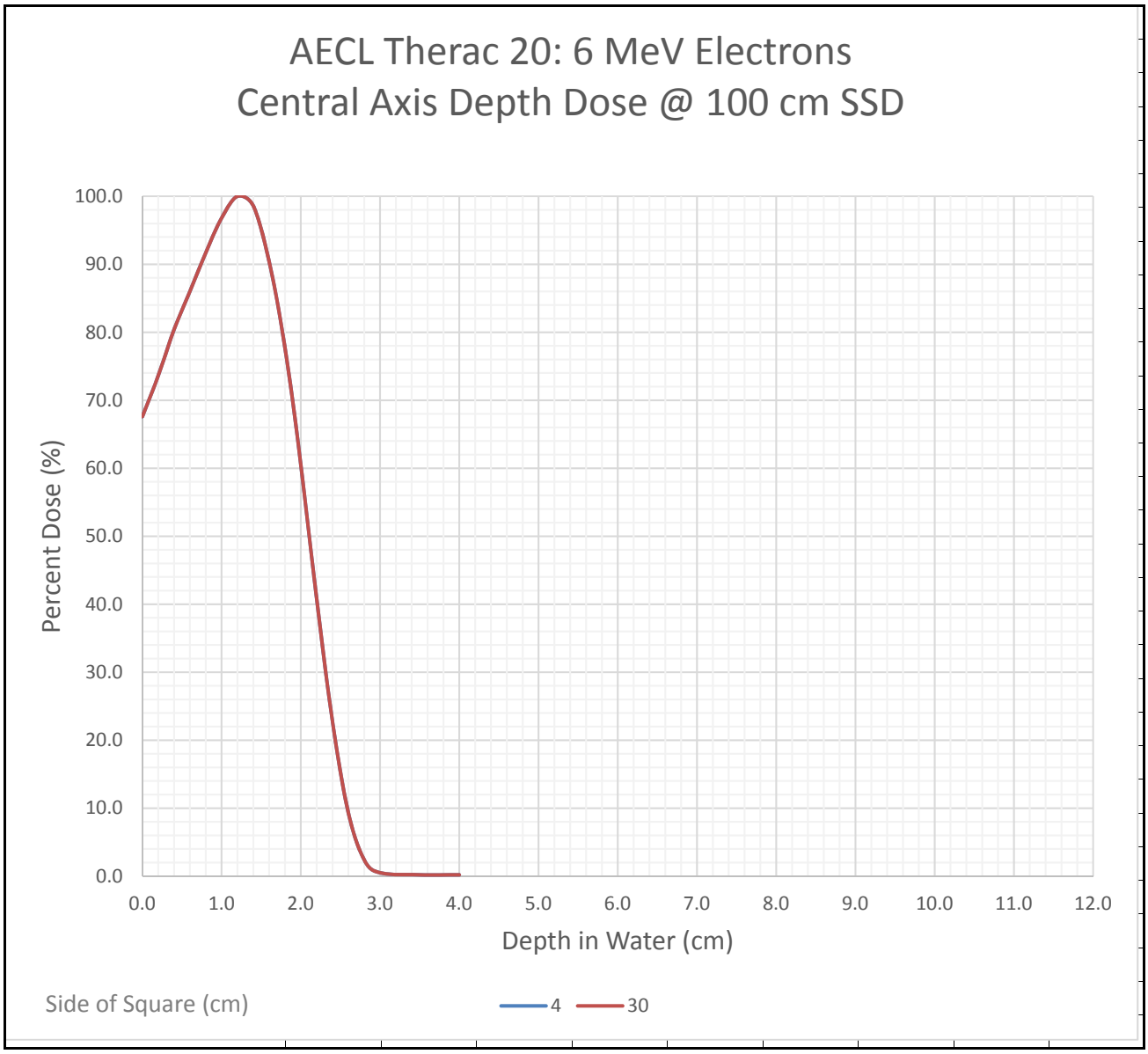
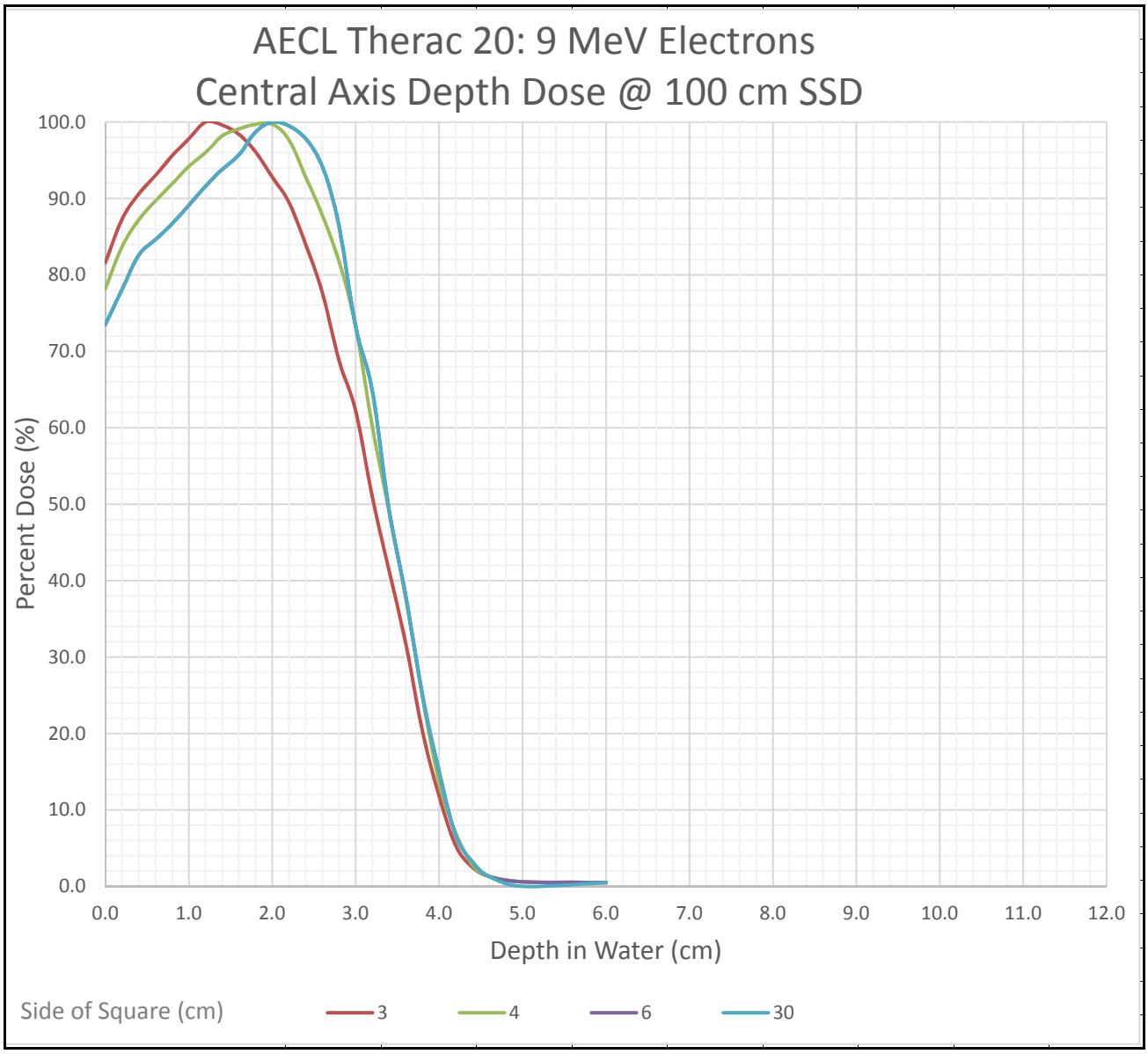
Electron Beam Parameters for AECL Therac 20					
Nominal SSD: 100 cm					
Field Size: 10X10 cm^2					
Nominal Energy (MeV)	6	9	13	17	20
$E_{p,o}$ (MeV)	5.7	8.8	12.1	16.3	19.1
$\bar{E}_o$ (MeV)**	5.0	8.2	12.0	16.3	19.2
Surface Dose (%)	67.6	73.5	81.5	86.7	88.2
Depth to 100% (cm)	1.2	2.0	2.8	4.0	3.0
Depth to Distal 90% (cm)	1.6	2.7	4.0	5.5	6.3
Depth to 80% (cm)	1.7	2.9	4.3	6.0	6.9
Depth to 50% (cm)	2.1	3.4	5.0	6.8	8.0
Depth to 30% (cm)	2.3	3.7	5.4	7.4	8.7
Depth to 10% (cm)	2.6	4.1	5.9	8.1	9.5
Range R_p (cm)	2.6	4.2	5.9	8.1	9.6
X-ray Dose (%) (R_p+2 cm)	0.2	0.5	1.5	2.3	2.5
σ_{θ_x} (radians)	0.063	0.041	0.034	0.025	0.022
$L_{o,eff}$ (cm)	12				
***$E_{p,o}$ (MeV) = 0.22 + 1.98 * R_p (cm) + 0.0025 R_p^2 (cm)**					
****$\bar{E}_o$ (MeV) = 2.4 * R_{50} (cm)**					

