19	21	25	33	49	57	66	89	134
103	2	4	6	7	9	13	23	27	34	50	84	101	123	190	284
104	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
105	14.9	.207	.615	.741	.844	.972	.999								
106	10.0	.086	.223	.308	.420	.691	.938								
107	15	.019	.019	.107	.153	.220	.414	.756	.860	.935	.991				
108	20	.010	.072	.062	.090	.131	.264	.566	.695	.917	.953	.938	.993		
109	30	.005	.010	.028	.041	.061	.120	.319	.427	.558	.810	.377	.032	.008	
110	40	.003	.001	.016	.023	.035	.075	.177	.273	.377	.639	.012	.061	.090	
111	50	.002	.004	.010	.015	.022	.040	.112	.196	.266	.440	.813	.000	.057	.005
112	75	.001	.002	.005	.007	.010	.072	.061	.048	.129	.259	.553	.680	.902	.951
113	100	.001	.001	.004	.006	.012	.035	.051	.075	.155	.372	.487	.620	.951	.994
114	125	.001	.002	.012	.004	.008	.023	.033	.049	.104	.261	.353	.471	.724	.947
115	150	.001	.002	.003	.006	.016	.023	.034	.073	.191	.263	.326	.403	.693	.907
116	200	.001	.001	.001	.003	.003	.013	.010	.042	.113	.153	.232	.416	.739	.911
117	250	.001	.001	.001	.002	.006	.009	.012	.027	.074	.106	.157	.295	.591	.709
118	300	.001	.001	.001	.001	.004	.006	.010	.019	.052	.075	.109	.217	.470	.587
119	350	.001	.002	.004	.006	.014	.030	.055	.081	.165	.375	.484	.607	.925	.970
120	400	.001	.002	.003	.005	.011	.033	.043	.063	.130	.306	.401	.517	.768	.943
121	450	.001	.002	.003	.004	.007	.024	.034	.050	.104	.252	.315	.441	.672	.908
122	500	.001	.002	.003	.007	.019	.074	.094	.108	.210	.383	.379	.591	.845	.924
123	600	.001	.001	.002	.005	.013	.033	.029	.060	.152	.208	.228	.474	.764	.852

33P 8

35PI

Ground-burst

Air-burst

35PI

KT .001 .002 .005 .007 .010 .020 .05 .07 .10 .20 .500 .700 1,000 2,000 5,000 7,000 10,000 20,000 50,000 70,000
Adj Wt 47.1 45.1 42.4 42.0 41.3 40.0 38.6 38.2 37.8 37.1 36.4 36.2 36.0 35.7 35.3 35.2 35.1 35.0 34.8 34.6
Psi 6006 4179 2730 2374 2071 1637 1273 1178 1094 960 863 822 793 705 692 681 642 644 639 639
HOB 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
AR 3 12 19 22 26 35 54 61 71 92 130 147 168 215 298 335 379 482 660 740

CEP PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD
0 .915 .950 .996 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998
5 .374 .600 .869 .928 .966 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994
10 .132 .345 .629 .734 .829 .947 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994
15 .114 .215 .439 .542 .654 .941 .972 .986 .994 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999
20 .053 .103 .232 .302 .390 .589 .848 .905 .947 .997 .998 .998 .998 .998 .998 .998 .998 .998 .998
30 .030 .060 .139 .195 .247 .403 .679 .765 .842 .942 .994 .994 .994 .994 .994 .994 .994 .994 .994
50 .019 .039 .092 .124 .167 .285 .529 .619 .713 .863 .994 .994 .994 .994 .994 .994 .994 .994 .994
75 .009 .017 .042 .057 .070 .143 .292 .361 .444 .621 .994 .994 .994 .994 .994 .994 .994 .994 .994
100 .005 .010 .024 .033 .045 .082 .173 .226 .286 .511 .994 .994 .994 .994 .994 .994 .994 .994 .994
125 .003 .005 .015 .021 .029 .053 .119 .152 .194 .307 .994 .994 .994 .994 .994 .994 .994 .994 .994
150 .002 .004 .011 .015 .020 .037 .084 .109 .141 .227 .994 .994 .994 .994 .994 .994 .994 .994 .994
170 .001 .002 .006 .008 .012 .021 .049 .063 .082 .136 .994 .994 .994 .994 .994 .994 .994 .994 .994
200 .001 .002 .004 .005 .007 .014 .031 .041 .054 .090 .994 .994 .994 .994 .994 .994 .994 .994 .994
250 .001 .002 .004 .005 .007 .014 .031 .041 .054 .090 .994 .994 .994 .994 .994 .994 .994 .994 .994
300 .001 .001 .003 .004 .005 .010 .022 .029 .038 .063 .994 .994 .994 .994 .994 .994 .994 .994 .994
350 .001 .001 .003 .004 .005 .010 .022 .029 .038 .063 .994 .994 .994 .994 .994 .994 .994 .994 .994
400 .001 .001 .003 .004 .005 .010 .022 .029 .038 .063 .994 .994 .994 .994 .994 .994 .994 .994 .994
450 .001 .001 .003 .004 .005 .010 .022 .029 .038 .063 .994 .994 .994 .994 .994 .994 .994 .994 .994
500 .001 .001 .003 .004 .005 .010 .022 .029 .038 .063 .994 .994 .994 .994 .994 .994 .994 .994 .994
600 .001 .001 .003 .004 .005 .010 .022 .029 .038 .063 .994 .994 .994 .994 .994 .994 .994 .994 .994

35PI

KT .001 .002 .005 .007 .010 .020 .05 .07 .10 .20 .500 .700 1,000 2,000 5,000 7,000 10,000 20,000 50,000 70,000
Adj Wt 47.1 45.1 42.4 42.0 41.3 40.0 38.6 38.2 37.8 37.1 36.4 36.2 36.0 35.7 35.3 35.2 35.1 35.0 34.8 34.6
Psi 6006 4179 2730 2374 2071 1637 1273 1178 1094 960 863 822 793 705 692 681 642 644 639 639
HOB 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
AR 3 12 19 22 26 35 54 61 71 92 130 147 168 215 298 335 379 482 660 740

CEP PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD PD
0 .915 .950 .996 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998 .998
5 .374 .600 .869 .928 .966 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994
10 .132 .345 .629 .734 .829 .947 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994 .994
15 .114 .215 .439 .542 .654 .941 .972 .986 .994 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999
20 .053 .103 .232 .302 .390 .589 .848 .905 .947 .997 .998 .998 .998 .998 .998 .998 .998 .998 .998
30 .030 .060 .139 .195 .247 .403 .679 .765 .842 .942 .994 .994 .994 .994 .994 .994 .994 .994 .994
50 .019 .039 .092 .124 .167 .285 .529 .619 .713 .863 .994 .994 .994 .994 .994 .994 .994 .994 .994
75 .009 .017 .042 .057 .070 .143 .292 .361 .444 .621 .994 .994 .994 .994 .994 .994 .994 .994 .994
100 .005 .010 .024 .033 .045 .082 .173 .226 .286 .511 .994 .994 .994 .994 .994 .994 .994 .994 .994
125 .003 .005 .015 .021 .029 .053 .119 .152 .194 .307 .994 .994 .994 .994 .994 .994 .994 .994 .994
150 .002 .004 .011 .015 .020 .037 .084 .109 .141 .227 .994 .994 .994 .994 .994 .994 .994 .994 .994
170 .001 .002 .006 .008 .012 .021 .049 .063 .082 .136 .994 .994 .994 .994 .994 .994 .994 .994 .994
200 .001 .002 .004 .005 .007 .014 .031 .041 .054 .090 .994 .994 .994 .994 .994 .994 .994 .994 .994
250 .001 .002 .004 .005 .007 .014 .031 .041 .054 .090 .994 .994 .994 .994 .994 .994 .994 .994 .994
300 .001 .001 .003 .004 .005 .010 .022 .029 .038 .063 .994 .994 .994 .994 .994 .994 .994 .994 .994
350 .001 .001 .003 .004 .005 .010 .022 .029 .038 .063 .994 .994 .994 .994 .994 .994 .994 .994 .994
400 .001 .001 .003 .004 .005 .010 .022 .029 .038 .063 .994 .994 .994 .994 .994 .994 .994 .994 .994
450 .001 .001 .003 .004 .005 .010 .022 .029 .038 .063 .994 .994 .994 .994 .994 .994 .994 .994 .994
500 .001 .001 .003 .004 .005 .010 .022 .029 .038 .063 .994 .994 .994 .994 .994 .994 .994 .994 .994
600 .001 .001 .003 .004 .005 .010 .022 .029 .038 .063 .994 .994 .994 .994 .994 .994 .994 .994 .994

37P6

Ground-burst

Air-burst

37P6

RT	001	002	005	007	010	020	05	07	10	20	500	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj VN	87.6	85.1	81.8	80.5	79.3	78.0	76.8	75.5	74.3	73.1	71.8	70.5	69.3	68.0	66.8	65.5	64.3	63.1	61.8	60.5
pel																				
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	2	4	6	7	9	13	21	25	30	44	72	86	103	146	227	275	321	431	627	717
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.144	.282	.583	.719	.826	.961	.998	.999												
10	.038	.081	.206	.283	.386	.531	.611	.660	.886	.999										
15	.017	.037	.079	.140	.199	.274	.371	.412	.902	.983	.999									
20	.010	.021	.057	.081	.118	.235	.308	.632	.759	.931	.995	.998	.999							
30	.004	.009	.026	.037	.055	.114	.278	.372	.491	.740	.952	.980	.993	.999						
40	.002	.005	.015	.021	.031	.066	.169	.233	.322	.549	.851	.921	.966	.995						
50	.002	.003	.009	.014	.020	.043	.112	.158	.222	.406	.725	.827	.908	.982	.999					
75	.001	.002	.004	.006	.009	.019	.052	.074	.107	.211	.456	.571	.695	.886	.985	.998				
100	.001	.002	.003	.005	.011	.030	.042	.062	.126	.295	.388	.502	.734	.938	.975	.989	.998			
125	.001	.002	.003	.007	.019	.027	.040	.083		.202	.273	.368	.506	.856	.929	.945	.993	.999		
150	.001	.002	.005	.013	.019	.028	.058			.146	.200	.273	.465	.756	.859	.920	.980	.998	.999	
200	.001	.001	.003	.007	.011	.018	.033			.088	.119	.166	.302	.566	.694	.790	.922	.988	.998	
250	.001	.001	.002	.005	.007	.010	.021			.056	.078	.110	.207	.421	.543	.648	.829	.961	.980	
300	.001	.001	.001	.003	.005	.007	.015			.039	.055	.078	.150	.320	.426	.525	.722	.913	.951	
350	.001	.001	.001	.002	.004	.005	.011			.029	.041	.058	.113	.248	.338	.426	.620	.849	.906	
400	.001	.001	.001	.002	.003	.004	.008			.022	.031	.045	.088	.197	.273	.350	.530	.777	.849	
450	.001	.001	.001	.002	.003	.004	.007			.018	.025	.036	.070	.160	.223	.280	.451	.703	.786	
500	.001	.001	.001	.002	.003	.005	.014			.014	.020	.029	.057	.132	.186	.243	.390	.633	.722	
600	.001	.001	.001	.001	.002	.004	.004			.010	.014	.020	.040	.094	.134	.177	.293	.510	.601	
RT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj VN	67.6	65.1	61.8	60.5	59.3	58.0	56.8	55.5	54.3	53.1	51.8	50.5	49.3	48.0	46.8	45.5	44.3	43.1	41.8	40.5
pel																				
HOB	2	4	6	7	9	13	21	26	31	46	76	91	109	156	245	287	338	461	671	773
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.131	.277	.576	.705	.825	.961	.998	.999												
10	.036	.077	.202	.280	.386	.531	.611	.660	.886	.999										
15	.016	.035	.076	.138	.198	.274	.371	.412	.902	.983	.999									
20	.001	.020	.056	.080	.118	.235	.308	.632	.759	.931	.995	.998	.999							
30	.004	.009	.026	.037	.055	.114	.278	.372	.491	.740	.952	.980	.993	.999						
40	.002	.005	.015	.021	.031	.066	.169	.233	.322	.549	.851	.921	.966	.995						
50	.001	.003	.009	.014	.020	.043	.112	.158	.222	.406	.725	.827	.908	.982	.999					
75	.001	.002	.004	.006	.009	.019	.052	.074	.107	.211	.456	.571	.695	.886	.985	.998				
100	.001	.002	.003	.005	.011	.030	.042	.062	.126	.295	.388	.502	.734	.938	.975	.989	.998			
125	.001	.002	.003	.007	.019	.027	.040	.083		.202	.273	.368	.506	.856	.929	.945	.993	.999		
150	.001	.002	.005	.013	.019	.028	.058			.146	.200	.273	.465	.756	.859	.920	.980	.998	.999	
200	.001	.001	.003	.007	.011	.018	.033			.088	.119	.166	.302	.566	.694	.790	.922	.988	.998	
250	.001	.001	.002	.005	.007	.010	.021			.056	.078	.110	.207	.421	.543	.648	.829	.961	.980	
300	.001	.001	.001	.003	.005	.007	.015			.039	.055	.078	.150	.320	.426	.525	.722	.913	.951	
350	.001	.001	.001	.002	.004	.005	.011			.029	.041	.058	.113	.248	.338	.426	.620	.849	.906	
400	.001	.001	.001	.002	.003	.004	.008			.022	.031	.045	.088	.197	.273	.350	.530	.777	.849	
450	.001	.001	.001	.002	.003	.004	.007			.018	.025	.036	.070	.160	.223	.280	.451	.703	.786	
500	.001	.001	.001	.002	.003	.005	.014			.014	.020	.029	.057	.132	.186	.243	.390	.633	.722	
600	.001	.001	.001	.001	.002	.004	.004			.010	.014	.020	.040	.094	.134	.177	.293	.510	.601	
RT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj VN	67.6	65.1	61.8	60.5	59.3	58.0	56.8	55.5	54.3	53.1	51.8	50.5	49.3	48.0	46.8	45.5	44.3	43.1	41.8	40.5
pel																				
HOB	2	4	6	7	9	13	21	26	31	46	76	91	109	156	245	287	338	461	671	773
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.131	.277	.576	.705	.825	.961	.998	.999												
10	.036	.077	.202	.280	.386	.531	.611	.660	.886	.999										
15	.016	.035	.076	.138	.198	.274	.371	.412	.902	.983	.999									
20	.001	.020	.056	.080	.118	.235	.308	.632	.759	.931	.995	.998	.999							
30	.004	.009	.026	.037	.055	.114	.278	.372	.491	.740	.952	.980	.993	.999						
40	.002	.005	.015	.021	.031	.066	.169	.233	.322	.549	.851	.921	.966	.995						
50	.001	.003	.009	.014	.020	.043	.112	.158	.222	.406	.725	.827	.908	.982	.999					
75	.001	.002	.004	.006	.009	.019	.052	.074	.107	.211	.456	.571	.695	.886	.985	.998				
100	.001	.002	.003	.005	.011	.030	.042	.062	.126	.295	.388	.502	.734	.938	.975	.989	.998			
125	.001	.002	.003	.007	.019	.027	.040	.083		.202	.273	.368	.506	.856	.929	.945	.993	.999		
150	.001	.002	.005	.013	.019	.028	.058			.146	.200	.273	.465	.756	.859	.920	.980	.998	.999	
200	.001	.001	.003	.007	.011	.018	.033			.088	.119	.166	.302	.566	.694	.790	.922	.988	.998	
250	.001	.001	.002	.005	.007	.010	.021			.056	.078	.110	.207	.421	.543	.648	.829	.961	.980	
300	.001	.001	.001	.003	.005	.007	.015			.039	.055	.078	.150	.320	.426	.525	.722	.913	.951	
350	.001	.001	.001	.002	.004	.005	.011			.029	.041	.058	.113	.248	.338	.426	.620	.849	.906	
400	.001	.001	.001	.002	.003	.004	.008			.022	.031	.045	.088	.197	.273	.350	.530	.777	.849	
450	.001	.001	.001	.002	.003	.004	.007			.018	.025	.036	.070	.160	.223	.280	.451	.703	.786	
500	.001	.001	.001	.002	.003	.005	.014			.014	.020	.029	.057	.132	.186	.243	.390	.633	.722	
600	.001	.001	.001	.001	.002	.004	.004			.010	.014	.020	.040	.094	.134	.177	.293	.510	.601	
RT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj VN	67.6	65.1	61.8	60.5	59.3	58.0	56.8	55.5	54.3	53.1	51.8	50.5	49.3	48.0	46.8	45.5	44.3	43.1	41.8	40.5
pel																				
HOB	2	4	6	7	9	13	21	26	31	46	76	91	109	156	245	287	338	461	671	773
CEP	PD	PD	PD	PD	PD															

