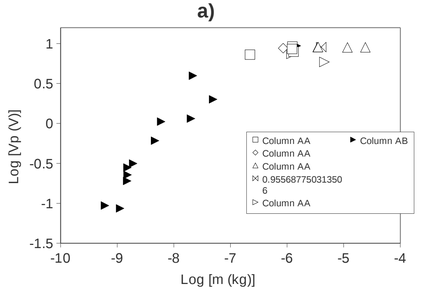
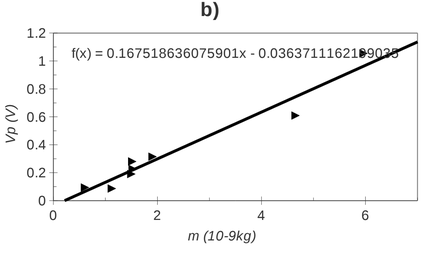
File created by SFG. Data obtained by BAMV. Version 8/7/99

Light gas gun results for CFRP/ Kapton. assuming +x +y quadrant

Tie point = 0.73

Data used for calibration

shot no	Date	Projectile material	penetration?	diameter of particle (m)	Density kg m-3	Calculated mass of 1 particle	velocity km/s	Momentum of 1 particle	Number of impacting particles	Combined momentum of particles	distance to sensor	x position	y position	Mean raw. Sensitivity at (x,y) and (-x,-y)	Correction factor to impact at 4cm standard position	Entry area mm2	Exit area mm2	Front detector measured voltage	log measured voltage	Position corrected voltage	Log position corrected voltage	Rear detector measured voltage	Comment	log total momentum	log voltage	log corrrected voltage	log mass at 6.12 km s-1	Total momentum	voltage	corrected voltage	mass at 6.12 km s-1/1e-9)
12		Al	yes	0.001	2710	=4*3.1416*((4/2)^3)*(F4/3)	5.01	=G4*H4*1000	1	=I4*J4						6.08	22.46							=LOG(K4)			=LOG(K4/6120)				
13		Al	yes	0.0015	2710	=4*3.1416*((5/2)^3)*(F5/3)	4.69	=G5*H5*1000	1	=I5*J5						10.41	39.93							=LOG(K5)			=LOG(K5/6120)				
14		Al	yes	0.0008	2710	=4*3.1416*((6/2)^3)*(F6/3)	5.21	=G6*H6*1000	1	=I6*J6						4.27	15.04							=LOG(K6)			=LOG(K6/6120)				
18		Al	yes	0.001	2710	=4*3.1416*((7/2)^3)*(F7/3)	4.85	=G7*H7*1000	1	=I7*J7						4.71	22.04							=LOG(K7)			=LOG(K7/6120)				
23		Al	yes	0.001	2710	=4*3.1416*((8/2)^3)*(F8/3)	5.35	=G8*H8*1000	1	=I8*J8						3.49	19.19	9.18	=LOG(S8)					=LOG(K8)	=LOG(S8)		=LOG(K8/6120)				
46	98/06/23d	Al	yes	3.81E-04	2710	=4*3.1416*((9/2)^3)*(F9/3)	5.75	=G9*H9*1000	3	=I9*J9	29.4	3	0	1.6508	=$P$2/O9	5.01	0.44	7.27	=LOG(S9)	=S9*P9	=LOG(U9)	0		=LOG(K9)	=LOG(S9)	=LOG(U9)	=LOG(K9/6120)				
47	98/06/26a	Al	yes	0.001	2710	=4*3.1416*((10/2)^3)*(F10/3)	5.61	=G10*H10*1000	1	=I10*J10	37.9	1	4	0.5693	=$P$2/O10	5.83	34.52	7.93	0.8992732	=S10*P10	1.0072549	8.34		-2.099068	0.8992732	1.0072549	=LOG(K10/6120)				
48	98/06/26b	Al	yes	0.001	2710	=4*3.1416*((11/2)^3)*(F11/3)	5.28	=G11*H11*1000	1	=I11*J11	29.07	3	0	1.6508	=$P$2/O11	5.06	20.26	8.56	0.9324738	=S11*P11	0.5781022	7.82		-2.125397	0.9324738	0.5781022	=LOG(K11/6120)				
15		Nylon	yes	0.0012	1150	=4*3.1416*((12/2)^3)*(F12/3)	5.17	=G12*H12*1000	1	=I12*J12						4.92	0.4							-2.269268			=LOG(K12/6120)				
16		Nylon	yes	0.0012	1150	=4*3.1416*((13/2)^3)*(F13/3)	5	=G13*H13*1000	1	=I13*J13						6.19	1.39							-2.283789			=LOG(K13/6120)				