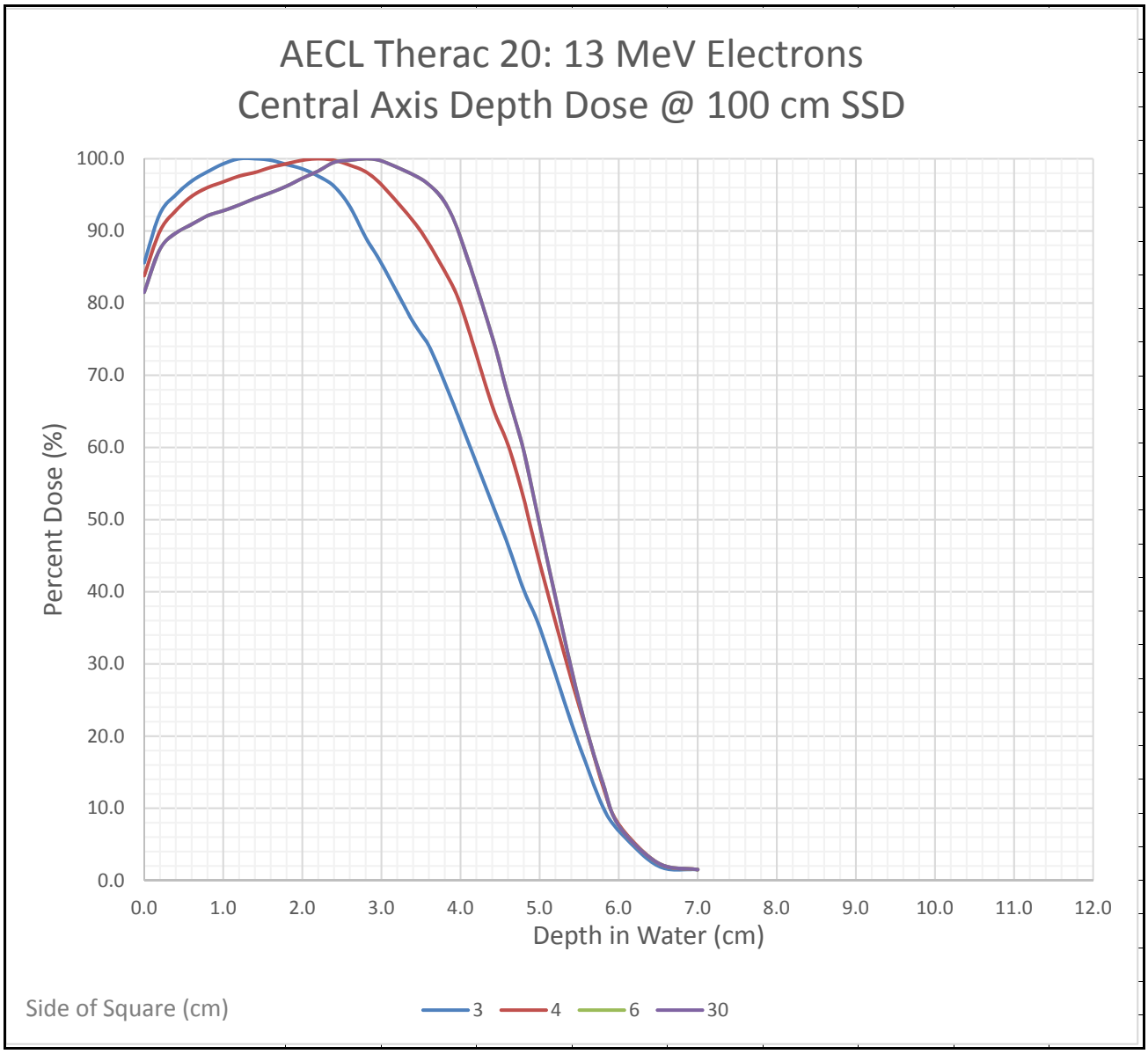
AECL Therac 20: 6 MeV Electrons									
Percent Dose vs Depth									
Nominal Energy (MeV)	**6**								
SSD (cm)	**100**								
$E_{p,o}$ (MeV)	**5.7**								
σ_{θ_x} (radians)	**0.063**								
$L_{o,eff}$ (cm)	**12**								
# Field Sizes	**2**								
# Depths	**18**								
Side of Square (cm)		**4.0**	**30.0**						
R_{100} (cm)		1.2	1.2						
Depth (cm)		**Percent Depth Dose**							
0.0		67.6	67.6						
0.2		73.6	73.6						
0.4		80.4	80.4						
0.6		86.0	86.0						
0.8		91.7	91.7						
1.0		96.8	96.8						
1.2		100.0	100.0						
1.4		98.6	98.6						
1.6		90.4	90.4						
1.8		77.8	77.8						
2.0		60.5	60.5						
2.2		40.8	40.8						
2.4		22.7	22.7						
2.6		9.3	9.3						
2.8		2.4	2.4						
3.0		0.5	0.5						
3.5		0.2	0.2						
4.0		0.2	0.2						