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Ground-burst

Air-burst

37P7

RT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.000	15.000	20.000	50.000	70.000
Adj Vm	69.3	66.8	63.4	62.2	60.9	58.4	55.1	53.9	52.6	50.2	47.1	44.0	44.8	42.7	40.2	38.3	36.5	37.0	35.4	34.9	
psi											8020	4316	3991	2708	1700	1456	1248	954	711	649	
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
WR	2	3	5	6	8	11	19	23	28	40	67	80	96	138	219	259	316	431	640	737	
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																					
5	.119	.237	.515	.641	.769	.938	.996	.999													
10	.031	.066	.172	.239	.311	.567	.873	.938	.976	.997											
15	.014	.030	.081	.115	.166	.320	.636	.757	.863	.973	.999										
20	.008	.017	.047	.067	.098	.198	.445	.567	.699	.901	.991	.997	.999								
30	.004	.008	.021	.030	.045	.094	.236	.320	.431	.682	.931	.970	.989	.999							
40	.002	.004	.012	.017	.026	.054	.142	.198	.276	.489	.810	.895	.952	.993							
50	.001	.003	.008	.011	.015	.035	.093	.132	.188	.355	.673	.786	.881	.976	.998	.999					
75	.001	.001	.003	.005	.007	.016	.043	.061	.093	.180	.407	.521	.649	.862	.982	.993	.998				
100	.001	.001	.002	.003	.004	.009	.024	.035	.051	.106	.235	.346	.457	.698	.928	.966	.988	.998			
125	.001	.001	.002	.003	.004	.006	.016	.023	.033	.070	.176	.241	.328	.548	.838	.909	.962	.993	.999		
150	.001	.001	.001	.001	.001	.002	.004	.011	.016	.023	.049	.126	.175	.243	.430	.734	.829	.915	.980	.998	.999
200	.001	.001	.001	.001	.001	.002	.006	.009	.013	.028	.073	.103	.147	.276	.542	.854	.781	.922	.989	.995	
250	.001	.001	.001	.001	.001	.001	.004	.006	.008	.018	.046	.068	.097	.188	.401	.503	.638	.829	.964	.983	
300	.001	.001	.001	.001	.001	.001	.003	.004	.006	.013	.033	.048	.068	.135	.302	.390	.515	.722	.919	.956	
350	.001	.001	.001	.001	.001	.001	.002	.003	.004	.009	.025	.035	.051	.102	.234	.307	.417	.620	.858	.915	
400	.001	.001	.001	.001	.001	.001	.002	.002	.003	.007	.019	.027	.039	.079	.185	.246	.342	.530	.788	.862	
450	.001	.001	.001	.001	.001	.001	.001	.002	.003	.006	.015	.021	.031	.063	.150	.201	.283	.453	.716	.802	
500	.001	.001	.001	.001	.001	.001	.001	.001	.002	.005	.012	.017	.025	.051	.124	.167	.237	.390	.647	.739	
600	.001	.001	.001	.001	.001	.001	.001	.001	.001	.003	.008	.012	.018	.036	.088	.120	.172	.283	.523	.619	
RT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.000	15.000	20.000	50.000	70.000
Adj Vm	67.3	64.8	61.4	60.2	58.9	56.4	53.1	51.9	50.6	48.2	45.1	42.0	42.8	40.7	38.2	36.3	34.5	35.0	33.4	32.9	
psi											8070	4016	3691	2708	1700	1456	1248	954	711	649	
HOB	4	5	7	8	9	12	18	20	23	31	45	52	61	81	119	137	159	212	376	340	
WR	2	3	5	6	8	11	19	23	28	42	70	84	102	147	236	279	332	441	644	803	
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																					
5	.110	.225	.503	.632	.764	.939	.996	.999													
10	.029	.063	.167	.233	.326	.568	.879	.943	.979	.994											
15	.013	.028	.078	.113	.164	.321	.648	.768	.874	.977	.998										
20	.007	.016	.043	.065	.096	.188	.434	.580	.71	.913	.991	.997	.999								
30	.003	.007	.020	.030	.044	.094	.242	.330	.446	.704	.944	.977	.992	.999							
40	.002	.004	.011	.017	.025	.054	.145	.204	.284	.511	.814	.913	.963	.995							
50	.001	.003	.007	.011	.016	.035	.096	.137	.197	.374	.703	.814	.903	.983	.999						
75	.001	.001	.003	.005	.007	.016	.044	.064	.094	.191	.435	.555	.685	.889	.988	.996	.999				
100	.001	.001	.002	.003	.004	.009	.025	.036	.054	.113	.279	.374	.492	.738	.948	.977	.991	.994			
125	.001	.001	.002	.003	.004	.006	.016	.024	.035	.074	.191	.267	.357	.530	.873	.933	.970	.985			
150	.001	.001	.001	.001	.001	.002	.004	.011	.016	.024	.052	.137	.191	.267	.469	.779	.866	.931	.985	.999	
200	.001	.001	.001	.001	.001	.001	.002	.006	.009	.014	.030	.082	.113	.167	.305	.532	.704	.802	.942	.993	.997
250	.001	.001	.001	.001	.001	.001	.001	.004	.006	.009	.019	.052	.074	.107	.210	.445	.554	.672	.962	.989	
300	.001	.001	.001	.001	.001	.001	.001	.003	.004	.006	.013	.037	.052	.076	.152	.319	.416	.549	.764	.941	.971
350	.001	.001	.001	.001	.001	.001	.001	.002	.003	.005	.016	.027	.039	.057	.114	.245	.347	.448	.666	.894	.941
400	.001	.001	.001	.001	.001	.001	.001	.002	.002	.004	.008	.021	.034	.049	.099	.211	.280	.363	.575	.813	.898
450	.001	.001	.001	.001	.001	.001	.001	.001	.002	.003	.006	.016	.024	.035	.071	.171	.230	.307	.487	.767	.847
500	.001	.001	.001	.001	.001	.001	.001	.001	.001	.002	.003	.013	.019	.024	.058	.143	.193	.258	.430	.701	.790
600	.001	.001	.001	.001	.001	.001	.001	.001	.001	.002	.003	.004	.013	.020	.041	.101	.134	.188	.327	.579	.676

37P7

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Ground-burst

Air-burst

KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.24	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj VN	50.1	48.1	45.8	45.0	44.3	43.0	41.6	41.2	40.8	40.1	39.4	39.2	39.0	38.7	38.3	38.2	38.1	38.0	37.8	37.8
psi	10378	7222	4717	4102	3579	2828	2199	2035	1890	1672	1474	1420	1370	1292	1218	1196	1176	1165	1154	1104
WOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	7	10	16	18	22	29	43	50	57	75	107	121	143	183	252	284	321	408	558	626
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.704	.894	.987	.995	.998															
10	.280	.477	.772	.857	.922	.982	.998	.999												
15	.138	.227	.505	.612	.722	.884	.961	.991	.996	.999										
20	.080	.155	.333	.424	.555	.736	.924	.959	.980	.996										
30	.037	.073	.155	.222	.293	.467	.728	.809	.879	.961	.994	.997	.999							
40	.021	.045	.099	.133	.179	.304	.534	.628	.723	.872	.971	.985	.994	.999						
50	.011	.027	.065	.087	.119	.209	.393	.478	.574	.734	.920	.953	.980	.995	.999					
75	.006	.012	.028	.040	.055	.100	.203	.258	.326	.485	.717	.793	.877	.955	.992	.996	.998			
100	.003	.007	.017	.023	.031	.058	.121	.156	.201	.318	.525	.609	.719	.859	.962	.979	.989			
125	.002	.004	.011	.015	.020	.037	.079	.103	.135	.219	.385	.461	.570	.735	.900	.938	.965	.990	.999	
150	.001	.003	.007	.010	.014	.026	.056	.073	.096	.159	.290	.353	.450	.614	.817	.874	.921	.974	.996	.999
200	.001	.002	.004	.006	.008	.015	.032	.042	.055	.093	.177	.220	.291	.425	.638	.715	.791	.904	.977	.988
250	.001	.001	.003	.004	.005	.009	.021	.027	.036	.061	.118	.148	.199	.303	.488	.566	.650	.800	.933	.960
300	.001	.002	.001	.004	.007	.014	.019	.019	.019	.019	.084	.106	.144	.223	.376	.446	.526	.687	.866	.912
350	.001	.001	.002	.003	.005	.011	.014	.014	.018	.032	.062	.079	.108	.170	.286	.356	.428	.583	.787	.848
400	.001	.001	.002	.003	.004	.008	.011	.014	.014	.014	.048	.061	.084	.133	.237	.288	.351	.494	.704	.776
450	.001	.001	.002	.003	.004	.006	.009	.011	.011	.011	.038	.049	.067	.107	.193	.237	.291	.420	.626	.702
500	.001	.001	.001	.002	.003	.005	.007	.009	.016	.016	.031	.040	.055	.088	.160	.197	.244	.359	.554	.632
600	.001	.001	.001	.002	.004	.007	.009	.009	.011	.011	.022	.028	.038	.062	.114	.142	.178	.268	.436	.509
KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj VN	50.1	48.1	45.8	45.0	44.3	43.0	41.6	41.2	40.8	40.1	39.4	39.2	39.0	38.7	38.3	38.2	38.1	38.0	37.8	37.8
psi	10378	7222	4717	4102	3579	2828	2199	2035	1890	1672	1474	1420	1370	1292	1218	1196	1176	1165	1154	1104
WOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	7	10	16	18	22	29	43	50	57	75	107	121	143	183	252	284	321	408	558	626
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.704	.894	.987	.995	.998															
10	.280	.477	.772	.857	.922	.982	.998	.999												
15	.138	.227	.505	.612	.722	.884	.961	.991	.996	.999										
20	.080	.155	.333	.424	.555	.736	.924	.959	.980	.996										
30	.037	.073	.155	.222	.293	.467	.728	.809	.879	.961	.994	.997	.999							
40	.021	.045	.099	.133	.179	.304	.534	.628	.723	.872	.971	.985	.994	.999						
50	.011	.027	.065	.087	.119	.209	.393	.478	.574	.734	.920	.953	.980	.995	.999					
75	.006	.012	.028	.040	.055	.100	.203	.258	.326	.485	.717	.793	.877	.955	.992	.996	.998			
100	.003	.007	.017	.023	.031	.058	.121	.156	.201	.318	.525	.609	.719	.859	.962	.979	.989			
125	.002	.004	.011	.015	.020	.037	.079	.103	.135	.219	.385	.461	.570	.735	.900	.938	.965	.990	.999	
150	.001	.003	.007	.010	.014	.026	.056	.073	.096	.159	.290	.353	.450	.614	.817	.874	.921	.974	.996	.999
200	.001	.002	.004	.006	.008	.015	.032	.042	.055	.093	.177	.220	.291	.425	.638	.715	.791	.904	.977	.988
250	.001	.001	.003	.004	.005	.009	.021	.027	.036	.061	.118	.148	.199	.303	.488	.566	.650	.800	.933	.960
300	.001	.002	.001	.004	.007	.014	.019	.019	.019	.019	.084	.106	.144	.223	.376	.446	.526	.687	.866	.912
350	.001	.001	.002	.003	.005	.011	.014	.014	.018	.032	.062	.079	.108	.170	.286	.356	.428	.583	.787	.848
400	.001	.001	.002	.003	.004	.008	.011	.014	.014	.014	.048	.061	.084	.133	.237	.288	.351	.494	.704	.776
450	.001	.001	.002	.003	.004	.006	.009	.011	.011	.011	.038	.049	.067	.107	.193	.237	.291	.420	.626	.702
500	.001	.001	.001	.002	.003	.005	.007	.009	.016	.016	.031	.040	.055	.088	.160	.197	.244	.359	.554	.632
600	.001	.001	.001	.002	.004	.007	.009	.009	.011	.011	.022	.028	.038	.062	.114	.142	.178	.268	.436	.509
KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj VN	50.1	48.1	45.8	45.0	44.3	43.0	41.6	41.2	40.8	40.1	39.4	39.2	39.0	38.7	38.3	38.2	38.1	38.0	37.8	37.8
psi	10378	7222	4717	4102	3579	2828	2199	2035	1890	1672	1474	1420	1370	1292	1218	1196	1176	1165	1154	1104
WOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	7	10	16	18	22	29	43	50	57	75	107	121	143	183	252	284	321	408	558	626
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.704	.894	.987	.995	.998															
10	.280	.477	.772	.857	.922	.982	.998	.999												
15	.138	.227	.505	.612	.722	.884	.961	.991	.996	.999										
20	.080	.155	.333	.424	.555	.736	.924	.959	.980	.996										
30	.037	.073	.155	.222	.293	.467	.728	.809	.879	.961	.994	.997	.999							
40	.021	.045	.099	.133	.179	.304	.534	.628	.723	.872	.971	.985	.994	.999						
50	.011	.027	.065	.087	.119	.209	.393	.478	.574	.734	.920	.953	.980	.995	.999					
75	.006	.012	.028	.040	.055	.100	.203	.258	.326	.485	.717	.793	.877	.955	.992	.996	.998			
100	.003	.007	.017	.023	.031	.058	.121	.156	.201	.318	.525	.609	.719	.859	.962	.979	.989			
125	.002	.004	.011	.015	.020	.037	.079	.103	.135	.219	.385	.461	.570	.735	.900	.938	.965	.990	.999	
150	.001	.003	.007	.010	.014	.026	.056	.073	.096	.159	.290	.353	.450	.614	.817	.874	.921	.974	.996	.999
200	.001	.002	.004	.006	.008	.015	.032	.042	.055	.093	.177	.220	.291	.425	.638	.715	.791	.904	.977	.988
250	.001	.001	.003	.004	.005	.009	.021	.027	.036	.061	.118	.148	.199	.303	.488	.566	.650	.800	.933	.960
300	.001	.002	.001	.004	.007	.014	.019	.019	.019	.019	.084	.106	.144	.223	.376	.446	.526	.687	.866	.912
350	.001	.001	.002	.003	.005	.011	.014	.014	.018	.032	.062	.079	.108	.170	.286	.356	.428	.583	.787	.848
400	.001	.001	.002	.003	.004	.008	.011	.014	.014	.014	.048	.061	.084	.133	.237	.288	.351	.494	.704	.776
450	.001	.001	.002	.003	.004	.006	.009	.011	.011	.011	.038	.049	.067	.107	.193	.237	.291	.420	.626	.702
500	.001	.001	.001	.002	.003	.005	.007	.009	.016	.016	.031	.040	.055	.088	.160	.197	.244	.359	.554	.632
600	.001	.001	.001	.002	.004	.007	.009	.009	.011	.011	.022	.028	.038	.062	.114	.142	.178	.268	.436	.509
KT	.001	.002	.005	.007	.010	.020	.05	.07												

