

# .4515 Dia., 230 Gr. FMJ Match

POINT BLANK RANGE COMPUTED FOR 2.0 INCHES ABOVE AND BELOW LINE OF SIGHT

RANGE YARDS	MUZZLE	10	20	30	40	50	75	100
MAXIMUM POINT BLANK RANGE IS 115 YARDS. SET ZERO AT 95 YARDS.								
VELOCITY FPS	1550	1505	1462	1420	1380	1342	1253	1177
ENERGY FT-LB	1226	1157	1092	1031	973	920	802	707
DROP INCHES	.00	-.07	-.30	-.69	-1.25	-1.99	-4.71	-8.82
BULLET PATH (20 YDS)	-.80	-.32	.00	.16	.15	-.05	-1.40	-4.13
INCHES (30 YDS)	-.80	-.38	-.11	.00	-.07	-.31	-1.80	-4.67
(ZERO RANGE) (40 YDS)	-.80	-.36	-.07	.05	.00	-.23	-1.68	-4.50
(50 YDS)	-.80	-.31	.02	.19	.18	.00	-1.33	-4.04
MPBR ZERO (95 YDS)	-.80	.04	.73	1.26	1.61	1.78	1.34	-.48
WIND DRIFT (10 MPH)	.00	.05	.20	.46	.82	1.29	2.96	5.31
INCHES (20 MPH)	.00	.10	.40	.92	1.64	2.59	5.91	10.63

MAXIMUM POINT BLANK RANGE IS 115 YARDS. SET ZERO AT 95 YARDS.								
VELOCITY FPS	1500	1457	1415	1375	1337	1301	1217	1146
ENERGY FT-LB	1148	1084	1023	966	913	864	757	671
DROP INCHES	.00	-.08	-.32	-.73	-1.33	-2.12	-5.03	-9.39
BULLET PATH (20 YDS)	-.80	-.32	.00	.14	.11	-.13	-1.63	-4.60
INCHES (30 YDS)	-.80	-.37	-.10	.00	-.09	-.37	-1.99	-5.09
(ZERO RANGE) (40 YDS)	-.80	-.34	-.05	.07	.00	-.26	-1.83	-4.87
(50 YDS)	-.80	-.29	.05	.22	.21	.00	-1.44	-4.35
MPBR ZERO (95 YDS)	-.80	.09	.82	1.37	1.74	1.92	1.43	-.52
WIND DRIFT (10 MPH)	.00	.05	.21	.47	.84	1.33	3.02	5.40
INCHES (20 MPH)	.00	.10	.42	.94	1.69	2.65	6.04	10.80

MAXIMUM POINT BLANK RANGE IS 110 YARDS. SET ZERO AT 90 YARDS.								
VELOCITY FPS	1450	1408	1369	1331	1294	1260	1182	1117
ENERGY FT-LB	1073	1013	957	904	856	811	714	638
DROP INCHES	.00	-.08	-.34	-.78	-1.42	-2.27	-5.37	-10.02
BULLET PATH (20 YDS)	-.80	-.31	.00	.13	.06	-.22	-1.89	-5.12
INCHES (30 YDS)	-.80	-.35	-.08	.00	-.11	-.43	-2.21	-5.54
(ZERO RANGE) (40 YDS)	-.80	-.33	-.03	.08	.00	-.29	-2.00	-5.26
(50 YDS)	-.80	-.27	.09	.26	.23	.00	-1.57	-4.68
MPBR ZERO (90 YDS)	-.80	.09	.81	1.34	1.67	1.80	1.13	-1.09
WIND DRIFT (10 MPH)	.00	.05	.21	.48	.86	1.35	3.07	5.45
INCHES (20 MPH)	.00	.11	.43	.97	1.73	2.71	6.14	10.91