AECL Therac 20: 6 MeV Electrons
Central Axis Depth Dose @ 100 cm SSD
Percent Dose (%)
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
Depth in Water (cm)
Side of Square (cm)
4
30

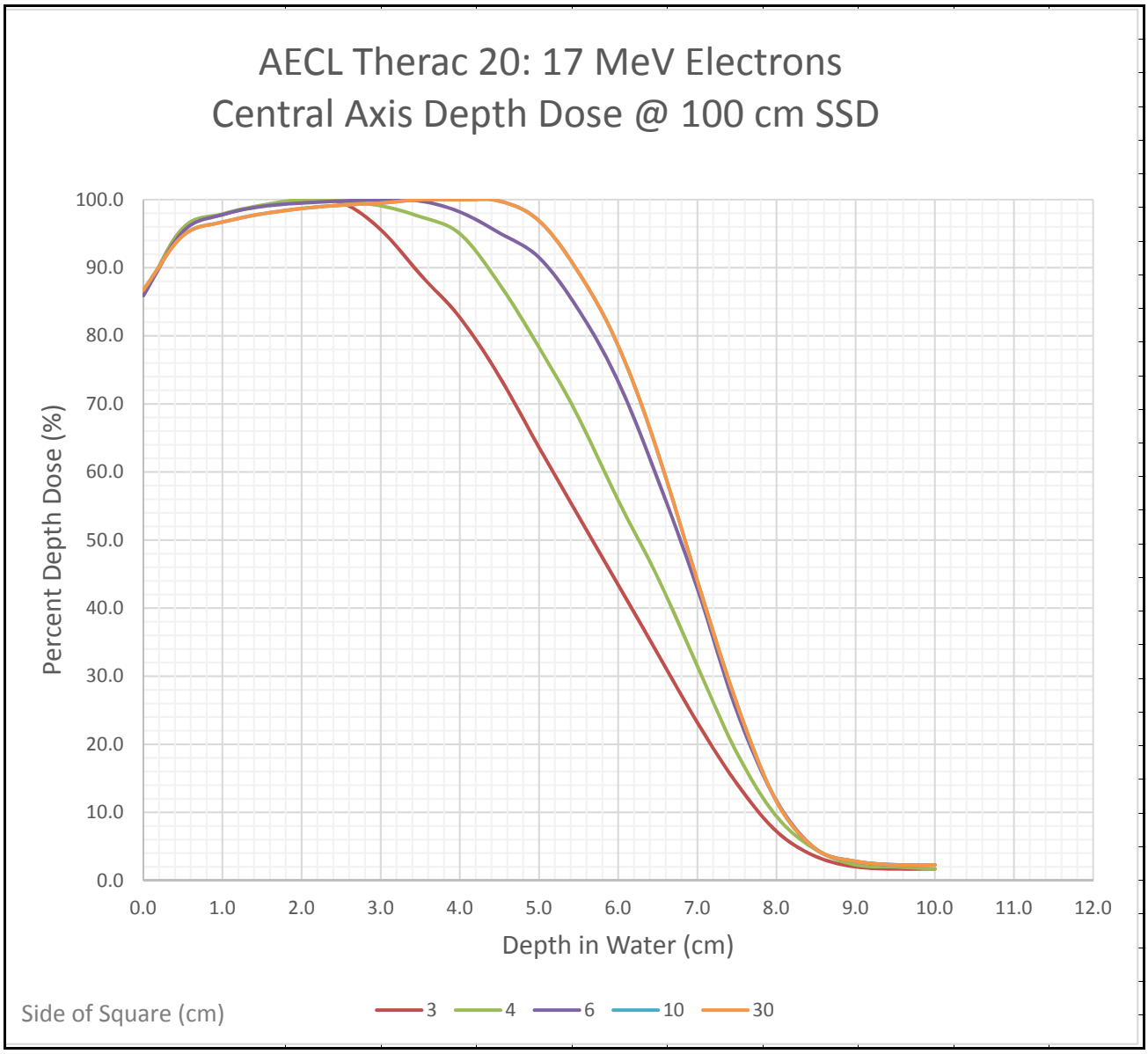
AECL Therac 20: 9 MeV Electrons									
Percent Dose vs Depth									
Nominal Energy (MeV)	**9**								
SSD (cm)	**100**								
$E_{p,o}$ (MeV)	**8.8**								
σ_{θ_x} (radians)	**0.041**								
$L_{o,eff}$ (cm)	**12**								
# Field Sizes	**4**								
# Depths	**26**								
Side of Square (cm)		**3.0**	**4.0**	**6.0**	**30.0**				
R_{100} (cm)		1.2	2.0	2.0	2.0				
Depth (cm)		**Percent Depth Dose**							
0.0		81.6	78.2	73.5	73.5				
0.2		87.3	83.7	78.1	78.1				
0.4		90.6	87.2	82.6	82.6				
0.6		93.0	89.7	84.6	84.6				
0.8		95.6	91.9	86.7	86.7				
1.0		97.8	94.2	89.1	89.1				
1.2		100.0	96.0	91.6	91.6				
1.4		99.6	98.2	93.8	93.8				
1.6		98.4	99.1	95.7	95.7				
1.8		96.1	99.7	98.7	98.7				
2.0		92.8	99.7	100.0	100.0				
2.2		89.5	97.7	99.5	99.5				
2.4		84.0	92.8	97.8	97.8				
2.6		77.7	87.8	94.2	94.2				
2.8		68.8	81.8	86.4	86.4				
3.0		62.2	73.2	73.2	73.2				
3.2		50.9	60.1	64.8	64.8				
3.4		41.3	49.1	49.2	49.2				
3.6		31.8	37.7	38.0	38.0				
3.8		20.3	24.9	25.0	25.0				
4.0		11.8	13.5	15.0	15.0				
4.2		5.3	7.0	6.6	6.6				
4.4		2.5	2.8	3.2	3.2				
4.6		1.3	1.3	1.3	1.3				
5.0		0.6	0.6	0.6	0..6				
6.0		0.5	0.5	0.5	0.5				