Air-burst

38P4

38P7

Ground-burst

Air-burst

38P7

KT	0.01	0.02	0.05	0.07	0.10	0.15	0.20	0.30	0.50	1.00	2.00	5.00	10.00	20.00	50.00	70.00
Adi VN	70.3	67.8	64.4	63.2	61.9	59.4	56.1	51.2	48.1	47.0	45.8	43.7	41.2	40.3	38.5	35.9
psi									72.2	59.9	47.6	32.9	20.0	17.8	14.9	8.4
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HR	2	3	5	6	7	11	18	26	38	63	75	91	130	206	288	408
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																
5	106	213	475	599	731	920	998	999								
10	028	059	154	215	300	525	844	920	967	996						
15	012	027	072	103	149	290	594	718	833	963	999					
20	007	015	041	060	087	17	408	525	658	876	998	999				
30	003	007	019	027	040	084	212	290	394	641	812	960	985	998		
40	002	004	011	015	023	048	126	177	249	450	775	869	937	990	999	
50	001	002	007	010	015	031	083	118	169	322	631	749	854	967	998	999
75	001	001	003	004	006	014	038	055	080	161	371	481	607	832	975	990
100	001	002	002	004	008	022	031	046	095	233	314	419	657	908	954	981
125	001	002	002	005	014	020	030	062	157	217	287	507	805	846	942	990
150	001	001	002	004	010	014	021	044	113	157	219	393	655	796	881	974
200	001	001	001	002	005	008	012	025	065	092	131	249	502	612	725	904
250	001	001	001	001	003	005	007	016	042	060	086	168	385	464	577	800
300	001	001	001	001	001	002	004	011	030	042	061	121	273	355	456	687
350	001	002	003	004	008	022	031	045	090	210	278	365	583	630	800	894
400	001	002	003	006	017	024	035	070	168	222	296	494	754	834	974	999
450	001	002	002	005	013	019	028	056	134	181	243	420	679	768	904	993
500	001	001	001	001	011	015	022	046	110	149	203	359	608	702	853	977
600	001	001	001	001	001	001	001	003	007	011	016	032	078	107	146	268
KT	0.01	0.02	0.05	0.07	0.10	0.15	0.20	0.30	0.50	1.00	2.00	5.00	10.00	20.00	50.00	70.00
Adi VN	72.3	67.3	64.4	63.2	61.9	59.4	56.1	51.2	48.1	47.0	45.8	43.7	41.2	40.3	38.5	35.9
psi									72.2	59.9	47.6	32.9	20.0	17.8	14.9	8.4
HOB	4	5	7	8	9	12	17	23	30	44	51	59	79	116	139	204
HR	2	3	5	6	7	11	18	22	27	39	65	78	95	139	221	261
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																
5	097	201	461	585	723	920	998	998								
10	025	055	144	209	294	524	850	925	970	997						
15	011	025	069	100	145	269	602	728	843	968	998	999				
20	006	014	040	058	085	177	414	536	672	889	930	997	999			
30	003	006	014	026	039	083	216	298	406	681	976	968	989	999		
40	002	004	010	015	022	048	129	182	258	469	799	889	950	993		
50	001	002	006	009	014	031	085	121	175	338	660	777	877	975	998	999
75	001	001	003	004	006	014	038	055	083	170	396	511	642	861	983	993
100	001	001	002	004	008	022	031	046	095	233	314	419	657	908	954	981
125	001	002	002	005	014	020	030	062	157	217	287	507	805	846	942	990
150	001	001	002	004	010	014	021	044	113	157	219	393	655	796	881	974
200	001	001	001	001	003	005	007	016	042	060	086	168	385	464	577	800
250	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001
300	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001
350	001	002	003	004	008	022	031	045	090	210	278	365	583	630	800	894
400	001	002	003	006	017	024	035	070	168	222	296	494	754	834	974	999
450	001	002	002	005	013	019	028	056	134	181	243	420	679	768	904	993
500	001	001	001	001	011	015	022	046	110	149	203	359	608	702	853	977
600	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001
KT	0.01	0.02	0.05	0.07	0.10	0.15	0.20	0.30	0.50	1.00	2.00	5.00	10.00	20.00	50.00	70.00
Adi VN	72.3	67.3	64.4	63.2	61.9	59.4	56.1	51.2	48.1	47.0	45.8	43.7	41.2	40.3	38.5	35.9
psi									72.2	59.9	47.6	32.9	20.0	17.8	14.9	8.4
HOB	4	5	7	8	9	12	17	23	30	44	51	59	79	116	139	204
HR	2	3	5	6	7	11	18	22	27	39	65	78	95	139	221	261
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																
5	097	201	461	585	723	920	998	998								
10	025	055	144	209	294	524	850	925	970	997						
15	011	025	069	100	145	269	602	728	843	968	998	999				
20	006	014	040	058	085	177	414	536	672	889	930	997	999			
30	003	006	014	026	039	083	216	298	406	681	976	968	989	999		
40	002	004	010	015	022	048	129	182	258	469	799	889	950	993		
50	001	002	006	009	014	031	085	121	175	338	660	777	877	975	998	999
75	001	001	003	004	006	014	038	055	083	170	396	511	642	861	983	993
100	001	001	002	004	008	022	031	046	095	233	314	419	657	908	954	981
125	001	002	002	005	014	020	030	062	157	217	287	507	805	846	942	990
150	001	001	002	004	010	014	021	044	113	157	219	393	655	796	881	974
200	001	001	001	001	003	005	007	016	042	060	086	168	385	464	577	800
250	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001
300	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001
350	001	002	003	004	008	022	031	045	090	210	278	365	583	630	800	894
400	001	002	003	006	017	024	035	070	168	222	296	494	754	834	974	999
450	001	002	002	005	013	019	028	056	134	181	243	420	679	768	904	993
500	001	001	001	001	011	015	022	046	110	149	203	359	608	702	853	977
600	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001

38P7

38P8

Ground-burst

38P8																					
KT	Adj vs	0.01	0.02	0.05	0.10	0.20	0.500	0.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00					
0	71.3	65.2	65.9	64.7	63.4	62.8	57.5	55.3	55.0	52.5	50.8	72.89	58.41	38.40	22.79	19.04	15.47	11.45	7.90	7.01	
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	3	5	5	7	10	16	20	24	35	58	70	85	123	199	236	283	438	614	719	719	
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
81	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
87	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
88	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
92	0	0	0	0	0	0	0	0	0												

Air-burst

38P8

39P0

Ground-burst

Air-burst

39P0

KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.506	.707	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj W	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0
PMI	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%
50B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MR	14	18	24	27	31	39	53	59	66	83	113	127	143	180	244	273	307	387	526	588
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	.980	.995	.999																	
5	.719	.850	.955	.974	.986	.997	.999													
10	.650	.807	.938	.956	.966	.974	.980	.987	.990											
15	.602	.738	.868	.906	.926	.944	.959	.963	.968											
20	.561	.681	.804	.842	.865	.883	.899	.903	.908											
30	.514	.624	.744	.782	.805	.823	.838	.843	.848	.853	.858	.863	.868	.873	.878	.883	.888	.893	.898	.903
40	.474	.584	.704	.742	.765	.783	.798	.803	.808	.813	.818	.823	.828	.833	.838	.843	.848	.853	.858	.863
50	.434	.544	.664	.702	.725	.743	.758	.763	.768	.773	.778	.783	.788	.793	.798	.803	.808	.813	.818	.823
75	.354	.464	.584	.622	.645	.663	.678	.683	.688	.693	.698	.703	.708	.713	.718	.723	.728	.733	.738	.743
100	.274	.384	.504	.542	.565	.583	.598	.603	.608	.613	.618	.623	.628	.633	.638	.643	.648	.653	.658	.663
125	.204	.314	.434	.472	.495	.513	.528	.533	.538	.543	.548	.553	.558	.563	.568	.573	.578	.583	.588	.593
150	.144	.254	.374	.412	.435	.453	.468	.473	.478	.483	.488	.493	.498	.503	.508	.513	.518	.523	.528	.533
200	.084	.194	.314	.352	.375	.393	.408	.413	.418	.423	.428	.433	.438	.443	.448	.453	.458	.463	.468	.473
250	.024	.134	.254	.292	.315	.333	.348	.353	.358	.363	.368	.373	.378	.383	.388	.393	.398	.403	.408	.413
300	.004	.114	.234	.272	.295	.313	.328	.333	.338	.343	.348	.353	.358	.363	.368	.373	.378	.383	.388	.393
350	.000	.104	.224	.262	.285	.303	.318	.323	.328	.333	.338	.343	.348	.353	.358	.363	.368	.373	.378	.383
400	.000	.104	.224	.262	.285	.303	.318	.323	.328	.333	.338	.343	.348	.353	.358	.363	.368	.373	.378	.383
450	.000	.104	.224	.262	.285	.303	.318	.323	.328	.333	.338	.343	.348	.353	.358	.363	.368	.373	.378	.383
500	.000	.104	.224	.262	.285	.303	.318	.323	.328	.333	.338	.343	.348	.353	.358	.363	.368	.373	.378	.383
600	.000	.104	.224	.262	.285	.303	.318	.323	.328	.333	.338	.343	.348	.353	.358	.363	.368	.373	.378	.383
KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj W	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0
PMI	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%
50B	7	9	12	14	16	20	27	30	34	42	58	64	73	91	124	139	156	177	267	299
MR	15	19	25	29	32	40	55	61	69	87	118	132	149	198	255	285	321	404	549	614
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	.984	.996	.999																	
5	.746	.870	.963	.979	.983	.987	.990	.993	.995	.996										
10	.677	.801	.921	.938	.942	.946	.949	.952	.954	.956										
15	.611	.731	.849	.866	.870	.874	.877	.880	.883	.886										
20	.545	.665	.783	.800	.804	.808	.811	.814	.817	.820	.823	.826	.829	.832	.835	.838	.841	.844	.847	.850
30	.479	.599	.717	.734	.738	.742	.746	.749	.752	.755	.758	.761	.764	.767	.770	.773	.776	.779	.782	.785
40	.413	.533	.651	.668	.672	.676	.679	.682	.685	.688	.691	.694	.697	.700	.703	.706	.709	.712	.715	.718
50	.347	.467	.585	.602	.606	.610	.613	.616	.619	.622	.625	.628	.631	.634	.637	.640	.643	.646	.649	.652
75	.281	.401	.519	.536	.540	.544	.547	.550	.553	.556	.559	.562	.565	.568	.571	.574	.577	.580	.583	.586
100	.215	.335	.453	.470	.474	.478	.481	.484	.487	.490	.493	.496	.499	.502	.505	.508	.511	.514	.517	.520
125	.149	.269	.387	.404	.408	.412	.415	.418	.421	.424	.427	.430	.433	.436	.439	.442	.445	.448	.451	.454
150	.083	.203	.321	.338	.342	.346	.349	.352	.355	.358	.361	.364	.367	.370	.373	.376	.379	.382	.385	.388
200	.023	.143	.261	.278	.282	.286	.289	.292	.295	.298	.301	.304	.307	.310	.313	.316	.319	.322	.325	.328
250	.003	.123	.241	.258	.262	.266	.269	.272	.275	.278	.281	.284	.287	.290	.293	.296	.299	.302	.305	.308
300	.000	.113	.231	.248	.252	.256	.259	.262	.265	.268	.271	.274	.277	.280	.283	.286	.289	.292	.295	.298
350	.000	.113	.231	.248	.252	.256	.259	.262	.265	.268	.271	.274	.277	.280	.283	.286	.289	.292	.295	.298
400	.000	.113	.231	.248	.252	.256	.259	.262	.265	.268	.271	.274	.277	.280	.283	.286	.289	.292	.295	.298
450	.000	.113	.231	.248	.252	.256	.259	.262	.265	.268	.271	.274	.277	.280	.283	.286	.289	.292	.295	.298
500	.000	.113	.231	.248	.252	.256	.259	.262	.265	.268	.271	.274	.277	.280	.283	.286	.289	.292	.295	.298
600	.000	.113	.231	.248	.252	.256	.259	.262	.265	.268	.271	.274	.277	.280	.283	.286	.289	.292	.295	.298

39P0

39P9

Ground-burst

Air-burst

39P9

KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj Wt	74.1	71.5	68.2	66.9	65.6	63.1	59.8	58.5	57.2	54.7	51.4	50.2	49.0	46.5	43.4	42.3	41.1	39.0	36.4	35.6
psi																				
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HR	2	2	4	5	6	5	14	17	21	31	51	61	75	109	180	215	260	307	603	709
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.063	.142	.340	.448	.579	.823	.979	.993	.998											
10	.018	.038	.101	.143	.204	.302	.415	.426	.512	.986	.999									
15	.008	.017	.046	.067	.097	.197	.346	.569	.702	.905	.992	.998	.999							
20	.004	.010	.026	.038	.056	.117	.208	.306	.509	.744	.963	.986	.996							
30	.002	.004	.012	.017	.025	.054	.142	.198	.279	.436	.822	.905	.959	.995						
40	.001	.002	.007	.010	.014	.031	.083	.118	.170	.326	.644	.764	.868	.974	.999					
50	.001	.002	.004	.006	.009	.020	.054	.078	.113	.225	.404	.619	.748	.877	.995	.998				
75	.001	.002	.003	.004	.005	.024	.035	.062	.108	.268	.361	.479	.722	.951	.980	.993	.999			
100	.001	.002	.002	.002	.003	.014	.020	.030	.063	.163	.226	.313	.540	.850	.923	.967	.997			
125	.001	.001	.001	.001	.003	.009	.013	.019	.041	.108	.152	.216	.399	.724	.829	.911	.947	.999		
150	.001	.001	.001	.001	.002	.006	.009	.013	.028	.076	.109	.156	.301	.602	.723	.833	.946	.997	.999	
200	.001	.001	.001	.001	.001	.003	.005	.008	.016	.044	.063	.092	.184	.415	.530	.658	.804	.985	.994	
250	.001	.001	.001	.001	.001	.002	.003	.005	.010	.028	.041	.060	.123	.294	.390	.508	.770	.953	.975	
300	.001	.001	.001	.001	.001	.002	.002	.003	.007	.020	.029	.042	.087	.217	.293	.396	.653	.899	.948	
350	.001	.001	.001	.001	.001	.001	.002	.002	.005	.015	.021	.031	.065	.165	.227	.311	.548	.829	.901	
400	.001	.001	.001	.001	.001	.001	.001	.002	.004	.011	.016	.024	.050	.129	.179	.249	.461	.754	.863	
450	.001	.001	.001	.001	.001	.001	.001	.001	.003	.009	.013	.019	.040	.104	.145	.204	.389	.678	.780	
500	.001	.001	.001	.001	.001	.001	.001	.001	.003	.007	.010	.015	.032	.085	.120	.169	.331	.607	.715	
600	.001	.001	.001	.001	.001	.001	.001	.001	.002	.005	.007	.011	.023	.060	.085	.121	.246	.445	.593	

KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj Wt	74.1	71.5	68.2	66.9	65.6	63.1	59.8	58.5	57.2	54.7	51.4	50.2	49.0	46.5	43.4	42.3	41.1	39.0	36.4	35.6
psi																				
HOB	4	5	7	7	9	11	16	14	21	28	41	47	55	73	109	125	146	197	294	340
HR	2	2	4	5	6	8	14	17	21	31	52	64	78	115	191	230	279	404	649	769
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.061	.129	.322	.429	.561	.814	.979	.993	.999											
10	.016	.034	.094	.135	.195	.374	.713	.826	.914	.987	.999									
15	.007	.015	.043	.063	.093	.191	.444	.570	.706	.911	.944	.948	.949							
20	.004	.009	.025	.036	.053	.113	.286	.387	.513	.773	.963	.986	.997							
30	.002	.004	.011	.016	.024	.052	.141	.199	.282	.506	.837	.917	.946	.996						
40	.001	.002	.005	.007	.014	.032	.082	.118	.172	.335	.653	.784	.895	.989						
50	.001	.001	.004	.006	.009	.019	.054	.078	.114	.232	.513	.647	.771	.941	.999					
75	.001	.002	.003	.004	.005	.024	.035	.063	.112	.241	.380	.504	.762	.943	.986	.999				
100	.001	.001	.001	.002	.002	.005	.014	.020	.030	.065	.171	.239	.331	.573	.878	.941	.977	.997		
125	.001	.001	.001	.001	.001	.003	.004	.013	.019	.042	.114	.162	.231	.427	.761	.861	.933	.940	.999	
150	.001	.001	.001	.001	.001	.002	.006	.009	.013	.029	.081	.116	.167	.325	.643	.763	.866	.972	.999	.999
200	.001	.001	.001	.001	.001	.001	.003	.005	.008	.017	.046	.067	.099	.201	.452	.574	.704	.901	.990	.996
250	.001	.001	.001	.001	.001	.001	.002	.003	.005	.011	.030	.044	.064	.134	.324	.428	.554	.795	.967	.986
300	.001	.001	.001	.001	.001	.001	.002	.002	.003	.007	.021	.031	.045	.096	.240	.326	.436	.681	.924	.964
350	.001	.001	.001	.001	.001	.001	.001	.002	.002	.005	.015	.023	.033	.071	.184	.253	.347	.577	.865	.929
400	.001	.001	.001	.001	.001	.001	.001	.002	.004	.012	.017	.026	.055	.144	.201	.280	.408	.797	.881	
450	.001	.001	.001	.001	.001	.001	.001	.002	.004	.009	.014	.020	.044	.116	.163	.220	.315	.726	.825	
500	.001	.001	.001	.001	.001	.001	.001	.001	.003	.008	.011	.017	.036	.095	.135	.191	.354	.657	.765	
600	.001	.001	.001	.001	.001	.001	.001	.001	.002	.005	.009	.012	.025	.067	.096	.139	.264	.534	.648	

39P9

40P8

Ground-burst

[illegible]