17		Nylon	yes	0.0012	1150	=4*3.1416*((14/2)^3)*(F14/3)	4.07	=G14*H14*1000	1	=I14*J14						4.08	8.52							-2.373164			=LOG(K14/6120)				
25		Nylon	yes	0.0012	1150	=4*3.1416*((15/2)^3)*(F15/3)	5.02	=G15*H15*1000	1	=I15*J15						5.14	?	8.75	0.9420081					-2.282055	0.9420081		=LOG(K15/6120)				
36		Steel	yes	0.001	7930	=4*3.1416*((16/2)^3)*(F16/3)	5.12	=G16*H16*1000	1	=I16*J16						5.23	16.52	9.01	0.9547248			2.67		-1.672457	0.9547248		=LOG(K16/6120)				
40		Steel	yes	0.001	7930	=4*3.1416*((17/2)^3)*(F17/3)	5.2	=G17*H17*1000	1	=I17*J17						4.6	12.3	9.06	0.9571282			7.45		-1.665724	0.9571282		=LOG(K17/6120)				
43		Steel	?	0.0008	7930	=4*3.1416*((18/2)^3)*(F18/3)	5.07	=G18*H18*1000	1	=I18*J18															-1.967449			=LOG(K18/6120)				
44		Steel	yes	0.0015	7930	=4*3.1416*((19/2)^3)*(F19/3)	5.09	=G19*H19*1000	1	=I19*J19								8.94	0.9513375			8.23		-1.146736	0.9513375		=LOG(K19/6120)				
45		Steel	yes	0.002	7930	=4*3.1416*((20/2)^3)*(F20/3)	4.45	=G20*H20*1000	1	=I20*J20								8.98	0.9532763			8.3		-0.830277	0.9532763		=LOG(K20/6120)				
41		Phosphor-bronze	yes	0.001	8900	=4*3.1416*((21/2)^3)*(F21/3)	5.27	=G21*H21*1000	1	=I21*J21						3.74	18.33	9.03	0.9556878			8.37		-1.609800	0.9556878		=LOG(K21/6120)				
37		4520	yes	0.001	4540	=4*3.1416*((22/2)^3)*(F22/3)	5.09	=G22*H22*1000	1	=I22*J22						3.5	26.21							-1.917227			=LOG(K22/6120)				
50	98/07/06a	Soda Glass	no	0.0001951	2450	=4*3.1416*((23/2)^3)*(F23/3)	5.29	=G23*H23*1000	6	=I23*J23	33.79	4	0	1.5239	=$P$2/O23	1.18	0	4.18	0.6211763	=S23*P23	0.3015427	0		-3.519456	0.6211763	0.3015427	=LOG(K23/6120)				
52	98/12/18a	Soda Glass	no	0.00105	2450	=4*3.1416*((24/2)^3)*(F24/3)	6.1	=G24*H24*1000	1	=I24*J24	54.2	5	-3	0.64555	=$P$2/O24	?	?	8.3	0.9190781	=S24*P24	0.9724711	0		-2.042937	0.9190781	0.9724711	=LOG(K24/6120)				
59	99/01/14b	soda glass	no	0.00018	2450	=4*3.1416*((25/2)^3)*(F25/3)	5.47	=G25*H25*1000	3	=I25*J25	34.47	4	0	1.5239	=$P$2/O25	0.53	0	2.4	0.3802112	=S25*P25	0.0605776	0		-3.910908	0.3802112	0.0605776	=LOG(K25/6120)				
73	99/04/29a	Soda Glass	no	1.78E-04	2450	=4*3.1416*((26/2)^3)*(F26/3)	6.12	=G26*H26*1000	3	=I26*J26	41	0	4	0.4757	=$P$2/O26		0	2.58	0.4116197	=S26*P26	0.5976094	0		-3.876702	0.4116197	0.5976094	=LOG(K26/6120)				
74	99/04/29b	Soda Glass	no	0.000106	2450	=4*3.1416*((27/2)^3)*(F27/3)	6.1	=G27*H27*1000	1	=I27*J27	44.5	4	1	1.48095	=$P$2/O27		0	0.461	-0.336299	=S27*P27	-0.643517	0		-5.030587	-0.336299	-0.643517	=LOG(K27/6120)	=K27	=S27	=U27	=(AF27/6120)*1000000000