AECL Therac 20: 9 MeV Electrons
Central Axis Depth Dose @ 100 cm SSD
Percent Dose (%)
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
Depth in Water (cm)
Side of Square (cm)
3
4
6
30

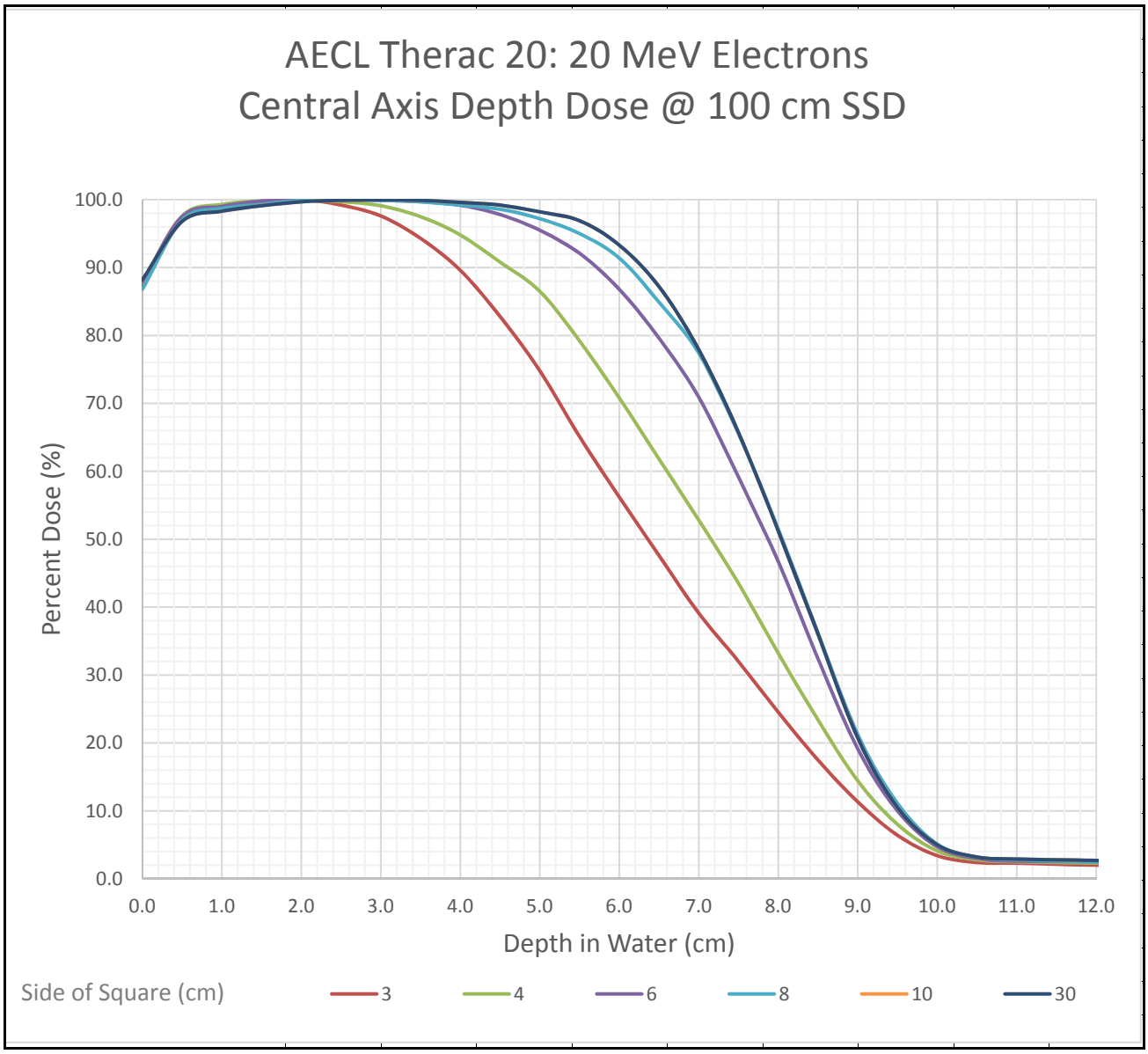
AECL Therac 20: 13 MeV Electrons									
Percent Dose vs Depth									
Nominal Energy (MeV)	**13**								
SSD (cm)	**100**								
$E_{p,o}$ (MeV)	**12.1**								
σ_{θ_x} (radians)	**0.034**								
$L_{o,eff}$ (cm)	**12**								
# Field Sizes	**4**								
# Depths	**30**								
Side of Square (cm)		**3.0**	**4.0**	**6.0**	**30.0**				
R_{100} (cm)		1.2	2.2	2.8	2.8				
Depth (cm)		**Percent Depth Dose**							
0.0		85.6	83.8	81.5	81.5				
0.2		92.4	90.0	87.5	87.5				
0.4		95.0	92.8	89.7	89.7				
0.6		96.9	94.8	90.9	90.9				
0.8		98.2	96.0	92.1	92.1				
1.0		99.3	96.8	92.8	92.8				
1.2		100.0	97.6	93.6	93.6				
1.4		100.0	98.1	94.5	94.5				
1.6		99.8	98.8	95.3	95.3				
1.8		99.2	99.3	96.2	96.2				
2.0		98.6	99.8	97.3	97.3				
2.2		97.6	100.0	98.3	98.3				
2.4		96.2	99.8	99.5	99.5				
2.6		93.4	99.1	99.8	99.8				
2.8		89.1	98.2	100.0	100.0				
3.0		85.5	96.4	99.7	99.7				
3.4		77.4	91.4	97.8	97.8				
3.6		74.1	88.2	96.4	96.4				
3.8		69.0	84.4	94.0	94.0				
4.0		63.5	79.8	89.1	89.1				
4.4		52.2	65.8	75.4	75.4				
4.6		46.5	60.4	67.2	67.2				
4.8		40.2	52.9	59.5	59.5				
5.0		35.1	44.0	49.3	49.3				
5.4		21.9	27.9	29.4	29.4				
5.6		15.8	20.6	20.7	20.7				
5.8		10.2	13.1	13.5	13.5				
6.0		6.9	7.8	7.6	7.6				
6.5		2.0	2.4	2.4	2.4				
7.0		1.5	1.5	1.5	1.5				