Air-burst

4IP6

Ground-burst

Air-burst

4IP6

KT	001	002	005	007	010	020	05	07	10	20	30	50	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj. VN	71.6	69.1	65.4	64.5	63.3	60.8	57.5	56.3	55.1	52.8	49.8	48.9	47.7	45.8	43.6	42.9	42.2	41.0	39.7	39.3	
psi																					
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MR	2	3	5	5	7	10	16	20	24	35	56	67	81	116	178	208	244	311	485	556	
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																					
5	.091	.185	.424	.544	.678	.890	.990	.997	.999												
10	.024	.051	.113	.186	.262	.471	.799	.888	.950	.993											
15	.011	.023	.062	.088	.128	.252	.536	.660	.784	.942	.996	.999									
20	.006	.013	.035	.051	.074	.152	.358	.468	.598	.832	.978	.992	.997								
30	.003	.006	.016	.023	.034	.071	.182	.251	.344	.577	.871	.934	.972	.986							
40	.002	.003	.009	.013	.019	.041	.108	.151	.214	.393	.711	.816	.900	.980	.999						
50	.001	.002	.006	.008	.012	.026	.071	.100	.144	.277	.561	.679	.794	.940	.994	.998	.999				
75	.001	.003	.004	.006	.012	.032	.046	.067	.136	.213	.316	.413	.530	.760	.949	.976	.990	.998			
100	.001	.001	.002	.003	.007	.018	.026	.038	.079	.195	.263	.353	.570	.845	.910	.955	.991	.999			
125		.001	.001	.002	.004	.012	.017	.025	.052	.130	.179	.246	.425	.716	.810	.887	.970	.997	.999		
150		.001	.001	.001	.003	.008	.012	.017	.036	.093	.128	.179	.323	.594	.699	.798	.930	.980	.996		
200			.001	.001	.001	.002	.005	.007	.010	.021	.053	.075	.106	.199	.308	.506	.615	.807	.934	.976	
250				.001	.001	.001	.003	.004	.006	.013	.035	.049	.089	.133	.289	.369	.466	.649	.885	.932	
300					.001	.001	.002	.003	.004	.009	.024	.034	.049	.095	.212	.276	.358	.546	.795	.885	
350					.001	.001	.002	.002	.003	.007	.019	.025	.036	.071	.161	.213	.280	.446	.700	.784	
400					.001	.001	.002	.002	.005	.014	.019	.028	.055	.127	.168	.224	.267	.411	.611	.702	
450					.001	.001	.002	.004	.011	.015	.022	.044	.102	.136	.182	.205	.331	.531	.623		
500					.001	.001	.002	.003	.009	.012	.018	.035	.083	.112	.151	.254	.462	.552			
600					.001	.001	.001	.001	.002	.006	.009	.012	.025	.059	.079	.108	.187	.334	.433		
KT	001	003	005	007	010	020	05	07	10	20	30	50	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj. VN	71.5	69.1	65.4	64.5	63.3	60.8	57.5	56.3	55.1	52.8	49.8	48.9	47.7	45.8	43.6	42.9	42.2	41.0	39.7	39.3	
psi																					
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MR	2	3	5	5	7	10	16	20	24	35	56	67	81	116	178	208	244	311	485	556	
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																					
5	.083	.172	.407	.529	.666	.987	.991	.997	.999												
10	.021	.047	.126	.179	.254	.466	.802	.902	.953	.994											
15	.010	.021	.057	.085	.124	.249	.519	.667	.742	.948	.997	.999									
20	.005	.012	.031	.049	.072	.150	.361	.475	.609	.944	.992	.994	.998								
30	.007	.005	.015	.022	.033	.070	.184	.255	.352	.593	.886	.945	.978	.997							
40	.001	.003	.004	.012	.017	.040	.109	.154	.220	.407	.733	.816	.915	.985	.999						
50	.001	.002	.005	.008	.012	.026	.071	.102	.148	.244	.585	.705	.814	.952	.996	.998	.999				
75	.001	.007	.004	.005	.012	.032	.047	.069	.142	.234	.334	.437	.559	.780	.961	.983	.993	.999			
100		.001	.002	.003	.007	.018	.027	.040	.083	.207	.291	.377	.605	.872	.930	.967	.994	.999			
125		.001	.001	.001	.002	.004	.012	.017	.026	.054	.133	.192	.265	.457	.754	.842	.912	.979	.998	.999	
150		.001	.001	.001	.003	.008	.012	.017	.036	.093	.128	.179	.323	.594	.699	.798	.930	.980	.996		
200			.001	.001	.001	.002	.005	.007	.010	.021	.053	.075	.106	.199	.308	.506	.615	.807	.934	.976	
250				.001	.001	.001	.003	.004	.006	.013	.035	.049	.089	.133	.289	.369	.466	.649	.885	.932	
300					.001	.001	.002	.003	.004	.009	.024	.034	.049	.095	.212	.276	.358	.546	.795	.885	
350					.001	.001	.002	.002	.003	.007	.019	.025	.036	.071	.161	.213	.280	.446	.700	.784	
400					.001	.001	.002	.002	.005	.014	.019	.028	.055	.127	.168	.224	.267	.411	.611	.702	
450					.001	.001	.002	.004	.011	.015	.022	.044	.102	.136	.182	.205	.331	.531	.623		
500					.001	.001	.002	.003	.009	.012	.018	.035	.083	.112	.151	.254	.462	.552			
600					.001	.001	.001	.001	.002	.006	.009	.012	.025	.059	.079	.108	.187	.334	.433		
KT	001	003	005	007	010	020	05	07	10	20	30	50	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj. VN	71.5	69.1	65.4	64.5	63.3	60.8	57.5	56.3	55.1	52.8	49.8	48.9	47.7	45.8	43.6	42.9	42.2	41.0	39.7	39.3	
psi																					
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MR	2	3	5	5	7	10	16	20	24	35	56	67	81	116	178	208	244	311	485	556	
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																					
5	.083	.172	.407	.529	.666	.987	.991	.997	.999												
10	.021	.047	.126	.179	.254	.466	.802	.902	.953	.994											
15	.010	.021	.057	.085	.124	.249	.519	.667	.742	.948	.997	.999									
20	.005	.012	.031	.049	.072	.150	.361	.475	.609	.944	.992	.994	.998								
30	.007	.005	.015	.022	.033	.070	.184	.255	.352	.593	.886	.945	.978	.997							
40	.001	.003	.004	.012	.017	.040	.109	.154	.220	.407	.733	.816	.915	.985	.999						
50	.001	.002	.005	.008	.012	.026	.071	.102	.148	.244	.585	.705	.814	.952	.996	.998	.999				
75	.001	.007	.004	.005	.012	.032	.047	.069	.142	.234	.334	.437	.559	.780	.961	.983	.993	.999			
100		.001	.002	.003	.007	.018	.027	.040	.083	.207	.291	.377	.605	.872	.930	.967	.994	.999			
125		.001	.001	.001	.002	.004	.012	.017	.026	.054	.133	.192	.265	.457	.754	.842	.912	.979	.998	.999	
150		.001	.001	.001	.003	.008	.012	.017	.036	.093	.128	.179	.323	.594	.699	.798	.930	.980	.996		
200			.001	.001	.001	.002	.005	.007	.010	.021	.053	.075	.106	.199	.308	.506	.615	.807	.934	.976	
250				.001	.001	.001	.003	.004	.006	.013	.035	.049	.089	.133	.289	.369	.466	.649	.885	.932	
300					.001	.001	.002	.003	.004	.009	.024	.034	.049	.095	.212	.276	.358	.546	.795	.885	
350					.001	.001	.002	.002	.003	.007	.019	.025	.036	.071	.161	.213	.280	.446	.700	.784	
400					.001	.001	.002	.002	.005	.014	.019	.028	.055	.127	.168	.224	.267	.411	.611	.702	
450					.001	.001	.002	.004	.011	.015	.022	.044	.102	.136	.182	.205	.331	.531	.623		
500					.001	.001	.002	.003	.009	.012	.018	.035	.083	.112	.151	.254	.462	.552			
600					.001	.001	.001	.001	.002	.006	.009	.012	.025	.059	.079	.108	.187	.334	.433		
KT	001	003	005	007	010	020															

42P6

Ground-burst

Air-burst

		Ground-burst										Air-burst									
		KT	Adj	VR	psi	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		72.6	70.1	68.8	65.5	64.3	61.8	58.5	57.3	56.1	53.8	50.8	49.8	48.7	46.8	44.6	43.9	43.2	42.0	40.7	40.3
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5	.081	.166	.387	.503	.637	.864	.986	.995	.999	.999	.999	.999	.999	.999	.999	.999	.999	.999	.999
		10	.021	.045	.119	.167	.238	.322	.432	.532	.624	.700	.760	.800	.830	.850	.860	.860	.860	.860	.860
		15	.009	.020	.055	.079	.114	.157	.207	.257	.307	.357	.407	.457	.507	.557	.607	.657	.707	.757	.807
		20	.005	.011	.031	.045	.066	.106	.136	.166	.206	.236	.266	.296	.326	.356	.386	.416	.446	.476	.506
		30	.002	.005	.014	.020	.030	.043	.063	.083	.103	.123	.143	.163	.183	.203	.223	.243	.263	.283	.303
		40	.001	.003	.008	.012	.017	.026	.036	.046	.056	.066	.076	.086	.096	.106	.116	.126	.136	.146	.156
		50	.001	.002	.005	.007	.011	.023	.063	.089	.128	.150	.170	.180	.190	.200	.210	.220	.230	.240	.250
		75	.001	.002	.003	.005	.010	.028	.041	.060	.121	.286	.377	.489	.722	.833	.967	.986	.998	.999	.999
		100	.001	.002	.003	.006	.016	.023	.034	.071	.175	.237	.321	.529	.813	.987	.991	.999	.999	.999	.999
		125	.001	.001	.002	.004	.010	.015	.022	.046	.116	.160	.222	.380	.676	.775	.861	.959	.995	.998	.998
		150	.001	.001	.002	.004	.010	.015	.022	.046	.116	.160	.222	.380	.676	.775	.861	.959	.995	.998	.998
		175	.001	.001	.002	.004	.010	.015	.022	.046	.116	.160	.222	.380	.676	.775	.861	.959	.995	.998	.998
		200	.001	.001	.002	.004	.010	.015	.022	.046	.116	.160	.222	.380	.676	.775	.861	.959	.995	.998	.998
		250	.001	.001	.002	.004	.010	.015	.022	.046	.116	.160	.222	.380	.676	.775	.861	.959	.995	.998	.998
		300	.001	.001	.002	.004	.010	.015	.022	.046	.116	.160	.222	.380	.676	.775	.861	.959	.995	.998	.998
		350	.001	.001	.002	.004	.010	.015	.022	.046	.116	.160	.222	.380	.676	.775	.861	.959	.995	.998	.998
		400	.001	.001	.002	.004	.010	.015	.022	.046	.116	.160	.222	.380	.676	.775	.861	.959	.995	.998	.998
		450	.001	.001	.002	.004	.010	.015	.022	.046	.116	.160	.222	.380	.676	.775	.861	.959	.995	.998	.998
		500	.001	.001	.002	.004	.010	.015	.022	.046	.116	.160	.222	.380	.676	.775	.861	.959	.995	.998	.998
		550	.001	.001	.002	.004	.010	.015	.022	.046	.116	.160	.222	.380	.676	.775	.861	.959	.995	.998	.998
		600	.001	.001	.002	.004	.010	.015	.022	.046	.116	.160	.222	.380	.676	.775	.861	.959	.995	.998	.998
		KT	72.6	70.1	68.8	65.5	64.3	61.8	58.5	57.3	55.1	51.9	50.8	49.8	48.7	46.8	44.6	43.9	43.2	42.0	40.3
		Adj	VR	psi	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5	.071	.153	.370	.486	.622	.859	.986	.996	.999	.999	.999	.999	.999	.999	.999	.999	.999	.999	.999
		10	.013	.041	.117	.159	.228	.325	.466	.623	.754	.931	.974	.991	.997	.999	.999	.999	.999	.999	.999
		15	.008	.019	.057	.075	.110	.173	.236	.326	.434	.564	.680	.794	.907	.999	.999	.999	.999	.999	.999
		20	.005	.017	.079	.043	.044	.131	.326	.434	.564	.680	.794	.907	.999	.999	.999	.999	.999	.999	.999
		30	.002	.005	.013	.019	.029	.062	.164	.224	.319	.449	.587	.727	.863	.996	.999	.999	.999	.999	.999
		40	.001	.003	.007	.011	.016	.035	.096	.137	.196	.260	.361	.501	.601	.802	.998	.999	.999	.999	.999
		50	.001	.002	.005	.007	.010	.023	.063	.090	.131	.238	.341	.462	.581	.701	.821	.998	.999	.999	.999
		75	.001	.002	.003	.005	.010	.029	.041	.061	.126	.201	.301	.394	.515	.751	.947	.998	.999	.999	.999
		100	.001	.002	.003	.006	.016	.023	.035	.073	.155	.252	.342	.561	.842	.909	.995	.999	.999	.999	.999
		125	.001	.001	.002	.004	.010	.015	.022	.046	.123	.171	.237	.417	.713	.808	.887	.970	.997	.999	.999
		150	.001	.001	.002	.004	.010	.015	.022	.046	.123	.171	.237	.417	.713	.808	.887	.970	.997	.999	.999
		200	.001	.001	.002	.004	.010	.015	.022	.046	.123	.171	.237	.417	.713	.808	.887	.970	.997	.999	.999
		250	.001	.001	.002	.004	.010	.015	.022	.046	.123	.171	.237	.417	.713	.808	.887	.970	.997	.999	.999
		300	.001	.001	.002	.004	.010	.015	.022	.046	.123	.171	.237	.417	.713	.808	.887	.970	.997	.999	.999
		350	.001	.001	.002	.004	.010	.015	.022	.046	.123	.171	.237	.417	.713	.808	.887	.970	.997	.999	.999
		400	.001	.001	.002	.004	.010	.015	.022	.046	.123	.171	.237	.417	.713	.808	.887	.970	.997	.999	.999
		450	.001	.001	.002	.004	.010	.015	.022	.046	.123	.171	.237	.417	.713	.808	.887	.970	.997	.999	.999
		500	.001	.001	.002	.004	.010	.015	.022	.046	.123	.171	.237	.417	.713	.808	.887	.970	.997	.999	.999
		550	.001	.001	.002	.004	.010	.015	.022	.046	.123	.171	.237	.417	.713	.808	.887	.970	.997	.999	.999
		600	.001	.001	.002	.004	.010	.015	.022	.046	.123	.171	.237	.417	.713	.808	.887	.970	.997	.999	.999

42P6

48P9

Ground-burst

Air-burst

48P9

KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	30.00	70.00
Adj VN	81.1	77.2	75.9	74.6	72.1	68.8	67.5	66.2	63.7	62.4	59.2	58.0	55.5	52.4	51.3	50.1	48.0	45.4	44.6	
PSI	0	1	2	3	5	8	10	12	19	29	35	43	63	103	124	150	215	342	404	
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.023	.050	.132	.195	.260	.469	.801	.891	.932	.994	.982	.994	.998							
10	.006	.013	.035	.050	.074	.152	.360	.472	.604	.842	.889	.947	.980	.998						
15	.001	.006	.016	.023	.034	.071	.183	.253	.349	.530	.736	.862	.922	.986	.999					
20	.001	.003	.009	.013	.019	.041	.108	.153	.218	.404										
30	.001	.001	.004	.006	.009	.018	.050	.072	.104	.210	.467	.591	.722	.914	.993	.998				
40	.001	.002	.003	.005	.010	.029	.041	.060	.125	.304	.405	.529	.779	.964	.987	.996				
50	.001	.001	.002	.003	.007	.018	.027	.039	.082	.209	.286	.387	.535	.709	.938	.984	.998			
75	.001	.001	.001	.001	.003	.008	.012	.019	.038	.100	.141	.201	.375	.697	.807	.894	.960	.999		
100	.001	.001	.001	.001	.002	.005	.007	.010	.021	.058	.082	.119	.235	.504	.625	.743	.922	.993	.997	
125						.001	.003	.004	.006	.014	.037	.054	.078	.159	.367	.476	.602	.874	.975	.990
150						.001	.002	.003	.004	.010	.026	.038	.055	.114	.275	.366	.481	.722	.939	.972
200						.001	.001	.002	.002	.005	.015	.021	.031	.066	.167	.229	.314	.530	.826	.900
250						.001	.001	.001	.002	.003	.009	.014	.020	.043	.111	.155	.217	.340	.692	.794
300						.001	.001	.001	.001	.002	.007	.010	.014	.030	.079	.111	.157	.293	.546	.681
350						.001	.001	.001	.002	.005	.007	.010	.022	.058	.083	.118	.227	.467	.577	
400						.001	.001	.001	.001	.001	.004	.005	.008	.017	.045	.064	.092	.179	.386	.468
450						.001	.001	.001	.001	.001	.003	.004	.006	.013	.036	.051	.076	.145	.322	.414
500						.001	.001	.001	.001	.001	.001	.002	.003	.005	.011	.029	.042	.080	.119	.272
600						.001	.001	.001	.001	.001	.002	.002	.004	.008	.020	.029	.042	.085	.199	.284
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	30.00	70.00
Adj VN	81.1	77.2	75.9	74.6	72.1	68.8	67.5	66.2	63.7	62.4	59.2	58.0	55.5	52.4	51.3	50.1	48.0	45.4	44.6	
PSI	0	1	2	3	5	8	10	12	19	29	35	43	63	103	124	150	215	342	404	
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	30.00	70.00
Adj VN	81.1	77.2	75.9	74.6	72.1	68.8	67.5	66.2	63.7	62.4	59.2	58.0	55.5	52.4	51.3	50.1	48.0	45.4	44.6	
PSI	0	1	2	3	5	8	10	12	19	29	35	43	63	103	124	150	215	342	404	
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	30.00	70.00
Adj VN	81.1	77.2	75.9	74.6	72.1	68.8	67.5	66.2	63.7	62.4	59.2	58.0	55.5	52.4	51.3	50.1	48.0	45.4	44.6	
PSI	0	1	2	3	5	8	10	12	19	29	35	43	63	103	124	150	215	342	404	
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	30.00	70.00
Adj VN	81.1	77.2	75.9	74.6	72.1	68.8	67.5	66.2	63.7	62.4	59.2	58.0	55.5	52.4	51.3	50.1	48.0	45.4	44.6	
PSI	0	1	2	3	5	8	10	12	19	29	35	43	63	103	124	150	215	342	404	
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	30.00	70.00
Adj VN	81.1	77.2	75.9	74.6	72.1	68.8	67.5	66.2	63.7	62.4	59.2	58.0	55.5	52.4	51.3	50.1	48.0	45.4	44.6	
PSI	0	1	2	3	5	8	10	12	19	29	35	43	63	103	124	150	215	342	404	
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	30.00	70.00
Adj VN	81.1	77.2	75.9	74.6	72.1	68.8	67.5	66.2	63.7	62.4	59.2	58.0	55.5	52.4	51.3	50.1	48.0	45.4	44.6	
PSI	0	1	2	3	5	8	10	12	19	29	35	43	63	103	124	150	215	342	404	
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	30.00	70.00
Adj VN	81.1	77.2	75.9	74.6	72.1	68.8	67.5	66.2	63.7	62.4	59.2	58.0	55.5	52.4	51.3	50.1	48.0	45.4	44.6	
PSI	0	1	2	3	5	8	10	12	19	29	35	43	63	103	124	150	215	342	404	
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	30.00	70.00
Adj VN	81.1	77.2	75.9	74.6	72.1	68.8	67.5	66.2	63.7	62.4	59.2	58.0	55.5	52.4	51.3	50.1	48.0	45.4	44.6	
PSI	0	1	2	3	5	8	10	12	19	29	35	43	63	103	124	150	215	342	404	
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	30.00	70.00
Adj VN	81.1	77.2	75.9	74.6	72.1	68.8	67.5	66.2	63.7	62.4	59.2	58.0	55.5	52.4	51.3	50.1	48.0	45.4	44.6	
PSI	0	1	2	3	5	8	10	12	19	29	35	43	63	103	124	150	215	342	404	
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	30.00	70.00
Adj VN	81.1	77.2	75.9	74.6	72.1	68.8	67.5	66.2	63.7	62.4	59.2	58.0	55.5	52.4	51.3	50.1	48.0	45.4	44.6	
PSI	0	1	2	3	5	8	10	12	19	29	35	43	63	103	124	150	215	342	404	
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	30.00	70.00
Adj VN	81.1	77.2	75.9	74.6	72.1	68.8	67.5	66.2	63.7	62.4	59.2	58.0	55.5	52.4	51.3	50.1	48.0	45.4	44.6	
PSI	0	1	2	3	5	8	10	12	19	29	35	43	63	103	124	150	215	342	404	
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0																				
5	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	30.00	70.00
Adj VN	81.1	77.2	75.9																	