MAXIMUM POINT BLANK RANGE IS 110 YARDS. SET ZERO AT 90 YARDS.								
VELOCITY FPS	1400	1360	1323	1287	1253	1221	1149	1093
ENERGY FT-LB	1000	945	893	846	801	761	674	610
DROP INCHES	.00	-.09	-.37	-.84	-1.52	-2.43	-5.74	-10.70
BULLET PATH (20 YDS)	-.80	-.31	.00	.11	.01	-.32	-2.17	-5.67
INCHES (30 YDS)	-.80	-.34	-.07	.00	-.14	-.50	-2.44	-6.03
(ZERO RANGE) (40 YDS)	-.80	-.31	.00	.10	.00	-.33	-2.18	-5.68
(50 YDS)	-.80	-.24	.13	.30	.26	.00	-1.70	-5.03
MPBR ZERO (90 YDS)	-.80	.15	.90	1.46	1.81	1.94	1.21	-1.16
WIND DRIFT (10 MPH)	.00	.05	.22	.49	.88	1.38	3.10	5.46
INCHES (20 MPH)	.00	.11	.44	.99	1.76	2.75	6.19	10.93

MAXIMUM POINT BLANK RANGE IS 105 YARDS. SET ZERO AT 85 YARDS.								
VELOCITY FPS	1350	1312	1277	1243	1212	1182	1117	1074
ENERGY FT-LB	930	880	833	790	750	714	638	590
DROP INCHES	.00	-.10	-.39	-.90	-1.64	-2.61	-6.15	-11.42
BULLET PATH (20 YDS)	-.80	-.30	.00	.09	-.05	-.43	-2.48	-6.26
INCHES (30 YDS)	-.80	-.33	-.06	.00	-.17	-.57	-2.69	-6.55
(ZERO RANGE) (40 YDS)	-.80	-.29	.03	.13	.00	-.36	-2.38	-6.13
(50 YDS)	-.80	-.21	.17	.34	.29	.00	-1.84	-5.40
MPBR ZERO (85 YDS)	-.80	.14	.89	1.42	1.72	1.79	.85	-1.82
WIND DRIFT (10 MPH)	.00	.06	.22	.50	.89	1.39	3.10	5.39
INCHES (20 MPH)	.00	.11	.44	1.00	1.78	2.77	6.19	10.77

MAXIMUM POINT BLANK RANGE IS 105 YARDS. SET ZERO AT 85 YARDS.

VELOCITY FPS		1300	1265	1232	1201	1172	1146	1091	1056
ENERGY FT-LB		862	817	775	737	702	670	608	570
DROP INCHES		.00	-.10	-.42	-.97	-1.76	-2.80	-6.59	-12.20
BULLET PATH	( 20 YDS)	-.80	-.29	.00	.06	-.12	-.55	-2.81	-6.88
INCHES	( 30 YDS)	-.80	-.31	-.04	.00	-.20	-.65	-2.96	-7.09
(ZERO RANGE)	( 40 YDS)	-.80	-.26	.06	.15	.00	-.40	-2.59	-6.59
	( 50 YDS)	-.80	-.18	.22	.39	.32	.00	-1.99	-5.79
MPBR ZERO	( 85 YDS)	-.80	.20	.99	1.55	1.87	1.93	.91	-1.93
WIND DRIFT	(10 MPH)	.00	.06	.22	.50	.89	1.38	3.05	5.20
INCHES	(20 MPH)	.00	.11	.45	1.00	1.77	2.76	6.11	10.39

RANGE YARDS	MUZZLE	10	20	30	40	50	75	100
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MAXIMUM POINT BLANK RANGE IS 100 YARDS. SET ZERO AT 80 YARDS.

VELOCITY FPS		1250	1218	1188	1160	1134	1110	1070	1038
ENERGY FT-LB		797	757	720	687	657	629	585	551
DROP INCHES		.00	-.11	-.46	-1.05	-1.90	-3.02	-7.07	-13.01
BULLET PATH	( 20 YDS)	-.80	-.28	.00	.04	-.18	-.68	-3.15	-7.52
INCHES	( 30 YDS)	-.80	-.30	-.02	.00	-.23	-.74	-3.25	-7.65
(ZERO RANGE)	( 40 YDS)	-.80	-.24	.09	.18	.00	-.44	-2.81	-7.06
	( 50 YDS)	-.80	-.15	.27	.44	.36	.00	-2.14	-6.17
MPBR ZERO	( 80 YDS)	-.80	.20	.97	1.49	1.75	1.74	.48	-2.68
WIND DRIFT	(10 MPH)	.00	.06	.22	.49	.87	1.35	2.92	4.88
INCHES	(20 MPH)	.00	.11	.44	.99	1.75	2.71	5.84	9.76

MAXIMUM POINT BLANK RANGE IS 100 YARDS. SET ZERO AT 80 YARDS.