AECL Therac 20: 13 MeV Electrons
Central Axis Depth Dose @ 100 cm SSD
Percent Dose (%)
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
Depth in Water (cm)
Side of Square (cm)
3
4
6
30

AECL Therac 20: 17 MeV Electrons									
Percent Dose vs Depth									
Nominal Energy (MeV)	**17**								
SSD (cm)	**100**								
$E_{p,o}$ (MeV)	**16.3**								
σ_{θ_x} (radians)	**0.025**								
$L_{o,eff}$ (cm)	**12**								
# Field Sizes	**5**								
# Depths	**21**								
Side of Square (cm)		**3.0**	**4.0**	**6.0**	**10.0**	**30.0**			
R_{100} (cm)		2.0	2.0	3.0	3.5	3.5			
Depth (cm)		**Percent Depth Dose**							
0.0		85.9	85.9	85.9	86.7	86.7			
0.5		95.8	95.8	95.3	94.7	94.7			
1.0		97.8	97.9	97.8	96.7	96.7			
1.5		99.1	99.2	99.0	97.9	97.9			
2.0		99.8	100.0	99.5	98.7	98.7			
2.5		99.6	99.8	99.8	99.2	99.2			
3.0		95.6	99.1	100.0	99.5	99.5			
3.5		89.0	97.5	99.8	100.0	100.0			
4.0		82.7	95.0	98.2	100.0	100.0			
4.5		74.0	87.6	95.1	99.8	99.8			
5.0		63.6	78.3	91.5	96.9	96.9			
5.5		53.5	68.0	83.8	89.3	89.3			
6.0		43.4	55.8	73.3	78.6	78.6			
6.5		33.3	44.5	58.9	62.9	62.9			
7.0		23.2	31.5	42.9	44.0	44.0			
7.5		14.2	18.7	24.8	25.9	25.9			
8.0		7.2	9.4	11.7	11.6	11.6			
8.5		3.5	4.5	4.6	4.6	4.6			
9.0		2.0	2.3	2.8	2.8	2.8			
9.5		1.7	2.0	2.3	2.3	2.3			
10.0		1.7	1.7	2.3	2.3	2.3			


AECL Therac 20: 17 MeV Electrons
Central Axis Depth Dose @ 100 cm SSD
Percent Depth Dose (%)
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
Depth in Water (cm)
Side of Square (cm)
3
4
6
10
30

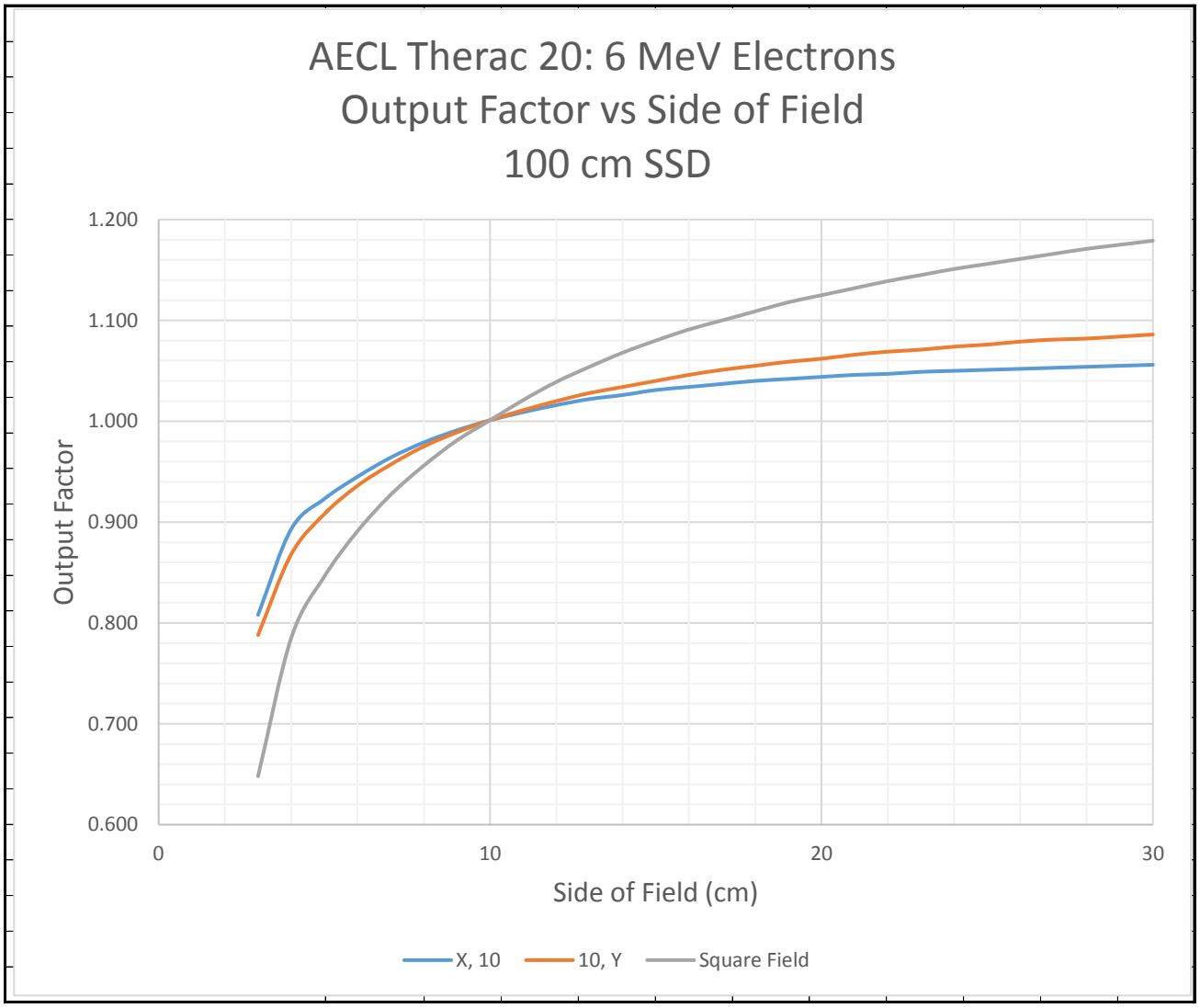
AECL Therac 20: 20 MeV Electrons									
Percent Dose vs Depth									
Nominal Energy (MeV)	**20**								
SSD (cm)	**100**								
$E_{p,o}$ (MeV)	**19.1**								
σ_{θ_x} (radians)	**0.022**								
$L_{o,eff}$ (cm)	**12**								
# Field Sizes	**6**								
# Depths	**25**								
Side of Square (cm)		**3.0**	**4.0**	**6.0**	**8.0**	**10.0**	**30.0**		
R_{100} (cm)		2.0	2.0	2.0	2.5	3.0	3.0		
Depth (cm)		**Percent Depth Dose**							
0.0		87.3	87.8	87.9	86.8	88.2	88.2		
0.5		97.2	97.6	97.5	97.0	96.8	96.8		
1.0		99.1	99.3	99.0	98.7	98.3	98.3		
1.5		99.6	99.8	99.8	99.3	99.1	99.1		
2.0		100.0	99.9	100.0	99.9	99.7	99.7		
2.5		99.2	99.7	100.0	100.0	99.9	99.9		
3.0		97.6	99.1	99.9	99.9	100.0	100.0		
3.5		94.3	97.5	99.7	99.7	99.9	99.9		
4.0		89.6	94.8	99.2	99.2	99.6	99.6		
4.5		82.8	90.8	97.8	98.6	99.2	99.2		
5.0		74.8	86.5	95.5	97.2	98.2	98.2		
5.5		65.1	79.2	92.1	95.0	96.9	96.9		
6.0		56.2	70.8	86.8	91.4	93.3	93.3		
6.5		47.6	61.8	79.6	84.9	87.2	87.2		
7.0		39.1	52.8	70.9	77.4	77.9	77.9		
7.5		32.0	43.5	59.1	65.5	65.7	65.7		
8.0		24.5	33.2	46.7	51.5	51.2	51.2		
8.5		17.5	23.4	32.4	36.2	36.0	36.0		
9.0		11.3	14.4	19.1	21.2	20.7	20.7		
9.5		6.4	8.0	10.0	11.1	10.5	10.5		
10.0		3.4	4.1	4.7	5.1	5.0	5.0		
10.5		2.4	2.8	3.0	3.2	3.2	3.2		
11.0		2.3	2.5	2.6	2.8	2.9	2.9		
12.0		2.0	2.3	2.5	2.5	2.7	2.7		
13.0		1.9	2.1	2.2	2.5	2.5	2.5		