Ground-burst

Air-burst

RT		Adj. W		HOS		WR		CEP		0		5		10		15		20		30		40		50		60		70		80		90		100		110		120		130		140		150		160		170		180		190		200		210		220		230		240		250		260		270		280		290		300		310		320		330		340		350		360		370		380		390		400		410		420		430		440		450		460		470		480		490		500		510		520		530		540		550		560		570		580		590		600		610		620		630		640		650		660		670		680		690		700		710		720		730		740		750		760		770		780		790		800		810		820		830		840		850		860		870		880		890		900		910		920		930		940		950		960		970		980		990		1000		1010		1020		1030		1040		1050		1060		1070		1080		1090		1100		1110		1120		1130		1140		1150		1160		1170		1180		1190		1200		1210		1220		1230		1240		1250		1260		1270		1280		1290		1300		1310		1320		1330		1340		1350		1360		1370		1380		1390		1400		1410		1420		1430		1440		1450		1460		1470		1480		1490		1500		1510		1520		1530		1540		1550		1560		1570		1580		1590		1600		1610		1620		1630		1640		1650		1660		1670		1680		1690		1700		1710		1720		1730		1740		1750		1760		1770		1780		1790		1800		1810		1820		1830		1840		1850		1860		1870		1880		1890		1900		1910		1920		1930		1940		1950		1960		1970		1980		1990		2000		2010		2020		2030		2040		2050		2060		2070		2080		2090		2100		2110		2120		2130		2140		2150		2160		2170		2180		2190		2200		2210		2220		2230		2240		2250		2260		2270		2280		2290		2300		2310		2320		2330		2340		2350		2360		2370		2380		2390		2400		2410		2420		2430		2440		2450		2460		2470		2480		2490		2500		2510		2520		2530		2540		2550		2560		2570		2580		2590		2600		2610		2620		2630		2640		2650		2660		2670		2680		2690		2700		2710		2720		2730		2740		2750		2760		2770		2780		2790		2800		2810		2820		2830		2840		2850		2860		2870		2880		2890		2900		2910		2920		2930		2940		2950		2960		2970		2980		2990		3000		3010		3020		3030		3040		3050		3060		3070		3080		3090		3100		3110		3120		3130		3140		3150		3160		3170		3180		3190		3200		3210		3220		3230		3240		3250		3260		3270		3280		3290		3300		3310		3320		3330		3340		3350		3360		3370		3380		3390		3400		3410		3420		3430		3440		3450		3460		3470		3480		3490		3500		3510		3520		3530		3540		3550		3560		3570		3580		3590		3600		3610		3620		3630		3640		3650		3660		3670		3680		3690		3700		3710		3720		3730		3740		3750		3760		3770		3780		3790		3800		3810		3820		3830		3840		3850		3860		3870		3880		3890		3900		3910		3920		3930		3940		3950		3960		3970		3980		3990		4000		4010		4020		4030		4040		4050		4060		4070		4080		4090		4100		4110		4120		4130		4140		4150		4160		4170		4180		4190		4200		4210		4220		4230		4240		4250		4260		4270		4280		4290		4300		4310		4320		4330		4340		4350		4360		4370		4380		4390		4400		4410		4420		4430		4440		4450		4460		4470		4480		4490		4500		4510		4520		4530		4540		4550		4560		4570		4580		4590		4600		4610		4620		4630		4640		4650		4660		4670		4680		4690		4700		4710		4720		4730		4740		4750		4760		4770		4780		4790		4800		4810		4820		4830		4840		4850		4860		4870		4880		4890		4900		4910		4920		4930		4940		4950		4960		4970		4980		4990		5000		5010		5020		5030		5040		5050		5060		5070		5080		5090		5100		5110		5120		5130		5140		5150		5160		5170		5180		5190		5200		5210		5220		5230		5240		5250		5260		5270		5280		5290		5300		5310		5320		5330		5340		5350		5360		5370		5380		5390		5400		5410		5420		5430		5440		5450		5460		5470		5480		5490		5500		5510		5520		5530		5540		5550		5560		5570		5580		5590		5600		5610		5620		5630		5640		5650		5660		5670		5680		5690		5700		5710		5720		5730		5740		5750		5760		5770		5780		5790		5800		5810		5820		5830		5840		5850		5860		5870		5880		5890		5900		5910		5920		5930		5940		5950		5960		5970		5980		5990		6000		6010		6020		6030		6040		6050		6060		6070		6080		6090		6100		6110		6120		6130		6140		6150		6160		6170		6180		6190		6200		6210		6220		6230		6240		6250		6260		6270		6280		6290		6300		6310		6320		6330		6340		6350		6360		6370		6380		6390		6400		6410		6420		6430		6440		6450		6460		6470		6480		6490		6500		6510		6520		6530		6540		6550		6560		6570		6580		6590		6600		6610		6620		6630		6640		6650		6660		6670		6680		6690		6700		6710		6720		6730		6740		6750		6760		6770		6780		6790		6800		6810		6820		6830		6840		6850		6860		6870		6880		6890		6900		6910		6920		6930		6940		6950		6960		6970		6980		6990		7000		7010		7020		7030		7040		7050		7060		7070		7080		7090		7100		7110		7120		7130		7140		7150		7160		7170		7180		7190		7200		7210		7220		7230		7240		7250		7260		7270		7280		7290		7300		7310		7320		7330		7340		7350		7360		7370		7380		7390		7400		7410		7420		7430		7440		7450		7460		7470		7480		7490		7500		7510		7520		7530		7540		7550		7560		7570		7580		7590		7600		7610		7620		7630		7640		7650		7660		7670		7680		7690		7700		7710		7720		7730		77	
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11Q7

Ground-burst

Air-burst

11Q7

KT	001	002	005	007	010	020	05	07	10	20	50	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj W	23.1	22.2	20.9	20.5	20.0	19.1	17.4	17.4	16.0	14.9	14.5	14.0	13.3	12.3	12.0	11.6	11.0	10.3	10.1	10.1
psi	133	94	80	51	42	37	34	31	28	25	23	21	19	17	16	15	14	13	12	11
HR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HR	19	54	81	95	111	152	231	269	315	410	634	742	876	1204	1821	2113	2471	3329	4880	5598
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996
5	993	994	995	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996
10	974	987	993	995	995	995	996	996	996	996	996	996	996	996	996	996	996	996	996	996
15	922	967	987	990	992	994	995	996	996	996	996	996	996	996	996	996	996	996	996	996
20	814	928	976	983	988	992	995	995	996	996	996	996	996	996	996	996	996	996	996	996
30	622	794	930	934	970	986	992	994	995	996	996	996	996	996	996	996	996	996	996	996
40	447	618	843	898	935	972	989	991	993	994	995	996	996	996	996	996	996	996	996	996
50	326	502	748	820	880	943	982	987	990	993	995	996	996	996	996	996	996	996	996	996
75	167	283	504	602	698	843	950	967	978	986	990	992	993	995	996	996	996	996	996	996
100	099	175	345	428	525	713	891	928	954	979	990	992	993	995	996	996	996	996	996	996
125	065	117	243	310	334	581	809	866	914	963	985	989	992	994	995	996	996	996	996	996
150	046	083	178	231	300	469	718	795	861	940	978	985	989	993	995	996	996	996	996	996
200	026	048	106	140	187	313	546	639	731	863	935	970	980	987	994	996	996	996	996	996
250	017	031	070	093	126	218	413	502	601	776	916	946	965	984	992	993	994	995	996	996
300	012	022	049	066	090	159	317	396	489	678	863	910	943	976	990	992	993	995	996	996
350	003	016	036	049	067	120	248	316	399	585	801	854	913	974	986	989	992	994	995	995
400	007	012	028	038	052	094	179	256	329	503	733	812	875	948	982	987	990	993	995	995
450	005	010	022	030	041	075	161	210	274	433	669	755	832	927	976	983	988	992	994	995
500	004	008	018	024	034	062	134	175	230	374	607	698	785	903	965	978	985	991	994	995
600	003	006	013	017	023	043	096	126	169	284	533	590	689	844	949	966	977	988	993	994
KT	001	002	005	007	010	020	05	07	10	20	50	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj W	21.1	21.2	20.7	20.5	20.0	19.1	17.4	17.4	16.0	14.9	14.5	14.0	13.3	12.3	12.0	11.6	11.0	10.3	10.1	10.1
psi	113	74	60	51	42	37	34	31	28	25	23	21	19	17	16	15	14	13	12	11
HR	24	31	43	49	55	71	99	111	127	162	232	259	314	455	731	902	1255	1580	2507	2948
HR	52	70	104	120	140	184	279	322	375	503	765	902	1073	1408	2306	3604	5170	8320	1419	1995
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996
5	994	995	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996
10	986	992	994	995	995	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996
15	964	983	991	993	994	995	996	996	996	996	996	996	996	996	996	996	996	996	996	996
20	921	965	986	987	992	994	995	995	996	996	996	996	996	996	996	996	996	996	996	996
30	780	894	964	975	983	990	994	994	995	995	996	996	996	996	996	996	996	996	996	996
40	620	785	921	947	965	983	992	993	993	995	996	996	996	996	996	996	996	996	996	996
50	483	664	857	902	936	971	988	990	992	994	995	996	996	996	996	996	996	996	996	996
75	270	420	657	759	813	913	970	983	985	991	994	995	995	995	996	996	996	996	996	996
100	166	274	482	570	663	818	915	956	971	985	992	994	994	995	996	996	996	996	996	996
125	111	187	356	436	527	706	841	919	947	976	990	993	993	995	996	996	996	996	996	996
150	079	137	269	317	419	599	812	964	912	963	986	997	997	997	998	998	998	998	998	998
200	045	090	165	212	273	424	661	742	816	934	973	981	987	992	995	995	995	995	995	995
250	029	052	110	144	188	307	475	614	773	845	957	963	979	987	994	994	994	994	994	994
300	021	037	074	103	136	220	417	502	635	764	917	927	947	955	962	966	966	966	966	966
350	015	037	058	077	103	176	314	411	501	640	824	839	850	879	941	941	941	941	941	941
400	012	021	045	060	080	139	272	347	422	524	724	747	760	800	880	880	880	880	880	880
450	009	017	036	048	064	112	224	283	357	444	644	667	680	730	820	820	820	820	820	820
500	007	013	028	039	052	102	210	270	335	424	624	647	660	710	800	800	800	800	800	800
600	005	009	020	027	037	065	135	175	227	361	608	630	643	705	812	812	812	812	812	812

11Q7

12Q7

Ground-burst

Air-burst

KT	001	002	005	007	010	020	05	07	10	20	300	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj Wt	24.1	23.2	21.9	21.5	21.0	20.1	18.8	18.4	17.9	17.0	15.9	15.5	15.1	14.2	13.3	13.0	12.6	12.0	11.3	11.1
psi	191	136	86	73	61	44	28	24	20	14	10	8	7	5	4	3	3	3	2	2
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	36	49	74	87	102	139	211	265	288	393	941	606	802	1079	1631	1893	2214	2982	4373	5016
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
5	.992	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
10	.987	.984	.982	.983	.984	.985	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986
15	.980	.978	.985	.986	.981	.984	.985	.985	.985	.985	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986
20	.975	.968	.970	.980	.986	.992	.995	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
30	.967	.951	.910	.941	.962	.983	.992	.993	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
40	.956	.934	.812	.871	.917	.965	.987	.990	.992	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996
50	.924	.848	.690	.780	.850	.935	.978	.983	.989	.993	.995	.995	.995	.995	.996	.996	.996	.996	.996	.996
75	.842	.745	.555	.587	.646	.812	.937	.958	.973	.986	.993	.994	.994	.995	.996	.996	.996	.996	.996	.996
100	.684	.549	.301	.378	.471	.662	.862	.908	.941	.974	.989	.991	.993	.994	.995	.996	.996	.996	.996	.996
125	.555	.399	.209	.270	.346	.526	.767	.835	.891	.933	.967	.984	.989	.991	.993	.995	.996	.996	.996	.996
150	.438	.270	.152	.199	.261	.417	.667	.751	.826	.872	.924	.962	.975	.987	.992	.994	.995	.996	.996	.996
200	.222	.041	.090	.119	.160	.272	.492	.585	.681	.736	.845	.943	.975	.992	.998	.999	.999	.999	.999	.999
250	.014	.028	.059	.079	.107	.187	.364	.449	.544	.620	.808	.932	.956	.979	.991	.992	.993	.994	.995	.996
300	.010	.014	.041	.056	.076	.136	.276	.348	.436	.525	.837	.968	.977	.988	.997	.999	.999	.999	.999	.999
350	.007	.013	.031	.041	.056	.102	.214	.275	.351	.430	.767	.894	.899	.911	.963	.987	.990	.993	.995	.995
400	.006	.010	.024	.032	.044	.080	.170	.221	.287	.350	.695	.775	.804	.829	.903	.988	.992	.995	.995	.995
450	.004	.008	.019	.025	.035	.064	.138	.180	.237	.303	.626	.711	.793	.807	.968	.978	.985	.991	.994	.994
500	.004	.007	.015	.021	.028	.052	.114	.150	.198	.258	.561	.652	.761	.870	.958	.972	.981	.989	.993	.994
600	.002	.005	.011	.014	.020	.036	.081	.107	.144	.246	.451	.541	.637	.798	.930	.954	.970	.985	.992	.993
KT	001	002	005	007	010	020	05	07	10	20	300	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj Wt	24.1	23.2	21.9	21.5	21.0	20.1	18.8	18.4	17.9	17.0	15.9	15.5	15.1	14.2	13.3	13.0	12.6	12.0	11.3	11.1
psi	191	136	86	73	61	44	28	24	20	14	10	8	7	5	4	3	3	3	2	2
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	36	49	74	87	102	139	211	265	288	393	941	606	802	1079	1631	1893	2214	2982	4373	5016
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
5	.992	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
10	.987	.984	.982	.983	.984	.985	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986
15	.980	.978	.985	.986	.981	.984	.985	.985	.985	.985	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986
20	.975	.968	.970	.980	.986	.992	.995	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
30	.967	.951	.910	.941	.962	.983	.992	.993	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
40	.956	.934	.812	.871	.917	.965	.987	.990	.992	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996
50	.924	.848	.690	.780	.850	.935	.978	.983	.989	.993	.995	.995	.995	.995	.996	.996	.996	.996	.996	.996
75	.842	.745	.555	.587	.646	.812	.937	.958	.973	.986	.993	.994	.994	.995	.996	.996	.996	.996	.996	.996
100	.684	.549	.301	.378	.471	.662	.862	.908	.941	.974	.989	.991	.993	.994	.995	.996	.996	.996	.996	.996
125	.555	.399	.209	.270	.346	.526	.767	.835	.891	.933	.967	.984	.989	.991	.993	.995	.996	.996	.996	.996
150	.438	.270	.152	.199	.261	.417	.667	.751	.826	.872	.924	.962	.975	.987	.992	.994	.995	.996	.996	.996
200	.222	.041	.090	.119	.160	.272	.492	.585	.681	.736	.845	.943	.975	.992	.998	.999	.999	.999	.999	.999
250	.014	.028	.059	.079	.107	.187	.364	.449	.544	.620	.808	.932	.956	.979	.991	.992	.993	.994	.995	.996
300	.010	.014	.041	.056	.076	.136	.276	.348	.436	.525	.837	.968	.977	.988	.997	.999	.999	.999	.999	.999
350	.007	.013	.031	.041	.056	.102	.214	.275	.351	.430	.767	.894	.899	.911	.963	.987	.990	.993	.995	.995
400	.006	.010	.024	.032	.044	.080	.170	.221	.287	.350	.695	.775	.804	.829	.903	.988	.992	.995	.995	.995
450	.004	.008	.019	.025	.035	.064	.138	.180	.237	.303	.626	.711	.793	.807	.968	.978	.985	.991	.994	.994
500	.004	.007	.015	.021	.028	.052	.114	.150	.198	.258	.561	.652	.761	.870	.958	.972	.981	.989	.993	.994
600	.002	.005	.011	.014	.020	.036	.081	.107	.144	.246	.451	.541	.637	.798	.930	.954	.970	.985	.992	.993
KT	001	002	005	007	010	020	05	07	10	20	300	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj Wt	24.1	23.2	21.9	21.5	21.0	20.1	18.8	18.4	17.9	17.0	15.9	15.5	15.1	14.2	13.3	13.0	12.6	12.0	11.3	11.1
psi	191	136	86	73	61	44	28	24	20	14	10	8	7	5	4	3	3	3	2	2
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	36	49	74	87	102	139	211	265	288	393	941	606	802	1079	1631	1893	2214	2982	4373	5016
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
5	.992	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
10	.987	.984	.982	.983	.984	.985	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986
15	.980	.978	.985	.986	.981	.984	.985	.985	.985	.985	.986	.986	.986	.986	.986	.986	.986	.986	.986	.986
20	.975	.968	.970	.980	.986	.992	.995	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
30	.967	.951	.910	.941	.962	.983	.992	.993	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
40	.956	.934	.812	.871	.917	.965	.987	.990	.992	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996
50	.924	.848	.690	.780	.850	.935	.978	.983	.989	.993	.995	.995	.995	.995	.996	.996	.996	.996	.996	.996
75	.842	.745	.555	.587	.646	.812	.937	.958	.973	.986	.993	.994	.994	.995	.996	.996	.996	.996	.996	.996
100	.684	.549	.301	.378	.471	.662	.862	.908	.941	.974	.989	.991	.993	.994	.995	.996	.996	.996	.996	.996
125	.555	.399	.209	.270	.346	.526	.767	.835	.891	.933	.967	.984	.989	.991	.993	.995	.996	.996	.996	.996
150	.438	.270	.152	.199	.261	.417	.667	.751	.826	.872	.924	.962	.975	.987	.992	.994	.995	.996	.996	.996
200	.222	.041	.090	.119	.160	.272	.492	.585	.681	.736	.845	.943	.975	.992	.998	.999	.999	.999	.999	.999
250	.014	.028	.059	.079	.107	.187	.364	.449	.544	.620	.808									

