

ILC 9-cell cavity Tests @ JLab

1/10/2008

Date	9-cell cavity	RF test#	Max Eacc [MV/m]	Limit	Comment
14-Jul-06	S35	1	14.5	quench	
2-Aug-06	S35	2	17.0	quench	
24-Aug-06	A7	3	25.9	power	
29-Aug-06	A7	4	25.6	power	check Q-virus
5-Sep-06	A7	5	29.0	quench	after 120C bake
13-Sep-06	A7	6	29.3	quench	new amplifier
12-Dec-06	A6	7	19.0	?	Q-slope without x-ray
10-Jan-07	A7	8	39.5	quench	little x-ray
16-Jan-07	A7	9	36.0	?	check Q-virus - slight Q-disease
18-Jan-07	A7	10	41.2	quench	re-test after warm up
23-Jan-07	A6	11	29.0	quench	
30-Jan-07	C22				test failed due to wrong coupling
7-Feb-07	A6	12	24.0	cable	incident power cable breakdown started at 16 MV/m
20-Feb-07	A6	13	24.8	quench	new cable
23-Feb-07	C22	14	17.4	quench	
6-Mar-07	AES1	15	17.5	quench	no x-ray
9-Mar-07	A7	16	30.5	quench	no x-ray
21-Mar-07	A6	17	37.8	field emission	
28-Mar-07	AES1	18	18.0	quench	no x-ray
9-Apr-07	A7	19	31.9	quench	x-ray onset at 8MV/m
16-Apr-07	AES1	20	17.0	quench	no x-ray
15-May-07	AES3				test failed due to wrong coupling
21-May-07	AES1	21	16.0	quench	cell 3/7 quench, no x-ray
30-May-07	AES1				connector damage
5-Jun-07	AES3	22	18.7	quench	no x-ray, cell 4/6 quench
22-Jun-07	AES2	23	19.6	quench	x-ray onset 16 MV/m, cell 5, 4/6, 2/8(?) quench
12-Jul-07	AES4	24	28.0	field emission	emitter activation at 28MV/m, limit gradient 18 MV/m
27-Jul-07	AES3	25	17.6	quench	confirmed AES3 quench cell 4/6, FE on-set 14.5 MV/m
6-Aug-07	AES3	26	17.3	quench	repeat test with 8 thermometers, quenching cell is 6
7-Aug-07	AES4	27	25.5	cable	breakdown at cable connector, FE on-set 19 MV/m
15-Aug-07	A8	28	22.1	Q-slope	baseline test since received from Cornell, HPR only, FE onset 8 MV/m
21-Aug-07	AES4	29	19.5	field emission	x-ray onset 8 MV/m, max. rad 2R/h
28-Aug-07	A8	30	20.0	field emission	x-ray onset 8 MV/m, max. rad 2R/h
7-Sep-07	AES3	31		HPR damage	repeated test with 16 thermometers near T7 in cell6
9-Sep-07	A8	32	6	field emission	20 mRad/hr at 3.8 MV/m. Test limited by field emission. Maximum field: 6MV/m. HPR damage
17-Sep-07	LG9-1	33	23.2	quench	Radiation > 20 MRad/hr at 15 MV/m. Test limited by quench.
19-Sep-07	AES4	34	>21.4	cable	Radiation starts at 14.5 MV/m. Cable connector breakdown at 125 watts Pinc. One instance x 3 seconds.
4-Oct-07	AES4	35	>17	cable	Very little radiation. Test limited by cable/connector breakdown. QE1 =8e10.
17-Oct-07	AES3	36	20	quench	Quench limited at 20 MV/m. Field emission is present starting at 11 MV/m . 20 milliRad at 18 MV/m
10-Nov-07	A8	37	31.5	quench	Quench at 31.5 MV/m No Field emission, some multipacting.
21-Nov-07	AES2	38	32.5	quench	Repetitive Quench at 32.5 MV/m + Field emission. 20 Mrad.hr at 26 MV/m.
3-Dec-07	AES4	39	23.5	quench	Repetitive quench at 23.5 MV/m. Some FE. 20mRad/hr at 21 MV/m.