AECL Therac 20: 20 MeV Electrons
Central Axis Depth Dose @ 100 cm SSD
Percent Dose (%)
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
Depth in Water (cm)
Side of Square (cm)
3
4
6
8
10
30

AECL Therac 20: 6 MeV Electrons											
Output Factor vs Field Size											
Nominal Energy (MeV)	**6**										
SSD (cm)	**100**										
$E_{p,o}$ (MeV)	**5.7**										
σ_{θ_x} (radians)	**0.063**										
$L_{o,eff}$ (cm)	**12**										
# Applicator Sizes	**28**										
# Field Sizes	**28**										
X (CM)		3	4	5	6	7	8	9	10		
Y (CM)											
3		0.648	0.714	0.737	0.753	0.766	0.777	0.784	0.788		
4		0.712	0.785	0.810	0.828	0.843	0.854	0.863	0.868		
5		0.743	0.820	0.846	0.865	0.881	0.893	0.903	0.908		
6		0.765	0.844	0.871	0.891	0.907	0.920	0.931	0.936		
7		0.781	0.862	0.890	0.910	0.927	0.940	0.951	0.957		
8		0.793	0.876	0.904	0.925	0.943	0.956	0.967	0.975		
9		0.803	0.887	0.916	0.937	0.955	0.969	0.981	0.989		
10		0.808	0.893	0.923	0.945	0.964	0.979	0.991	1.001		
11		0.816	0.902	0.933	0.955	0.974	0.989	1.001	1.011		
12		0.824	0.910	0.941	0.963	0.982	0.997	1.010	1.020		
13		0.830	0.917	0.948	0.971	0.989	1.005	1.017	1.028		
14		0.835	0.923	0.954	0.977	0.996	1.011	1.024	1.034		
15		0.840	0.928	0.960	0.983	1.002	1.017	1.030	1.040		
16		0.844	0.933	0.965	0.988	1.007	1.023	1.035	1.046		
17		0.848	0.937	0.969	0.992	1.011	1.021	1.040	1.051		
18		0.852	0.941	0.973	0.996	1.016	1.031	1.044	1.055		
19		0.855	0.945	0.977	1.000	1.019	1.035	1.048	1.059		
20		0.858	0.948	0.980	1.003	1.023	1.039	1.052	1.062		
21		0.860	0.951	0.983	1.007	1.026	1.042	1.055	1.066		
22		0.863	0.954	0.986	1.009	1.029	1.045	1.058	1.069		
23		0.865	0.956	0.988	1.012	1.032	1.048	1.061	1.071		
24		0.867	0.958	0.991	1.014	1.034	1.050	1.063	1.074		
25		0.869	0.960	0.993	1.017	1.036	1.052	1.066	1.076		
26		0.871	0.962	0.995	1.019	1.038	1.055	1.068	1.079		
27		0.872	0.964	0.997	1.021	1.040	1.057	1.070	1.081		
28		0.874	0.966	0.998	1.022	1.042	1.058	1.072	1.082		
29		0.875	0.968	1.000	1.024	1.044	1.060	1.073	1.084		
30		0.877	0.969	1.002	1.026	1.046	1.062	1.075	1.086		