13Q7

Ground-burst

Air-burst

13.7

FT	001	002	005	007	010	020	025	07	10	20	300	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Alt	25.1	24.2	22.9	22.5	22.0	21.1	19.8	19.4	18.9	18.0	16.9	16.5	16.1	15.3	14.3	14.0	13.6	13.0	12.3	12.1
psi	276	193	124	105	88	63	40	34	24	21	14	12	10	8	5	5	4	3	3	2
HR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CEP	31	45	64	79	93	128	193	224	244	360	541	627	734	992	1462	1696	1944	2672	3918	4404
PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
5	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996
10	991	994	995	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996
15	958	961	961	963	964	965	966	966	966	966	966	966	966	966	966	966	966	966	966	966
20	874	967	982	987	990	993	995	995	995	996	996	996	996	996	996	996	996	996	996	996
30	751	883	962	975	983	990	994	995	995	996	996	996	996	996	996	996	996	996	996	996
40	512	702	886	925	952	979	990	992	993	995	996	996	996	996	996	996	996	996	996	996
50	348	529	771	839	894	955	984	988	991	994	995	995	995	995	995	995	995	995	995	995
100	121	211	404	431	592	771	910	947	966	984	992	993	994	995	996	996	996	996	996	996
125	046	044	180	233	302	472	720	787	862	940	980	985	989	993	995	995	995	995	995	995
150	042	050	130	171	225	368	613	703	789	902	968	978	984	991	994	995	995	995	995	995
200	018	034	076	101	136	235	439	530	624	747	828	933	969	985	992	993	994	995	996	996
250	012	022	050	066	090	160	319	398	462	640	871	913	944	975	989	991	993	994	995	996
300	008	015	035	047	064	115	239	304	366	570	738	859	907	959	984	988	991	994	995	995
350	006	011	026	035	044	084	218	278	307	476	720	736	860	938	978	984	988	992	995	995
400	005	009	020	027	037	067	145	189	248	399	643	723	806	910	969	979	985	991	994	995
450	004	007	016	021	029	054	117	154	204	336	572	662	749	877	957	971	980	989	993	994
500	003	006	013	017	024	044	96	127	170	286	507	578	691	840	943	962	975	987	993	994
600	002	004	009	012	017	031	068	091	122	212	400	486	582	757	906	938	959	981	991	992
KT	001	002	005	007	010	020	025	07	10	20	300	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Alt	25.1	24.2	22.9	22.5	22.0	21.1	19.8	19.4	18.9	18.0	16.9	16.5	16.1	15.3	14.3	14.0	13.6	13.0	12.3	12.1
psi	276	193	124	105	88	63	40	34	24	21	14	12	10	8	5	5	4	3	3	2
HR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CEP	31	45	64	79	93	128	193	224	244	360	541	627	734	992	1462	1696	1944	2672	3918	4404
PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
5	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996
10	991	994	995	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996
15	958	961	961	963	964	965	966	966	966	966	966	966	966	966	966	966	966	966	966	966
20	874	967	982	987	990	993	995	995	995	996	996	996	996	996	996	996	996	996	996	996
30	751	883	962	975	983	990	994	995	995	996	996	996	996	996	996	996	996	996	996	996
40	512	702	886	925	952	979	990	992	993	995	996	996	996	996	996	996	996	996	996	996
50	348	529	771	839	894	955	984	988	991	994	995	995	995	995	995	995	995	995	995	995
100	121	211	404	431	592	771	910	947	966	984	992	993	994	995	996	996	996	996	996	996
125	046	044	180	233	302	472	720	787	862	940	980	985	989	993	995	995	995	995	995	995
150	042	050	130	171	225	368	613	703	789	902	968	978	984	991	994	995	995	995	995	995
200	018	034	076	101	136	235	439	530	624	747	828	933	969	985	992	993	994	995	996	996
250	012	022	050	066	090	160	319	398	462	640	871	913	944	975	989	991	993	994	995	996
300	008	015	035	047	064	115	239	304	366	570	738	859	907	959	984	988	991	994	995	995
350	006	011	026	035	044	084	218	278	307	476	720	736	860	938	978	984	988	992	995	995
400	005	009	020	027	037	067	145	189	248	399	643	723	806	910	969	979	985	991	994	995
450	004	007	016	021	029	054	117	154	204	336	572	662	749	877	957	971	980	989	993	994
500	003	006	013	017	024	044	96	127	170	286	507	578	691	840	943	962	975	987	993	994
600	002	004	009	012	017	031	068	091	122	212	400	486	582	757	906	938	959	981	991	992
KT	001	002	005	007	010	020	025	07	10	20	300	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Alt	25.1	24.2	22.9	22.5	22.0	21.1	19.8	19.4	18.9	18.0	16.9	16.5	16.1	15.3	14.3	14.0	13.6	13.0	12.3	12.1
psi	276	193	124	105	88	63	40	34	24	21	14	12	10	8	5	5	4	3	3	2
HR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CEP	31	45	64	79	93	128	193	224	244	360	541	627	734	992	1462	1696	1944	2672	3918	4404
PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
5	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996
10	991	994	995	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996
15	958	961	961	963	964	965	966	966	966	966	966	966	966	966	966	966	966	966	966	966
20	874	967	982	987	990	993	995	995	995	996	996	996	996	996	996	996	996	996	996	996
30	751	883	962	975	983	990	994	995	995	996	996	996	996	996	996	996	996	996	996	996
40	512	702	886	925	952	979	990	992	993	995	996	996	996	996	996	996	996	996	996	996
50	348	529	771	839	894	955	984	988	991	994	995	995	995	995	995	995	995	995	995	995
100	121	211	404	431	592	771	910	947	966	984	992	993	994	995	996	996	996	996	996	996
125	046	044	180	233	302	472	720	787	862	940	980	985	989	993	995	995	995	995	995	995
150	042	050	130	171	225	368	613	703	789	902	968	978	984	991	994	995	995	995	995	995
200	018	034	076	101	136	235	439	530	624	747	828	933	969	985	992	993	994	995	996	996
250	012	022	050	066	090	160	319	398	462	640	871	913	944	975	989	991	993	994	995	996
300	008	015	035	047	064	115	239	304	366	570	738	859	907	959	984	988	991	994	995	995
350	006	011	026	035	044	084	218	278	307	476	720	736	860	938	978	984	988	992	995	995
400	005	009	020	027	037	067	145	189	248	399	643	723	806	910	969	979	985	991	994	995
450	004	007	016	021	029	054	117	154	204	336	572	662	749	877	957	971	980	989	993	994
500	003	006	013	017	024	044	96	127	170	286	507	578	691	840	943	962	975	987	993	994
600	002	004	009																	

Air-burst

[illegible]

14Q 7

Air-burst

16Q7

17Q9

Ground-burst

Air-burst

17Q9

KT	001	002	005	007	010	020	05	07	10	20	500	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj VN	30.1	29.2	27.9	27.5	27.0	26.0	24.8	24.3	23.9	22.9	21.7	21.2	20.8	19.9	18.7	18.3	17.8	17.0	16.0	15.4
psi	1720	1217	771	652	548	386	245	207	174	124	79	67	56	41	26	23	19	14	10	9
HOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	21	29	44	51	60	82	124	145	170	233	352	410	482	659	992	1153	1350	1432	2727	3150
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
5	.978	.989	.993	.994	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
10	.960	.940	.980	.986	.989	.993	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
15	.952	.925	.942	.962	.975	.987	.993	.994	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
20	.937	.879	.873	.916	.948	.977	.990	.992	.993	.993	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
30	.272	.434	.685	.768	.861	.931	.977	.984	.988	.993	.995	.995	.995	.995	.996	.996	.996	.996	.996	.996
40	.168	.285	.511	.605	.701	.851	.952	.968	.979	.989	.993	.994	.995	.995	.996	.996	.996	.996	.996	.996
50	.112	.197	.381	.469	.568	.751	.911	.941	.962	.983	.992	.993	.994	.995	.996	.996	.996	.996	.996	.996
75	.052	.095	.201	.259	.334	.512	.757	.886	.952	.983	.983	.988	.990	.993	.995	.995	.996	.996	.996	.996
100	.030	.055	.120	.159	.211	.348	.592	.683	.771	.894	.966	.977	.984	.991	.994	.995	.996	.996	.996	.996
125	.019	.036	.080	.106	.142	.246	.456	.548	.647	.813	.937	.959	.973	.987	.993	.994	.995	.996	.996	.996
150	.013	.025	.056	.075	.102	.180	.354	.438	.536	.723	.896	.932	.956	.980	.991	.992	.994	.995	.996	.996
200	.008	.014	.032	.043	.059	.107	.225	.288	.368	.552	.788	.932	.953	.985	.985	.991	.994	.995	.995	.995
250	.003	.009	.021	.028	.038	.071	.153	.200	.261	.419	.668	.753	.828	.924	.975	.982	.987	.992	.995	.995
300	.003	.006	.014	.020	.027	.050	.110	.153	.193	.322	.558	.651	.742	.876	.960	.973	.981	.990	.994	.994
350	.002	.005	.011	.014	.020	.037	.082	.109	.147	.252	.464	.557	.655	.818	.938	.959	.973	.986	.993	.994
400	.002	.004	.008	.011	.015	.028	.064	.085	.115	.202	.388	.475	.573	.734	.910	.941	.962	.982	.991	.993
450	.001	.003	.006	.009	.012	.023	.051	.068	.093	.164	.326	.407	.501	.690	.877	.918	.947	.976	.990	.992
500	.001	.002	.005	.007	.010	.018	.041	.056	.076	.136	.277	.350	.439	.628	.840	.921	.972	.989	.997	.999
600	.001	.002	.004	.005	.007	.013	.029	.039	.054	.097	.205	.264	.339	.516	.757	.926	.984	.990	.992	.996

KT	001	002	005	007	010	020	05	07	10	20	500	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj VN	30.1	29.2	27.9	27.5	27.0	26.0	24.8	24.3	23.9	22.9	21.7	21.2	20.8	19.9	18.7	18.3	17.8	17.0	16.0	15.4
psi	1720	1217	771	652	548	386	245	207	174	124	79	67	56	41	26	23	19	14	10	9
HOB	20	26	37	42	47	61	85	96	110	141	197	222	233	324	431	509	578	740	1028	1154
WR	32	43	63	73	85	115	170	197	229	308	456	527	614	895	1217	1403	1611	2141	3144	3662
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
5	.990	.993	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
10	.955	.970	.990	.992	.993	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
15	.945	.940	.974	.984	.988	.992	.995	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
20	.713	.965	.955	.969	.977	.989	.993	.994	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
30	.497	.677	.961	.907	.939	.972	.988	.991	.992	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996
40	.315	.502	.735	.806	.866	.940	.979	.985	.988	.993	.995	.995	.995	.996	.996	.996	.996	.996	.996	.996
50	.235	.373	.605	.691	.773	.890	.963	.974	.982	.990	.994	.994	.995	.995	.996	.996	.996	.996	.996	.996
75	.115	.196	.366	.446	.530	.716	.886	.923	.950	.977	.990	.992	.993	.993	.995	.996	.996	.996	.996	.996
100	.067	.117	.233	.295	.371	.544	.771	.836	.889	.951	.982	.987	.990	.993	.995	.995	.995	.996	.996	.996
125	.044	.077	.150	.204	.263	.411	.648	.730	.806	.909	.969	.978	.985	.991	.994	.995	.995	.996	.996	.996
150	.031	.055	.114	.149	.194	.316	.536	.625	.714	.853	.943	.966	.977	.989	.993	.994	.994	.995	.996	.996
200	.017	.031	.067	.087	.116	.197	.367	.450	.542	.710	.888	.924	.950	.977	.990	.992	.993	.993	.995	.996
250	.011	.020	.043	.057	.077	.133	.262	.329	.409	.544	.804	.862	.909	.944	.984	.989	.991	.993	.995	.995
300	.009	.014	.030	.041	.054	.095	.193	.246	.314	.476	.712	.786	.851	.913	.976	.983	.987	.992	.994	.995
350	.006	.010	.022	.030	.040	.071	.147	.190	.246	.397	.622	.704	.786	.857	.965	.975	.983	.990	.994	.994
400	.004	.008	.017	.023	.031	.055	.115	.150	.196	.318	.540	.628	.717	.844	.949	.965	.976	.987	.993	.994
450	.003	.006	.014	.018	.025	.044	.093	.121	.160	.265	.469	.556	.640	.804	.929	.952	.968	.984	.992	.993
500	.003	.005	.011	.015	.020	.036	.076	.100	.132	.222	.407	.491	.585	.755	.906	.936	.959	.980	.990	.992
600	.002	.004	.009	.010	.014	.025	.054	.071	.094	.162	.312	.396	.471	.634	.848	.905	.930	.969	.990	.990

17Q9

Air-burst

1807

1809

Ground-burst

[illegible]

Air-burst

XT	0.001	0.002	0.005	0.037	0.110	0.220	0.05	0.07	0.10	0.20	0.500	0.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj. W	31.1	30.2	28.4	28.5	28.0	27.0	25.9	25.3	26.9	23.9	22.7	22.2	21.8	20.9	19.7	19.3	18.8	18.0	17.0	16.6
PSI	2877	1753	1110	938	786	556	353	269	250	178	134	97	81	58	38	33	28	21	14	12
DOB	27	26	36	41	46	60	83	94	107	138	193	217	247	316	442	498	566	725	1005	1137
AGE	30	40	59	68	80	107	159	183	214	287	425	491	572	758	1133	1307	1519	2071	2968	3404
CCP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986
5	0.989	0.943	0.915	0.945	0.945	0.946	0.946	0.946	0.946	0.946	0.946	0.946	0.946	0.946	0.946	0.946	0.946	0.946	0.946	0.946
10	0.946	0.975	0.984	0.931	0.931	0.934	0.935	0.936	0.936	0.936	0.936	0.936	0.936	0.936	0.936	0.936	0.936	0.936	0.936	0.936
15	0.840	0.927	0.975	0.982	0.987	0.992	0.994	0.995	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996
20	0.700	0.943	0.945	0.963	0.975	0.987	0.993	0.994	0.994	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995
40	0.456	0.746	0.838	0.888	0.926	0.967	0.987	0.990	0.992	0.994	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995
50	0.302	0.461	0.697	0.771	0.941	0.928	0.975	0.982	0.987	0.994	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995
70	0.210	0.337	0.563	0.651	0.737	0.961	0.955	0.969	0.979	0.989	0.993	0.994	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995
100	0.172	0.174	0.230	0.267	0.496	0.676	0.863	0.907	0.939	0.972	0.984	0.991	0.992	0.994	0.995	0.995	0.995	0.995	0.995	0.995
125	0.159	0.103	0.204	0.244	0.335	0.502	0.735	0.806	0.937	0.940	0.974	0.985	0.985	0.992	0.995	0.995	0.995	0.995	0.995	0.995
150	0.139	0.068	0.140	0.181	0.235	0.373	0.605	0.691	0.771	0.900	0.962	0.974	0.982	0.990	0.994	0.994	0.995	0.995	0.995	0.995
200	0.077	0.048	0.101	0.131	0.172	0.283	0.494	0.582	0.674	0.875	0.938	0.959	0.972	0.985	0.992	0.993	0.994	0.995	0.995	0.995
250	0.015	0.027	0.054	0.077	0.102	0.175	0.333	0.410	0.499	0.679	0.865	0.903	0.931	0.941	0.983	0.991	0.992	0.994	0.995	0.995
300	0.010	0.018	0.038	0.057	0.067	0.117	0.233	0.295	0.371	0.544	0.771	0.835	0.886	0.950	0.957	0.986	0.990	0.993	0.995	0.995
350	0.007	0.012	0.027	0.035	0.047	0.083	0.171	0.219	0.281	0.435	0.671	0.751	0.821	0.918	0.972	0.989	0.995	0.999	0.999	0.999
400	0.005	0.003	0.007	0.015	0.022	0.048	0.101	0.132	0.174	0.350	0.578	0.655	0.750	0.874	0.957	0.974	0.985	0.992	0.993	0.993
450	0.004	0.003	0.005	0.012	0.015	0.021	0.038	0.051	0.071	0.296	0.497	0.595	0.676	0.795	0.926	0.938	0.948	0.951	0.951	0.952
500	0.002	0.001	0.003	0.007	0.010	0.013	0.021	0.037	0.058	0.199	0.360	0.449	0.541	0.713	0.906	0.972	0.983	0.983	0.983	0.981
550	0.001	0.000	0.002	0.005	0.007	0.009	0.017	0.022	0.035	0.143	0.270	0.343	0.437	0.611	0.814	0.973	0.985	0.985	0.985	0.988

