

**Hall A “LEDEX” RunPlan**  
**1<sup>st</sup> Low-Energy Beam Period ( $E_0 = 362$  MeV): July 24 – Aug. 20, 2006**  
**E05-103**

KINEMATICS TABLE (“KIN-TABLE”):  
 FOR  $d(\gamma,p)n$  PRODUCTION and FOR  $h(e,p)e'$  ELASTIC RUNS

**Table of PRODUCTION KINEMATIC SETTINGS:**

**Note:** pre-run estimates for beam current, and associated rates, done by S. Beck – Assumptions in estimate → rates scaled for our **small 2 msr collimator**, Whisnant parameterization of  $d(\gamma,p)n$  cross section. See S. Beck’s table of “pre-run estimates of polarization uncertainties” to see estimates of polarization uncertainties obtained with 12-hour production-sequence at each point (assumes 150 M events w/ deuterium target, Radiator IN). **ALSO:** Remember when looking at “ $E_\gamma$  Range”: endpoint photon energy = **361.5 MeV**.

KIN POINT # refer to KinPlot	HRS-L Spectrometer Settings		Central Kinematics Setting & Coverage			Pre-Run Estimates	
	$p_h$ (GeV/c)	$\theta_h$ (deg)	$\theta_{cms}$ (deg)	$E_\gamma$ (MeV)	$E_\gamma$ Range (MeV)	Current ( $\mu$ A)	Rate (Hz)
4	0.7230	22.98°	30°	High: 342	317→367	4.0	2700
5	0.6892	38.78°	50°	High: 341	315→367	4.0	2400
6	0.6421	55.42°	70°	High: 340	312→368	4.0	1800
7	0.5857	73.26°	90°	High: 338	308→368	6.0	2200
<i>see Hydrogen Elastic KinTable for Points 8, 9, 10</i>							
11	0.6602	23.40°	30°	Low: 295	274→317	3.0	3700
12	0.6284	39.51°	50°	Low: 293	270→315	4.0	2400
13	0.5873	56.39°	70°	Low: 291	268→315	4.0	3000
14	0.5433	74.31°	90°	Low: 294	268→321	6.0	3200
<i>see Hydrogen Elastic KinTable for Points 15, 16, 17</i>							
18	0.7340	15.26°	20°	High: 342	318→367	4.0	2550
19	0.7080	30.81°	40°	High: 342	317→367	4.0	2500
20	0.6671	46.98°	60°	High: 340	314→368	4.0	2100
21	0.6147	64.15°	80°	High: 339	311→368	6.0	2600
<i>see Hydrogen Elastic KinTable for Points 22, 23, 24</i>							
25	0.5255	92.83°	110°	High: 335	303→369	6.0	1500
26	0.4922	93.93°	110°	Low: 293	265→323	6.0	2400
<i>see Hydrogen Elastic KinTable for Points 27, 28, 29</i>							
30	0.6705	15.53°	20°	Low: 296	275→318	3.0	3600
31	0.6460	31.38°	40°	Low: 294	272→317	4.0	3300
32	0.6108	47.80°	60°	Low: 294	270→317	4.0	3200
33	0.5647	65.21°	80°	Low: 291	267→317	4.0	2500
<i>see Hydrogen Elastic KinTable for Points 34, 35, 36</i>							
37	0.5557	82.79°	100°	High: 336	306→369	3.0	1900
38	0.5151	83.97°	100°	Low: 291	264→319	6.0	2600

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**Table of HYDROGEN ELASTIC KINEMATIC SETTINGS:**

*Note:* pre-run estimates for beam done by R. Gilman – Assumptions in estimate = rates scaled for our **small 2 msr collimator**

KIN POINT # refer to KinPlot	HRS-L Spectrometer Settings		Central Kinematics Setting			Pre-Run Estimate
	$p_h$ (GeV/c)	$\theta_h$ (deg)	Q (GeV)	$T_p$ (MeV)	Elastic Peak Position	Current ( $\mu$ A)
<b>1</b>	0.5577	14.00°	<b>0.5265</b>	147.7	$\delta = -2\%$	3.2
<b>2</b>	0.5468				$\delta = 0\%$	
<b>3</b>	0.5359				$\delta = +2\%$	
<b>8</b>	0.5421	18.84°	<b>0.513</b>	140.0	$\delta = -2\%$	2.8
<b>9</b>	0.5313				$\delta = 0\%$	
<b>10</b>	0.5209				$\delta = +2\%$	
<b>15</b>	0.5211	23.90°	<b>0.494</b>	130.0	$\delta = -2\%$	2.4
<b>16</b>	0.5107				$\delta = 0\%$	
<b>17</b>	0.5007				$\delta = +2\%$	
<b>22</b>	0.4995	28.28°	<b>0.475</b>	120.0	$\delta = -2\%$	2.0
<b>23</b>	0.4895				$\delta = 0\%$	
<b>24</b>	0.4799				$\delta = +2\%$	
<b>27</b>	0.4770	32.30°	<b>0.454</b>	110.0	$\delta = -2\%$	1.8
<b>28</b>	0.4675				$\delta = 0\%$	
<b>29</b>	0.4583				$\delta = +2\%$	
<b>34</b>	0.4537	36.11°	<b>0.433</b>	100.0	$\delta = -2\%$	1.4
<b>35</b>	0.4446				$\delta = 0\%$	
<b>36</b>	0.4359				$\delta = +2\%$	