X (CM)		11	12	13	14	15	16	17	18	19	20
Y (CM)											
3		0.794	0.800	0.804	0.808	0.811	0.814	0.816	0.818	0.820	0.822
4		0.875	0.881	0.886	0.890	0.894	0.897	0.899	0.901	0.903	0.905
5		0.916	0.922	0.927	0.931	0.935	0.938	0.941	0.943	0.946	0.947
6		0.944	0.958	0.955	0.960	0.964	0.967	0.970	0.972	0.975	0.976
7		0.965	0.972	0.977	0.982	0.986	0.989	0.992	0.995	0.997	0.999
8		0.983	0.989	0.995	1.000	1.004	1.001	1.010	1.012	1.015	1.017
9		0.997	1.084	1.009	1.014	1.018	1.022	1.025	1.027	1.000	1.032
10		1.009	1.016	1.022	1.026	1.031	1.034	1.037	1.040	1.042	1.044
11		1.021	1.029	1.035	1.048	1.050	1.049	1.052	1.055	1.068	1.060
12		1.031	1.039	1.045	1.051	1.056	1.060	1.063	1.066	1.069	1.072
13		1.039	1.047	1.054	1.060	1.065	1.069	1.073	1.076	1.079	1.081
14		1.046	1.055	1.062	1.068	1.073	1.077	1.081	1.084	1.087	1.090
15		1.053	1.061	1.069	1.075	1.080	1.084	1.088	1.092	1.095	1.097
16		1.059	1.067	1.075	1.081	1.086	1.091	1.095	1.098	1.101	1.104
17		1.064	1.073	1.080	1.086	1.092	1.096	1.100	1.104	1.107	1.110
18		1.068	1.078	1.085	1.091	1.097	1.102	1.106	1.109	1.113	1.116
19		1.073	1.082	1.090	1.096	1.102	1.106	1.111	1.114	1.118	1.121
20		1.076	1.086	1.094	1.100	1.106	1.111	1.115	1.119	1.121	1.125
21		1.080	1.090	1.098	1.104	1.110	1.115	1.119	1.123	1.126	1.129
22		1.083	1.093	1.101	1.108	1.114	1.119	1.123	1.127	1.133	1.136
23		1.086	1.096	1.104	1.111	1.117	1.122	1.126	1.130	1.134	1.137
24		1.089	1.099	1.107	1.114	1.120	1.125	1.130	1.134	1.137	1.140
25		1.092	1.102	1.110	1.117	1.123	1.128	1.133	1.137	1.140	1.144
26		1.094	1.104	1.113	1.120	1.126	1.131	1.136	1.140	1.143	1.147
27		1.096	1.107	1.115	1.115	1.128	1.134	1.138	1.142	1.146	1.149
28		1.099	1.109	1.117	1.125	1.131	1.136	1.141	1.145	1.149	1.152
29		1.101	1.111	1.120	1.127	1.133	1.138	1.143	1.147	1.151	1.154
30		1.102	1.113	1.122	1.129	1.135	1.141	1.145	1.150	1.153	1.157

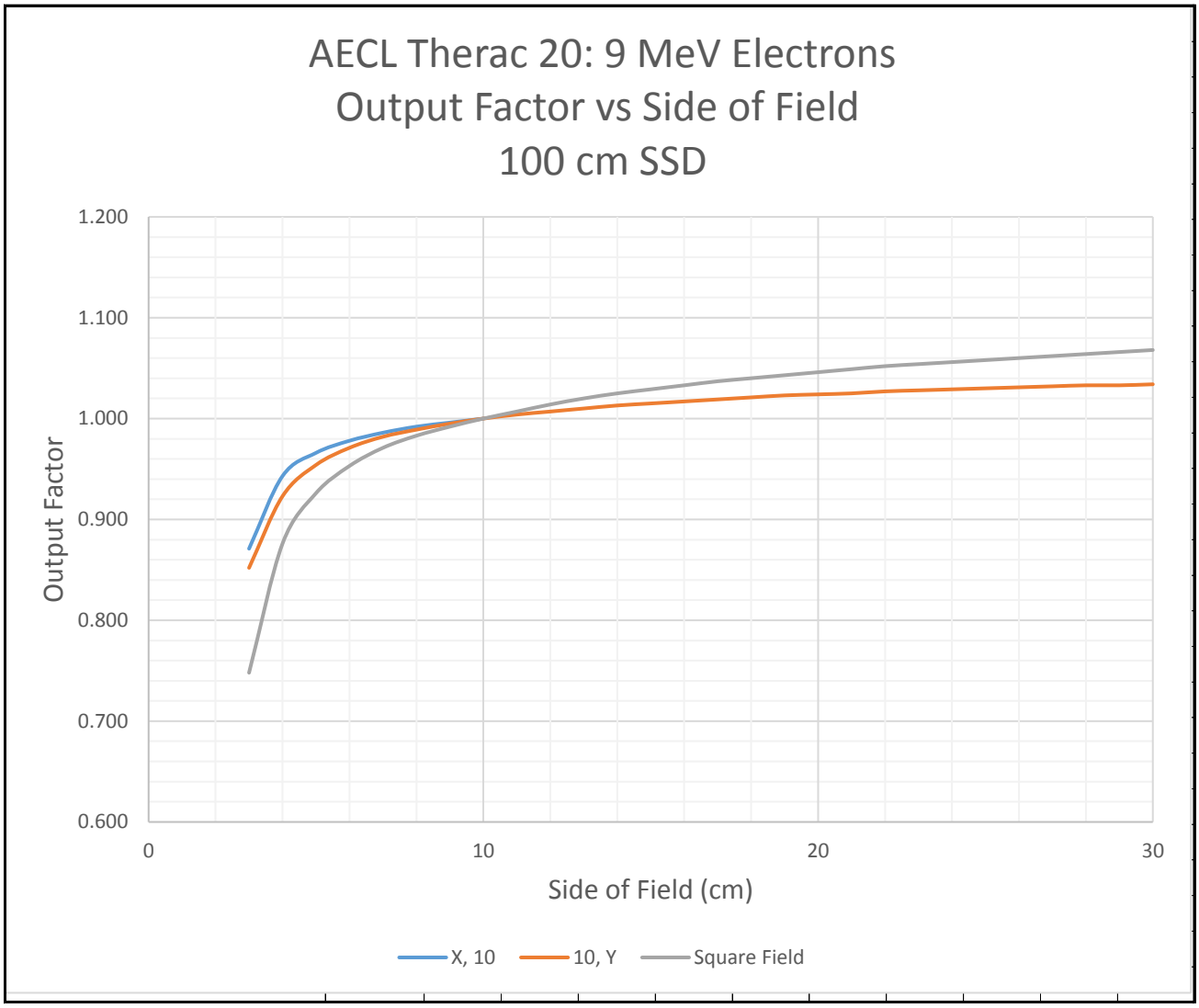
X (CM)		21	22	23	24	25	26	27	28	29	30
Y (CM)											
3		0.823	0.824	0.825	0.826	0.827	0.828	0.829	0.830	0.830	0.831
4		0.907	0.908	0.909	0.910	0.911	0.912	0.913	0.914	0.915	0.915
5		0.949	0.949	0.952	0.953	0.954	0.955	0.956	0.956	0.957	0.958
6		0.978	0.978	0.981	0.982	0.983	0.984	0.985	0.986	0.986	0.987
7		1.000	1.002	1.003	1.014	1.006	1.007	1.007	1.008	1.009	1.010
8		1.018	1.020	1.021	1.023	1.024	1.025	1.026	1.026	1.027	1.028
9		1.033	1.035	1.036	1.038	1.039	1.040	1.041	1.041	1.042	1.043
10		1.046	1.047	1.049	1.050	1.051	1.052	1.053	1.054	1.055	1.056
11		1.064	1.064	1.066	1.067	1.069	1.070	1.071	1.072	1.073	1.074
12		1.074	1.076	1.077	1.079	1.081	1.082	1.083	1.084	1.085	1.086
13		1.084	1.086	1.087	1.089	1.091	1.092	1.093	1.095	1.096	1.097
14		1.092	1.094	1.096	1.098	1.100	1.101	1.102	1.104	1.105	1.106
15		1.100	1.102	1.104	1.106	1.107	1.109	1.110	1.112	1.113	1.114
16		1.107	1.109	1.111	1.113	1.114	1.116	1.118	1.119	1.120	1.121
17		1.113	1.115	1.117	1.119	1.121	1.122	1.124	1.125	1.127	1.128
18		1.118	1.121	1.123	1.125	1.127	1.128	1.130	1.131	1.133	1.134
19		1.123	1.126	1.128	1.130	1.132	1.134	1.135	1.137	1.138	1.139
20		1.128	1.130	1.133	1.135	1.137	1.138	1.140	1.142	1.143	1.144
21		1.132	1.135	1.137	1.139	1.141	1.143	1.145	1.146	1.148	1.149
22		1.139	1.139	1.141	1.143	1.145	1.147	1.149	1.151	1.152	1.153
23		1.140	1.142	1.145	1.147	1.149	1.151	1.153	1.154	1.156	1.157
24		1.143	1.146	1.148	1.151	1.153	1.155	1.156	1.158	1.160	1.161
25		1.146	1.149	1.152	1.154	1.156	1.158	1.160	1.161	1.163	1.164
26		1.150	1.152	1.155	1.157	1.159	1.161	1.163	1.165	1.166	1.168
27		1.152	1.155	1.158	1.160	1.162	1.164	1.166	1.168	1.169	1.171
28		1.155	1.158	1.160	1.163	1.165	1.167	1.169	1.171	1.172	1.174
29		1.158	1.160	1.163	1.165	1.167	1.170	1.171	1.173	1.175	1.177
30		1.160	1.163	1.165	1.168	1.170	1.172	1.174	1.176	1.178	1.179