20Q7

Ground-burst

Air-burst

20Q7

KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Alt VN	12.1	31.2	29.9	29.5	29.0	28.1	26.8	26.4	25.9	25.0	23.9	23.5	23.1	22.3	21.3	21.0	20.6	20.0	19.3	19.1
psi	3539	2508	1593	1348	1131	806	517	440	371	268	176	152	130	97	68	60	53	43	33	30
WR	18	24	36	42	50	68	103	120	141	193	290	316	393	532	748	908	1034	1402	2026	2313
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
5	.965	.984	.992	.993	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
10	.786	.903	.969	.979	.985	.991	.994	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
15	.555	.741	.905	.918	.960	.982	.991	.993	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
20	.386	.572	.804	.865	.912	.963	.986	.989	.992	.994	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996
30	.204	.338	.579	.671	.760	.887	.964	.975	.983	.990	.994	.995	.995	.996	.996	.996	.996	.996	.996	.996
40	.122	.213	.407	.496	.595	.773	.920	.947	.966	.984	.992	.993	.994	.995	.996	.996	.996	.996	.996	.996
50	.081	.144	.292	.368	.459	.650	.855	.903	.938	.971	.987	.991	.993	.994	.995	.996	.996	.996	.996	.996
75	.017	.068	.147	.193	.253	.407	.655	.741	.818	.919	.973	.981	.986	.992	.994	.995	.995	.996	.996	.996
100	.021	.039	.087	.115	.154	.264	.480	.573	.670	.828	.942	.951	.974	.987	.993	.994	.994	.995	.996	.996
125	.014	.025	.057	.076	.103	.181	.354	.438	.534	.719	.892	.928	.954	.979	.990	.992	.993	.995	.995	.996
150	.009	.018	.040	.054	.073	.131	.267	.338	.425	.613	.829	.882	.923	.966	.986	.990	.992	.994	.995	.995
200	.005	.010	.023	.031	.042	.077	.164	.214	.278	.438	.684	.765	.836	.926	.974	.982	.987	.992	.994	.995
250	.003	.006	.015	.020	.027	.050	.110	.145	.192	.319	.550	.640	.730	.865	.934	.968	.978	.988	.993	.994
300	.002	.004	.010	.014	.019	.035	.078	.104	.139	.238	.440	.529	.625	.791	.923	.948	.966	.983	.991	.993
350	.002	.003	.007	.010	.014	.026	.058	.078	.105	.183	.355	.437	.530	.711	.884	.921	.948	.975	.982	.991
400	.001	.003	.006	.008	.011	.020	.045	.060	.082	.145	.289	.362	.450	.634	.837	.886	.924	.965	.985	.989
450	.001	.002	.005	.006	.008	.016	.036	.048	.065	.117	.239	.304	.383	.562	.785	.846	.895	.952	.981	.986
500	.001	.002	.004	.005	.007	.013	.029	.039	.053	.096	.203	.257	.328	.497	.731	.802	.862	.936	.976	.982
600	.001	.001	.003	.003	.005	.009	.020	.027	.037	.069	.145	.189	.246	.391	.626	.709	.787	.895	.962	.973
FT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Alt VN	12.1	31.2	29.9	29.5	29.0	28.1	26.8	26.4	25.9	25.0	23.9	23.5	23.1	22.3	21.3	21.0	20.6	20.0	19.3	19.1
psi	3539	2508	1593	1348	1131	806	517	440	371	268	176	152	130	97	68	60	53	43	33	30
WR	18	24	36	42	50	68	103	120	141	193	290	316	393	532	748	908	1034	1402	2026	2313
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
5	.944	.982	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
10	.735	.911	.988	.990	.992	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
15	.512	.712	.970	.979	.985	.991	.994	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
20	.362	.516	.734	.855	.970	.985	.992	.993	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
30	.217	.389	.609	.686	.913	.960	.985	.989	.991	.994	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996
40	.122	.223	.457	.521	.718	.812	.912	.970	.977	.985	.991	.994	.995	.995	.996	.996	.996	.996	.996	.996
50	.087	.155	.321	.409	.630	.742	.945	.963	.975	.987	.993	.994	.994	.995	.996	.996	.996	.996	.996	.996
75	.027	.054	.128	.160	.303	.445	.635	.816	.906	.925	.966	.986	.989	.991	.994	.995	.995	.996	.996	.996
100	.032	.061	.185	.246	.471	.650	.845	.971	.981	.986	.991	.994	.995	.995	.996	.996	.996	.996	.996	.996
125	.034	.060	.124	.161	.303	.436	.641	.849	.934	.945	.953	.968	.978	.988	.993	.994	.994	.995	.996	.996
150	.034	.060	.124	.161	.303	.436	.641	.849	.934	.945	.953	.968	.978	.988	.993	.994	.994	.995	.996	.996
200	.034	.060	.124	.161	.303	.436	.641	.849	.934	.945	.953	.968	.978	.988	.993	.994	.994	.995	.996	.996
250	.034	.060	.124	.161	.303	.436	.641	.849	.934	.945	.953	.968	.978	.988	.993	.994	.994	.995	.996	.996
300	.034	.060	.124	.161	.303	.436	.641	.849	.934	.945	.953	.968	.978	.988	.993	.994	.994	.995	.996	.996
350	.034	.060	.124	.161	.303	.436	.641	.849	.934	.945	.953	.968	.978	.988	.993	.994	.994	.995	.996	.996
400	.034	.060	.124	.161	.303	.436	.641	.849	.934	.945	.953	.968	.978	.988	.993	.994	.994	.995	.996	.996
450	.034	.060	.124	.161	.303	.436	.641	.849	.934	.945	.953	.968	.978	.988	.993	.994	.994	.995	.996	.996
500	.034	.060	.124	.161	.303	.436	.641	.849	.934	.945	.953	.968	.978	.988	.993	.994	.994	.995	.996	.996
600	.034	.060	.124	.161	.303	.436	.641	.849	.934	.945	.953	.968	.978	.988	.993	.994	.994	.995	.996	.996

20Q7

20Q8

Ground-burst

Air-burst

20Q8

KT	0.01	0.02	0.05	0.07	0.10	0.20	0.500	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj	32.7	31.7	30.5	29.5	28.6	27.4	26.3	25.3	24.4	23.4	22.6	21.5	20.7	20.0	19.1
psi	4313	3053	1936	1639	1373	974	621	463	347	265	205	175	148	109	73
W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W	17	23	35	41	48	65	99	115	135	165	279	325	381	518	774
CLP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996
5	981	982	991	993	994	995	996	996	996	996	996	996	996	996	996
10	762	889	965	976	984	991	994	995	996	996	996	996	996	996	996
15	526	715	892	929	955	9	991	992	993	995	996	996	996	996	996
20	360	543	782	848	900	958	985	989	991	994	995	995	995	996	996
30	187	314	550	643	736	873	959	973	981	990	994	994	994	994	994
40	112	196	380	468	566	750	910	941	962	982	992	992	992	992	992
50	72	132	271	343	432	623	838	891	930	970	988	991	992	992	992
75	38	62	135	177	234	381	629	717	799	909	970	986	991	992	992
100	21	36	77	106	142	245	454	546	644	810	915	957	972	994	995
125	12	23	45	69	93	167	331	413	508	697	881	971	1000	1000	1000
150	9	16	31	46	61	112	218	283	371	491	613	717	816	904	991
200	5	9	17	25	34	67	120	152	198	259	345	415	487	554	615
250	3	5	10	14	19	38	70	90	118	159	207	259	312	366	415
300	2	3	6	8	11	22	40	52	67	85	107	131	157	184	211
350	1	2	4	5	7	14	25	32	41	52	65	80	95	111	127
400	1	1	3	4	5	10	18	23	29	36	45	55	66	78	90
450	1	1	2	3	4	8	14	18	23	28	34	41	49	58	68
500	1	1	1	2	3	6	11	14	17	21	26	31	37	44	51
550	1	1	1	1	2	4	8	10	12	15	18	22	26	31	36
600	1	1	1	1	1	3	6	8	9	11	13	16	19	23	27
650	1	1	1	1	1	2	4	5	6	7	8	10	12	14	17
700	1	1	1	1	1	1	3	4	4	5	6	7	8	9	10
750	1	1	1	1	1	1	2	3	3	4	4	5	6	7	8
800	1	1	1	1	1	1	1	2	2	3	3	4	4	5	6
850	1	1	1	1	1	1	1	1	2	2	2	3	3	4	4
900	1	1	1	1	1	1	1	1	1	2	2	2	2	3	3
950	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2
1000	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

20Q8

20Q9

Ground-burst

Air-burst

20Q9

KT	.001	-.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj Vm	33.1	32.2	30.9	30.5	30.0	29.0	27.8	27.3	26.9	25.9	24.7	24.2	23.8	22.9	21.7	21.3	20.8	20.0	19.0	18.6
Ref	5137	5137	5137	5137	5137	5137	5137	5137	5137	5137	5137	5137	5137	5137	5137	5137	5137	5137	5137	5137
HOE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	16	22	33	39	46	63	95	111	130	178	270	314	369	504	760	882	1034	1402	2087	2411
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
5	.956	.980	.991	.993	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
10	.740	.876	.960	.973	.982	.990	.994	.995	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
15	.500	.691	.880	.920	.949	.978	.990	.992	.993	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
20	.338	.517	.761	.831	.888	.933	.963	.988	.991	.994	.995	.995	.995	.996	.996	.996	.996	.996	.996	.996
30	.174	.294	.524	.618	.713	.859	.934	.970	.980	.989	.994	.994	.995	.995	.996	.996	.996	.996	.996	.996
40	.113	.183	.358	.443	.541	.728	.899	.934	.958	.981	.991	.993	.994	.995	.996	.996	.996	.996	.996	.996
50	.068	.123	.253	.322	.408	.597	.822	.879	.922	.967	.987	.990	.992	.994	.995	.996	.996	.996	.996	.996
75	.011	.057	.125	.165	.218	.359	.604	.695	.781	.899	.968	.978	.985	.991	.994	.995	.996	.996	.996	.996
100	.018	.033	.073	.098	.132	.228	.430	.521	.621	.793	.929	.953	.970	.985	.992	.994	.995	.996	.996	.996
125	.011	.021	.048	.064	.087	.155	.312	.391	.484	.675	.870	.914	.945	.976	.990	.992	.993	.995	.996	.996
150	.008	.015	.033	.045	.062	.112	.233	.298	.379	.565	.798	.860	.908	.961	.981	.989	.991	.994	.995	.995
200	.004	.008	.019	.028	.035	.065	.141	.185	.243	.394	.642	.730	.809	.914	.972	.980	.986	.992	.994	.994
250	.003	.005	.012	.017	.023	.042	.094	.126	.166	.282	.506	.599	.685	.846	.948	.964	.977	.988	.993	.994
300	.002	.004	.009	.012	.016	.030	.066	.089	.120	.209	.399	.488	.586	.765	.915	.944	.964	.983	.991	.993
350	.001	.003	.006	.008	.012	.022	.049	.066	.090	.160	.319	.398	.492	.681	.872	.914	.945	.975	.989	.991
400	.001	.002	.005	.007	.009	.017	.038	.051	.070	.126	.258	.328	.413	.601	.822	.877	.920	.965	.986	.999
450	.001	.002	.004	.005	.007	.013	.030	.041	.058	.101	.212	.273	.350	.579	.767	.835	.890	.932	.983	.987
500	.001	.001	.003	.004	.006	.011	.025	.033	.046	.083	.177	.230	.299	.465	.711	.781	.855	.936	.978	.984
600	.001	.002	.003	.004	.006	.017	.023	.032	.059	.128	.168	.221	.362	.604	.683	.777	.895	.985	.985	.976

KT	.001	.002	.005	.007	.010	.020	.05	.07	.10	.20	.500	.700	1.000	2.000	5.000	7.000	10.00	20.00	50.00	70.00
Adj Vm	33.1	32.2	30.9	30.5	30.0	29.0	27.8	27.3	26.9	25.9	24.7	24.2	23.8	22.9	21.7	21.3	20.8	20.0	19.0	18.6
Ref	5137	5137	5137	5137	5137	5137	5137	5137	5137	5137	5137	5137	5137	5137	5137	5137	5137	5137	5137	5137
HOE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WR	16	22	33	39	46	63	95	111	130	178	270	314	369	504	760	882	1034	1402	2087	2411
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
5	.956	.980	.991	.993	.994	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
10	.740	.876	.960	.973	.982	.990	.994	.995	.995	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
15	.500	.691	.880	.920	.949	.978	.990	.992	.993	.995	.996	.996	.996	.996	.996	.996	.996	.996	.996	.996
20	.338	.517	.761	.831	.888	.933	.963	.988	.991	.994	.995	.995	.995	.996	.996	.996	.996	.996	.996	.996
30	.174	.294	.524	.618	.713	.859	.934	.970	.980	.989	.994	.994	.995	.995	.996	.996	.996	.996	.996	.996
40	.113	.183	.358	.443	.541	.728	.899	.934	.958	.981	.991	.993	.994	.995	.996	.996	.996	.996	.996	.996
50	.068	.123	.253	.322	.408	.597	.822	.879	.922	.967	.987	.990	.992	.994	.995	.996	.996	.996	.996	.996
75	.011	.057	.125	.165	.218	.359	.604	.695	.781	.899	.968	.978	.985	.991	.994	.995	.996	.996	.996	.996
100	.018	.033	.073	.098	.132	.228	.430	.521	.621	.793	.929	.953	.970	.985	.992	.994	.995	.996	.996	.996
125	.011	.021	.048	.064	.087	.155	.312	.391	.484	.675	.870	.914	.945	.976	.990	.992	.993	.995	.996	.996
150	.008	.015	.033	.045	.062	.112	.233	.298	.379	.565	.798	.860	.908	.961	.981	.989	.991	.994	.995	.995
200	.004	.008	.019	.028	.035	.065	.141	.185	.243	.394	.642	.730	.809	.914	.972	.980	.986	.992	.994	.994
250	.003	.005	.012	.017	.023	.042	.094	.126	.166	.282	.506	.599	.685	.846	.948	.964	.977	.988	.993	.994
300	.002	.004	.009	.012	.016	.030	.066	.089	.120	.209	.399	.488	.586	.765	.915	.944	.964	.983	.991	.993
350	.001	.003	.006	.008	.012	.022	.049	.066	.090	.160	.319	.398	.492	.681	.872	.914	.945	.975	.989	.991
400	.001	.002	.005	.007	.009	.017	.038	.051	.070	.126	.258	.328	.413	.601	.822	.877	.920	.965	.986	.999
450	.001	.002	.004	.005	.007	.013	.030	.041	.058	.101	.212	.273	.350	.579	.767	.835	.890	.932	.983	.987
500	.001	.001	.003	.004	.006	.011	.025	.033	.046	.083	.177	.230	.299	.465	.711	.781	.855	.936	.978	.984
600	.001	.002	.003	.004	.006	.017	.023	.032	.059	.128	.168	.221	.362	.604	.683	.777	.895	.985	.985	.976