VELOCITY FPS		1200	1171	1144	1119	1097	1083	1049	1020
ENERGY FT-LB		735	700	668	640	615	599	562	531
DROP INCHES		.00	-.12	-.50	-1.14	-2.05	-3.26	-7.58	-13.86
BULLET PATH	( 20 YDS)	-.80	-.27	.00	.01	-.26	-.82	-3.52	-8.18
INCHES	( 30 YDS)	-.80	-.28	-.01	.00	-.27	-.83	-3.54	-8.21
(ZERO RANGE)	( 40 YDS)	-.80	-.21	.13	.20	.00	-.49	-3.03	-7.53
	( 50 YDS)	-.80	-.11	.33	.50	.39	.00	-2.29	-6.55
MPBR ZERO	( 80 YDS)	-.80	.26	1.07	1.62	1.88	1.86	.50	-2.82
WIND DRIFT	(10 MPH)	.00	.05	.21	.48	.84	1.28	2.67	4.42
INCHES	(20 MPH)	.00	.11	.43	.96	1.68	2.57	5.33	8.85

MAXIMUM POINT BLANK RANGE IS 95 YARDS. SET ZERO AT 75 YARDS.

VELOCITY FPS		1150	1124	1101	1086	1072	1058	1028	1001
ENERGY FT-LB		675	646	619	602	586	572	539	511
DROP INCHES		.00	-.13	-.54	-1.23	-2.21	-3.50	-8.09	-14.74
BULLET PATH	( 20 YDS)	-.80	-.26	.00	-.02	-.34	-.96	-3.87	-8.84
INCHES	( 30 YDS)	-.80	-.26	.01	.00	-.31	-.92	-3.82	-8.77
(ZERO RANGE)	( 40 YDS)	-.80	-.18	.17	.23	.00	-.53	-3.24	-8.00
	( 50 YDS)	-.80	-.07	.38	.55	.43	.00	-2.44	-6.93
MPBR ZERO	( 75 YDS)	-.80	.25	1.03	1.53	1.73	1.63	.00	-3.68
WIND DRIFT	(10 MPH)	.00	.05	.20	.44	.74	1.11	2.28	3.82
INCHES	(20 MPH)	.00	.10	.41	.88	1.48	2.21	4.56	7.63

MAXIMUM POINT BLANK RANGE IS 90 YARDS. SET ZERO AT 75 YARDS.

VELOCITY FPS		1100	1085	1071	1057	1045	1033	1005	980
ENERGY FT-LB		617	601	585	571	557	545	516	491
DROP INCHES		.00	-.14	-.58	-1.32	-2.37	-3.74	-8.60	-15.60
BULLET PATH	( 20 YDS)	-.80	-.25	.00	-.05	-.41	-1.09	-4.22	-9.50
INCHES	( 30 YDS)	-.80	-.24	.03	.00	-.34	-1.01	-4.10	-9.34
(ZERO RANGE)	( 40 YDS)	-.80	-.15	.21	.26	.00	-.58	-3.45	-8.48
	( 50 YDS)	-.80	-.03	.44	.60	.46	.00	-2.59	-7.33
MPBR ZERO	( 75 YDS)	-.80	.31	1.13	1.64	1.84	1.73	.00	-3.87
WIND DRIFT	(10 MPH)	.00	.03	.13	.29	.51	.79	1.75	3.04
INCHES	(20 MPH)	.00	.07	.26	.58	1.03	1.59	3.49	6.08

MAXIMUM POINT BLANK RANGE IS 85 YARDS. SET ZERO AT 70 YARDS.

VELOCITY FPS		1050	1037	1026	1015	1004	994	970	948
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ENERGY FT-LB	562	549	537	526	515	504	480	459
DROP INCHES	.00	-.16	-.63	-1.44	-2.59	-4.07	-9.35	-16.93
BULLET PATH (20 YDS)	-.80	-.24	.00	-.09	-.52	-1.29	-4.77	-10.56
INCHES (30 YDS)	-.80	-.21	.06	.00	-.40	-1.14	-4.55	-10.26
(ZERO RANGE) (40 YDS)	-.80	-.11	.26	.30	.00	-.64	-3.80	-9.26
(50 YDS)	-.80	.02	.52	.68	.51	.00	-2.84	-7.98
MPBR ZERO (70 YDS)	-.80	.32	1.11	1.58	1.71	1.49	-.60	-5.00
WIND DRIFT (10 MPH)	.00	.03	.12	.26	.46	.72	1.59	2.78
INCHES (20 MPH)	.00	.06	.24	.53	.93	1.44	3.18	5.56

MAXIMUM POINT BLANK RANGE IS 85 YARDS. SET ZERO AT 70 YARDS.