75	99/05/14a	Soda Glass	no	0.000106	2450	=4*3.1416*((28/2)^3)*(F28/3)	6.07	=G28*H28*1000	1	=I28*J28	43.39	4	1	1.48095	=$P$2/O28		0	0.569	-0.244888	=S28*P28	-0.552105	0	Debris	-5.032728	-0.244888	-0.552105	=LOG(K28/6120)	=K28	=S28	=U28	=(AF28/6120)*1000000000
76	99/05/14b	Soda Glass	no	0.000106	2450	=4*3.1416*((29/2)^3)*(F29/3)	5.97	=G29*H29*1000	4	=I29*J29	40	5	0	1.1695	=$P$2/O29		0	1.689	0.2276296	=S29*P29	0.0229523	0	Debris	-4.437882	0.2276296	0.0229523	=LOG(K29/6120)	=K29	=S29	=U29	=(AF29/6120)*1000000000
77	99/05/14c	Soda Glass	no	0.000078	2450	=4*3.1416*((30/2)^3)*(F30/3)	5.65	=G30*H30*1000	2	=I30*J30	85	8	0	0.99685	=$P$2/O30		0	0.118	-0.928118	=S30*P30	-1.063425	0		-5.162472	-0.928118	-1.063425	=LOG(K30/6120)	=K30	=S30	=U30	=(AF30/6120)*1000000000
78	99/05/14d	Soda Glass	no	0.000078	2450	=4*3.1416*((31/2)^3)*(F31/3)	6.39	=G31*H31*1000	3	=I31*J31	27	3	0	1.6508	=$P$2/O31		0	0.712	-0.147520	=S31*P31	-0.501892	0		-4.932928	-0.147520	-0.501892	=LOG(K31/6120)	=K31	=S31	=U31	=(AF31/6120)*1000000000
79	99/05/19a	Soda Glass	no	0.000078	2450	=4*3.1416*((32/2)^3)*(F32/3)	6.1	=G32*H32*1000	1	=I32*J32	28.55	2	0	2.3273	=$P$2/O32		0	0.299	-0.524329	=S32*P32	-1.027858	0		-5.430221	-0.524329	-1.027858	=LOG(K32/6120)	=K32	=S32	=U32	=(AF32/6120)*1000000000
90	99/06/28a	Soda Glass	no	0.000106	2450	=4*3.1416*((33/2)^3)*(F33/3)	6	=G33*H33*1000	1	=I33*J33	35.21	3	0	1.6508	=$P$2/O33		0	0.431	-0.365523	=S33*P33	-0.719894	0		-5.037765	-0.365523	-0.719894	=LOG(K33/6120)	=K33	=S33	=U33	=(AF33/6120)*1000000000
94	99/07/06	Soda Glass	no	0.000154	2450	=4*3.1416*((34/2)^3)*(F34/3)	6.08	=G34*H34*1000	1	=I34*J34	45.22	1	4	0.5693	=$P$2/O34		0	0.475	-0.323306	=S34*P34	-0.215325	0		-4.545369	-0.323306	-0.215325	=LOG(K34/6120)	=K34	=S34	=U34	=(AF34/6120)*1000000000
53	98/12/18	Soda Glass	yes	0.001025	2450	=4*3.1416*((35/2)^3)*(F35/3)	5.93	=G35*H35*1000	1	=I35*J35	42.25	4	0	1.5239	=$P$2/O35	4.77	25.91					?		-2.086608			=LOG(K35/6120)				
80	99/05/19b	Soda Glass	yes	0.000972	2450	=4*3.1416*((36/2)^3)*(F36/3)	6.2	=G36*H36*1000	1	=I36*J36	41.75	4	0	1.5239	=$P$2/O36		7.43	7.43	0.8709888	=S36*P36	0.5513552	4.57		-2.136444	0.8709888	0.5513552	=LOG(K36/6120)				
83	99/05/25a	Soda Glass	yes	0.001564	2450	=4*3.1416*((37/2)^3)*(F37/3)	5.69	=G37*H37*1000	1	=I37*J37	35.8	1	-3	0.5966	=$P$2/O37		36.44	5.88	0.7693773	=S37*P37	0.8570169	6		-1.554012	0.7693773	0.8570169	=LOG(K37/6120)				
86	99/05/25d	Soda Glass	yes	0.000726	2450	=4*3.1416*((38/2)^3)*(F38/3)	5.93	=G38*H38*1000	1	=I38*J38	40.92	0	-4	0.4757	=$P$2/O38		5.11	0				1.037		-2.535970			=LOG(K38/6120)