20Q9

21Q9

Ground-burst

Air-burst

21Q9

KT	001	002	005	007	010	020	05	07	10	20	500	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj. W	34.1	31.2	31.5	31.0	30.0	28.8	28.3	27.9	26.9		25.7	25.2	24.8	23.9	22.7	22.3	21.8	21.0	20.0	19.6
psi	7387	5234	3314	2802	2346	1660	1053	862	748	531	340	238	243	174	114	97	83	61	42	37
HR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MR	15	20	31	36	42	57	87	101	119	163	247	287	338	461	695	807	946	1283	1510	2206
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996
5	944	976	990	992	993	995	996	996	996	996	996	996	996	996	996	996	996	996	996	996
10	631	845	940	967	978	989	993	994	995	995	996	996	996	996	996	996	996	996	996	996
15	447	638	849	899	935	972	980	981	983	984	995	996	996	996	996	996	996	996	996	996
20	295	463	713	797	859	940	985	987	993		995	995	995	996	996	996	996	996	996	996
30	149	255	470	563	662	824	942	962	975	987	993	994	995	995	996	996	996	996	996	996
40	088	156	313	392	486	678	872	915	946	976	990	992	993	993	996	996	996	996	996	996
50	057	104	214	281	360	543	782	848	909	958	985	989	991	994	995	995	996	996	996	996
75	026	048	106	141	187	314	549	643	735	873	953	973	981	990	994	995	996	996	996	996
100	015	027	062	093	112	176	380	468	566	749	929	940	962	982	991	993	994	995	996	996
125	009	018	040	054	074	132	271	343	432	622	839	890	929	970	989	991	992	994	995	996
150	007	012	028	038	052	095	200	258	333	510	754	825	884	951	982	987	990	993	995	995
200	004	007	016	022	030	055	120	158	210	347	588	680	767	891	965	976	981	989	994	995
250	002	004	010	014	019	036	079	105	142	244	453	545	653	809	935	957	972	986	992	994
300	002	003	007	013	013	025	056	075	102	179	351	435	531	718	892	928	954	979	990	992
350	001	002	005	007	010	018	042	056	076	136	277	350	439	628	840	891	929	969	987	990
400	001	002	004	005	008	014	032	043	069	107	223	286	365	546	781	846	895	956	984	994
450	001	001	003	004	006	011	025	034	067	086	142	196	263	473	720	746	861	939	974	984
500	001	001	003	003	005	009	021	028	038	070	131	197	258	483	680	744	820	918	972	980
600	001	001	002	002	001	006	014	018	027	044	109	143	190	317	549	641	731	867	955	969
KT	001	002	005	007	010	020	05	07	10	20	500	700	1,000	2,000	5,000	7,000	10,000	20,000	50,000	70,000
Adj. W	34.1	31.2	31.5	31.0	30.0	28.8	28.3	27.9	26.9		25.7	25.2	24.8	23.9	22.7	22.3	21.8	21.0	20.0	19.6
psi	7387	5234	3314	2802	2346	1660	1053	862	748	531	340	238	243	174	114	97	83	61	42	37
HR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MR	14	24	33	38	43	55	75	94	100	129	190	209	232	294	415	469	532	631	947	1067
AR	74	71	64	56	65	87	119	149	173	213	344	398	463	621	916	1056	1277	1640	2146	2750
CEP	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
0	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996
5	984	991	994	995	995	996	996	996	996	996	996	996	996	996	996	996	996	996	996	996
10	906	958	984	988	991	993	995	996	996	996	996	996	996	996	996	996	996	996	996	996
15	767	973	956	970	980	983	993	994	995	995	996	996	996	996	996	996	996	996	996	996
20	580	757	903	935	957	980	991	992	993	995	996	996	996	996	996	996	996	996	996	996
30	344	511	742	812	871	942	974	985	989	993	995	995	996	996	996	996	996	996	996	996
40	218	348	576	661	744	873	956	970	980	983	993	994	995	996	996	996	996	996	996	996
50	147	245	439	525	618	783	919	946	964	983	991	993	994	995	996	996	996	996	996	996
75	070	121	237	301	377	551	776	839	931	952	987	990	991	993	995	996	996	996	996	996
100	040	070	145	187	242	342	615	699	780	894	964	975	982	990	994	996	996	996	996	996
125	026	046	096	126	165	272	479	565	658	813	933	955	970	985	992	993	996	996	996	996
150	013	032	068	090	119	201	374	455	547	723	890	915	951	977	990	992	993	995	995	996
200	010	014	039	052	089	121	233	301	379	553	777	840	890	952	987	987	990	993	995	995
250	007	012	025	034	045	070	153	220	270	419	655	736	811	911	986	986	991	994	995	995
300	005	009	019	024	032	056	114	152	190	322	544	631	730	856	950	966	977	987	993	994
350	003	006	013	017	023	048	115	152	252		451	537	637	789	903	968	975	989	993	993
400	003	005	010	013	014	032	069	090	119	202	355	455	549	734	899	925	950	977	989	993
450	002	004	008	011	014	037	055	072	086	184	315	407	500	687	850	906	931	964	987	990
500	002	003	006	009	012	035	059	073	116		267	334	415	573	806	903	959	989	989	989
600	001	002	004	006	008	014	031	041	056	097	197	251	319	481	714	787	851	931	971	982

21Q9

Appendix A

JOSS PROGRAM LISTING

[illegible]

$E(8)$	-800	$E(17)$	-500	$E(26)$	-1000	$E(35)$	-1000	$E(44)$	-1000	$E(53)$	-1000	$E(62)$	-1000	$E(71)$	-1000	$E(80)$	-1000	$E(89)$	-1000	$E(98)$	-1000	$E(107)$	-1000	$E(116)$	-1000	$E(125)$	-1000	$E(134)$	-1000	$E(143)$	-1000	$E(152)$	-1000	$E(161)$	-1000	$E(170)$	-1000	$E(179)$	-1000	$E(188)$	-1000	$E(197)$	-1000	$E(206)$	-1000	$E(215)$	-1000	$E(224)$	-1000	$E(233)$	-1000	$E(242)$	-1000	$E(251)$	-1000	$E(260)$	-1000	$E(269)$	-1000	$E(278)$	-1000	$E(287)$	-1000	$E(296)$	-1000	$E(305)$	-1000	$E(314)$	-1000	$E(323)$	-1000	$E(332)$	-1000	$E(341)$	-1000	$E(350)$	-1000	$E(359)$	-1000	$E(368)$	-1000	$E(377)$	-1000	$E(386)$	-1000	$E(395)$	-1000	$E(404)$	-1000	$E(413)$	-1000	$E(422)$	-1000	$E(431)$	-1000	$E(440)$	-1000	$E(449)$	-1000	$E(458)$	-1000	$E(467)$	-1000	$E(476)$	-1000	$E(485)$	-1000	$E(494)$	-1000	$E(503)$	-1000	$E(512)$	-1000	$E(521)$	-1000	$E(530)$	-1000	$E(539)$	-1000	$E(548)$	-1000	$E(557)$	-1000	$E(566)$	-1000	$E(575)$	-1000	$E(584)$	-1000	$E(593)$	-1000	$E(602)$	-1000	$E(611)$	-1000	$E(620)$	-1000	$E(629)$	-1000	$E(638)$	-1000	$E(647)$	-1000	$E(656)$	-1000	$E(665)$	-1000	$E(674)$	-1000	$E(683)$	-1000	$E(692)$	-1000	$E(701)$	-1000	$E(710)$	-1000	$E(719)$	-1000	$E(728)$	-1000	$E(737)$	-1000	$E(746)$	-1000	$E(755)$	-1000	$E(764)$	-1000	$E(773)$	-1000	$E(782)$	-1000	$E(791)$	-1000	$E(800)$	-1000	$E(809)$	-1000	$E(818)$	-1000	$E(827)$	-1000	$E(836)$	-1000	$E(845)$	-1000	$E(854)$	-1000	$E(863)$	-1000	$E(872)$	-1000	$E(881)$	-1000	$E(890)$	-1000	$E(899)$	-1000	$E(908)$	-1000	$E(917)$	-1000	$E(926)$	-1000	$E(935)$	-1000	$E(944)$	-1000	$E(953)$	-1000	$E(962)$	-1000	$E(971)$	-1000	$E(980)$	-1000	$E(989)$	-1000	$E(998)$	-1000	$E(1007)$	-1000	$E(1016)$	-1000	$E(1025)$	-1000	$E(1034)$	-1000	$E(1043)$	-1000	$E(1052)$	-1000	$E(1061)$	-1000	$E(1070)$	-1000	$E(1079)$	-1000	$E(1088)$	-1000	$E(1097)$	-1000	$E(1106)$	-1000	$E(1115)$	-1000	$E(1124)$	-1000	$E(1133)$	-1000	$E(1142)$	-1000	$E(1151)$	-1000	$E(1160)$	-1000	$E(1169)$	-1000	$E(1178)$	-1000	$E(1187)$	-1000	$E(1196)$	-1000	$E(1205)$	-1000	$E(1214)$	-1000	$E(1223)$	-1000	$E(1232)$	-1000	$E(1241)$	-1000	$E(1250)$	-1000	$E(1259)$	-1000	$E(1268)$	-1000	$E(1277)$	-1000	$E(1286)$	-1000	$E(1295)$	-1000	$E(1304)$	-1000	$E(1313)$	-1000	$E(1322)$	-1000	$E(1331)$	-1000	$E(1340)$	-1000	$E(1349)$	-1000	$E(1358)$	-1000	$E(1367)$	-1000	$E(1376)$	-1000	$E(1385)$	-1000	$E(1394)$	-1000	$E(1403)$	-1000	$E(1412)$	-1000	$E(1421)$	-1000	$E(1430)$	-1000	$E(1439)$	-1000	$E(1448)$	-1000	$E(1457)$	-1000	$E(1466)$	-1000	$E(1475)$	-1000	$E(1484)$	-1000	$E(1493)$	-1000	$E(1502)$	-1000	$E(1511)$	-1000	$E(1520)$	-1000	$E(1529)$	-1000	$E(1538)$	-1000	$E(1547)$	-1000	$E(1556)$	-1000	$E(1565)$	-1000	$E(1574)$	-1000	$E(1583)$	-1000	$E(1592)$	-1000	$E(1601)$	-1000	$E(1610)$	-1000	$E(1619)$	-1000	$E(1628)$	-1000	$E(1637)$	-1000	$E(1646)$	-1000	
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Let I be empty

1700 MAIN STREET
SANTA MONICA, CA 90406
393-0411 EXT. 403

Set	Assigns a value. Set may be omitted on direct commands. Set $x = 3$. Set $a(3,x) = y + 3xz - x**2$.
Let	Defines a formula of up to ten parameters. Let $f(x,y) = x**2 + 10*x - 6*y$. Let $h = (b - a)/2$. Let $D(f,x) = [f(x+d) - f(x)]/d$. Indicates a sparse array. Let A be sparse.
Type	Types quoted text, blank lines (<code>_</code>), values, parts, steps, etc. Type "The quick brown fox". Type $x+3$, $D(\sin,0)$, <code>_</code> , all steps. Type all.
Demand	Types identification and equals sign, then waits for user to input value. Blank input lines are treated as interruptions. Demand $a(3,1)$. Demand t as "Temperature".
File	Stores an item* in the user's file. File part 3, x, z as testdata. File all replacing inverter.
Recall	Retrieves an item* from library or a private file**. Recall database(27). Recall blackjac from library. Recall plot from file M1234.A9876.
Discard	Erases an item* from the user's file. Discard olddate.
Show	Produces a list of items in library or private file**. Show items. Show items in library. Show items in file M1234.A9876.
Delete	Erases values, parts, steps, forms, formulas. Delete x, part 3, all forms. Delete all values. Delete all.
Do	Initiates execution of a step or part (step by step, beginning at the first step of part), repeatedly if modified by a for or a times phrase. Do part 6 for $x=.1,2(2)10$, $100*a+b$.
(Do ...)	Interprets direct Do as a stored Do (i.e., does not cancel before execution), but returns to user when done. (Do part 3.)

** File names consist of user number and account, separated by ".A", e.g. M1134.A9876.

MODIFIERS

if	Modifies any command. JOSS carries out the command if condition holds. Type x if $0 < x < 5$. Set $y=3$ if $x < 10$ and $x*y=10$.
for	Modifies Do only. JOSS executes part or step repeatedly for specified set of values. Do part 3 for $x=1(1)10(10)100,1000$. Do step 1.2 for $x=.01, .03, .1(a,b)$.
times	Modifies Do only. JOSS executes part or step specified number of times. Do part 4, 43 times. Do step 7.3, $n+1$ times.
in form	Modifies Type only. JOSS types values in fields of specified form. Type $x, y, z**2$ in form 3.
sparse	Modifies JOSS' treatment of missing array elements. JOSS treats them as zeros and they require no storage. Let A be sparse.

time	Time of day at Computation Center. Type time.
users	Number of terminals being serviced by JOSS at the moment. Type users.
size	Number of storage units currently occupied by user's program and data; about 1550 are available.
timer	Time in minutes and hundredths since logon or last Reset timer command.
cpu	Processor time in seconds and hundredths since logon or last Reset cpu command.
\$	Number of lines remaining on the page or screen.

FUNCTIONS

MATHEMATICAL:

sqrt(x) square root, $x \geq 0$

sin(x) x in radians, $x \in (-100, 100)$

cos(x) x in radians, $x \in (-100, 100)$

log(x) natural log, $x > 0$

exp(x) e^x , $\exp(1) = e$

arg(x,y) central angle, in radians, from positive x axis to the point (x,y).
arg(0,0)=0, arg(-1,0)=pi.

NUMBER DISSECTION:

sgn(x) signum (or sign) $= -1$ if $x < 0$
 $= 0$ if $x = 0$
 $= +1$ if $x > 0$

ip(x) integer part $ip(100.5) = 100$

fp(x) fractional part $fp(100.5) = .5$

dp(x) digit part $dp(100.5) = 1.005$

xp(x) exponent part $xp(100.5) = 2$

x absolute value for numeric values
 $= 0$ if $x=false$
 $= 1$ if $x=true$

tv(x) translation value $= 1$ if $x=true$
 $= 0$ if $x=false$
 $= false$ if $x=0$
 $= true$ if $x \neq 0$

ITERATIVE:

sum[i=a(b)c: f(i)] $\text{sum}[x, y, z+10]$

prod[i=a(b)c: f(i)] $\text{prod}[x, y, z+10]$

min[i=a(b)c: f(i)] $\text{min}[x, y, z+10]$

max[i=a(b)c: f(i)] $\text{max}[x, y, z+10]$

conj[i=a(b)c: P(i)] $\text{conj}[x:y=z, y-3, P]$

disj[i=a(b)c: P(i)] $\text{disj}[x:y=z, y-3, P]$

first[i=a(b)c: P(i)] gives first value of i for which P(i) is true

RULES OF FORM

One command per line, one line per command.

Each input line must be ended by pressing the Return key.

Before you type anything, make sure that JESS is ready to receive input. It will indicate this by typing an underscore and, if available, ringing the bell.

Lines can be corrected by backspacing and retyping before pressing Return. Lines that begin or end with an asterisk, or end with an interrupt, are ignored.

Words and numerals may neither abut nor contain embedded spaces; spaces may not appear between an identifier (or any array, a formula, or a function) and its associated left grouper, otherwise, spaces may be used freely.

Except for the step number at the beginning of a stored command, anywhere a number may be used, an equivalent expression may also be used.

The not sign as used in "not equal" ($\neq$) may appear as a backslash or a tilde on some terminals. The underscore may appear as a left-pointing arrow.

STATEMENT FORMAT

Step Number	Verb	Arguments	Modifiers
1.23	Type	x,y,z+3	in form 3 if $x+y>10$.
1.4	Do	part 6	for $x = 1(1)100, 500$.

VIM AUXILIARY

DIRECT

COMMAND: Step number not present; command is executed immediately.

STORED

COMMAND: Step number present; command is stored in order of step number.

STEP:

A stored command; step number is limited to 9-digit number -1.

PART:

A group of steps whose step numbers have the same integer part.

FORM:

A pictorial specification of literal information and fields to be filled with values, used for formatted output. Fields are indicated by strings of underscores (with an optional decimal point) or strings of periods (for a tabular form of scientific notation).

NUMBERS:

Limited to 9 significant digits:
 $10^{-9} = \text{value} = 9.99999999 \times 10^{93}$
or value = 0

SYMBOLS:

Single-letter identifiers, upper or lower case. May identify decimal values, logical values (true, false), formulas, and arrays of values.

FORMULAS:

May have up to 10 formal parameters (distinct letters) or none (see Let, under Verbs).

ARRAYS:

May have up to 10 integer-valued indices in the range [-250, 250].

ARITHMETIC:

Addition (+), subtraction (-), multiplication (*), division (/), exponentiation (**), and square root (sqrt) give true results rounded to 9 significant digits. Zero is substituted on underflow.

RELATIONS:

$=$, $<$, $>$, $\neq$, $\leq$, $\geq$ (extended relations allowed; e.g., $a:b=c$).

LOGIC:

and, or, not

GROUPERS:

() [] used interchangeably, in pairs.

IMPLIED

GROUPINGS: $3+1/2+1/4*5 = \{3+(1/2)\}+[(1/4)*5]$
 $-2**3*4-5 = [-(2^3)*4]-5$
 $2**3**4 = (2^3)^4$

a or b and not c or d = a or [b and (not c)] or d