VELOCITY FPS	1000	989	980	971	962	953	932	913
ENERGY FT-LB	510	500	490	481	472	464	444	426
DROP INCHES	.00	-.17	-.70	-1.58	-2.84	-4.47	-10.22	-18.46
BULLET PATH (20 YDS)	-.80	-.22	.00	-.14	-.65	-1.53	-5.41	-11.78
INCHES (30 YDS)	-.80	-.18	.09	.00	-.46	-1.30	-5.06	-11.32
(ZERO RANGE) (40 YDS)	-.80	-.06	.32	.35	.00	-.72	-4.20	-10.17
(50 YDS)	-.80	.08	.61	.78	.58	.00	-3.12	-8.73
MPBR ZERO (70 YDS)	-.80	.41	1.27	1.76	1.89	1.64	-.65	-5.44
WIND DRIFT (10 MPH)	.00	.03	.11	.24	.42	.66	1.45	2.56
INCHES (20 MPH)	.00	.05	.21	.48	.84	1.31	2.91	5.11

RANGE YARDS	MUZZLE	10	20	30	40	50	75	100
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MAXIMUM POINT BLANK RANGE IS 80 YARDS. SET ZERO AT 65 YARDS.

VELOCITY FPS	950	941	933	925	918	910	893	876
ENERGY FT-LB	460	452	445	437	430	423	407	392
DROP INCHES	.00	-.18	-.76	-1.73	-3.11	-4.90	-11.22	-20.26
BULLET PATH (20 YDS)	-.80	-.20	.00	-.19	-.79	-1.80	-6.17	-13.27
INCHES (30 YDS)	-.80	-.14	.13	.00	-.53	-1.48	-5.69	-12.62
(ZERO RANGE) (40 YDS)	-.80	-.01	.40	.40	.00	-.81	-4.69	-11.29
(50 YDS)	-.80	.16	.72	.89	.65	.00	-3.47	-9.66
MPBR ZERO (65 YDS)	-.80	.43	1.26	1.70	1.73	1.35	-1.44	-6.95
WIND DRIFT (10 MPH)	.00	.02	.10	.22	.39	.61	1.35	2.38
INCHES (20 MPH)	.00	.05	.20	.44	.78	1.21	2.70	4.75

MAXIMUM POINT BLANK RANGE IS 80 YARDS. SET ZERO AT 65 YARDS.

VELOCITY FPS	900	893	886	879	873	867	851	837
ENERGY FT-LB	413	407	401	395	389	383	370	357
DROP INCHES	.00	-.20	-.84	-1.92	-3.45	-5.43	-12.42	-22.41
BULLET PATH (20 YDS)	-.80	-.18	.00	-.26	-.97	-2.13	-7.08	-15.01
INCHES (30 YDS)	-.80	-.10	.17	.00	-.62	-1.70	-6.43	-14.14
(ZERO RANGE) (40 YDS)	-.80	.06	.48	.47	.00	-.92	-5.26	-12.59
(50 YDS)	-.80	.24	.85	1.02	.74	.00	-3.88	-10.75
MPBR ZERO (65 YDS)	-.80	.55	1.46	1.93	1.95	1.52	-1.60	-7.71
WIND DRIFT (10 MPH)	.00	.02	.09	.20	.36	.56	1.25	2.22
INCHES (20 MPH)	.00	.05	.18	.40	.72	1.12	2.50	4.43

MAXIMUM POINT BLANK RANGE IS 75 YARDS. SET ZERO AT 60 YARDS.

VELOCITY FPS	850	844	838	832	826	821	807	794
ENERGY FT-LB	368	363	358	353	349	344	333	322
DROP INCHES	.00	-.23	-.94	-2.15	-3.86	-6.07	-13.88	-25.00
BULLET PATH (20 YDS)	-.80	-.16	.00	-.34	-1.18	-2.52	-8.16	-17.11
INCHES (30 YDS)	-.80	-.04	.23	.00	-.73	-1.96	-7.31	-15.98
(ZERO RANGE) (40 YDS)	-.80	.14	.59	.54	.00	-1.05	-5.95	-14.16
(50 YDS)	-.80	.35	1.01	1.18	.84	.00	-4.37	-12.06
MPBR ZERO (60 YDS)	-.80	.57	1.46	1.85	1.75	1.13	-2.68	-9.80
WIND DRIFT (10 MPH)	.00	.02	.09	.20	.35	.54	1.22	2.17
INCHES (20 MPH)	.00	.04	.17	.39	.70	1.09	2.44	4.34

MAXIMUM POINT BLANK RANGE IS 70 YARDS. SET ZERO AT 55 YARDS.

VELOCITY FPS	800	794	789	784	779	774	762	750
ENERGY FT-LB	326	322	318	314	310	306	296	287
DROP INCHES	.00	-.24	-1.03	-2.38	-4.29	-6.77	-15.52	-28.01
BULLET PATH (20 YDS)	-.80	-.13	.00	-.43	-1.42	-2.99	-9.45	-19.65

INCHES	( 30 YDS)	-80	.02	.29	.00	-.85	-2.27	-8.38	-18.22
(ZERO RANGE)	( 40 YDS)	-80	.23	.71	.64	.00	-1.21	-6.78	-16.09
	( 50 YDS)	-80	.47	1.20	1.36	.97	.00	-4.97	-13.68
MPBR ZERO	( 55 YDS)	-80	.60	1.45	1.75	1.48	.64	-4.01	-12.40
WIND DRIFT	(10 MPH)	.00	.02	.09	.20	.35	.55	1.23	2.19
INCHES	(20 MPH)	.00	.04	.17	.39	.70	1.09	2.46	4.38

MAXIMUM POINT BLANK RANGE IS 65 YARDS. SET ZERO AT 50 YARDS.

VELOCITY FPS		750	745	740	736	731	726	715	704
ENERGY FT-LB		287	283	280	276	273	269	261	253
DROP INCHES		.00	-.27	-1.17	-2.70	-4.87	-7.69	-17.63	-31.81
BULLET PATH	( 20 YDS)	-80	-.09	.00	-.55	-1.73	-3.57	-11.05	-22.77
INCHES	( 30 YDS)	-80	.09	.36	.00	-1.00	-2.66	-9.69	-20.95
(ZERO RANGE)	( 40 YDS)	-80	.35	.87	.75	.00	-1.40	-7.80	-18.44
	( 50 YDS)	-80	.63	1.43	1.60	1.12	.00	-5.70	-15.63
MPBR ZERO	( 50 YDS)	-80	.63	1.43	1.60	1.12	.00	-5.70	-15.63
WIND DRIFT	(10 MPH)	.00	.02	.09	.20	.36	.56	1.26	2.25
INCHES	(20 MPH)	.00	.04	.18	.40	.71	1.12	2.52	4.50

MAXIMUM POINT BLANK RANGE IS 60 YARDS. SET ZERO AT 50 YARDS.

VELOCITY FPS		700	695	691	687	683	678	668	658
ENERGY FT-LB		250	247	244	241	238	235	228	221
DROP INCHES		.00	-.31	-1.34	-3.10	-5.59	-8.82	-20.22	-36.48
BULLET PATH	( 20 YDS)	-80	-.04	.00	-.68	-2.10	-4.27	-13.00	-26.58
INCHES	( 30 YDS)	-80	.19	.46	.00	-1.19	-3.13	-11.28	-24.29
(ZERO RANGE)	( 40 YDS)	-80	.48	1.05	.89	.00	-1.64	-9.05	-21.32
	( 50 YDS)	-80	.81	1.71	1.88	1.31	.00	-6.59	-18.04
MPBR ZERO	( 50 YDS)	-80	.81	1.71	1.88	1.31	.00	-6.59	-18.04
WIND DRIFT	(10 MPH)	.00	.02	.09	.21	.37	.58	1.32	2.36
INCHES	(20 MPH)	.00	.05	.19	.42	.75	1.17	2.64	4.71