AECL Therac 20: 6 MeV Electrons
Output Factor vs Side of Field
100 cm SSD
Output Factor
1.200
1.100
1.000
0.900
0.800
0.700
0.600
0
10
20
30
Side of Field (cm)
X, 10
10, Y
Square Field

AECL Therac 20: 9 MeV electrons											
Output Factor vs Field Size											
Nominal Energy (MeV)	**9**										
SSD (cm)	**100**										
$E_{p,o}$ (MeV)	**8.8**										
σ_{θ_x} (radians)	**0.041**										
$L_{o,eff}$ (cm)	**12**										
# Applicator Sizes	**28**										
# Field Sizes	**28**										
X (CM)		3	4	5	6	7	8	9	10		
Y (CM)											
3		0.748	0.809	0.828	0.838	0.844	0.848	0.851	0.852		
4		0.810	0.876	0.897	0.907	0.914	0.919	0.922	0.923		
5		0.837	0.905	0.926	0.937	0.944	0.949	0.953	0.954		
6		0.851	0.921	0.942	0.953	0.960	0.966	0.969	0.971		
7		0.859	0.931	0.952	0.963	0.971	0.976	0.980	0.982		
8		0.865	0.937	0.958	0.970	0.978	0.983	0.987	0.989		
9		0.869	0.941	0.963	0.975	0.983	0.988	0.992	0.995		
10		0.871	0.943	0.966	0.978	0.986	0.992	0.996	1.000		
11		0.875	0.947	0.971	0.982	0.990	0.996	1.000	1.004		
12		0.878	0.951	0.973	0.985	0.993	0.999	1.004	1.007		
13		0.880	0.953	0.976	0.988	0.996	1.002	1.007	1.010		
14		0.882	0.956	0.978	0.990	0.999	1.005	1.009	1.013		
15		0.885	0.958	0.981	0.993	1.001	1.007	1.012	1.015		
16		0.886	0.961	0.983	0.995	1.003	1.009	1.014	1.017		
17		0.888	0.962	0.984	0.997	1.005	1.011	1.016	1.019		
18		0.890	0.963	0.986	0.998	1.007	1.013	1.017	1.021		
19		0.891	0.965	0.988	1.000	1.008	1.014	1.019	1.023		
20		0.892	0.966	0.989	1.001	1.010	1.016	1.020	1.024		
21		0.893	0.968	0.990	1.003	1.011	1.017	1.022	1.025		
22		0.894	0.969	0.992	1.004	1.012	1.018	1.023	1.027		
23		0.895	0.971	0.993	1.005	1.013	1.020	1.024	1.028		
24		0.896	0.971	0.994	1.006	1.014	1.021	1.025	1.029		
25		0.897	0.972	0.995	1.007	1.015	1.022	1.026	1.030		
26		0.898	0.973	0.996	1.008	1.016	1.023	1.027	1.031		
27		0.899	0.974	0.996	1.009	1.017	1.023	1.028	1.032		
28		0.900	0.974	0.997	1.010	1.018	1.024	1.029	1.033		
29		0.900	0.975	0.998	1.010	1.019	1.025	1.030	1.033		
30		0.901	0.976	0.999	1.011	1.020	1.026	1.030	1.034		

X (CM)		11	12	13	14	15	16	17	18	19	20
Y (CM)											
3		0.854	0.850	0.857	0.859	0.860	0.860	0.861	0.862	0.862	0.863
4		0.926	0.928	0.929	0.931	0.932	0.933	0.933	0.934	0.935	0.935
5		0.957	0.959	0.961	0.962	0.963	0.964	0.965	0.965	0.966	0.967
6		0.974	0.976	0.977	0.979	0.980	0.981	0.982	0.982	0.983	0.983
7		0.984	0.986	0.988	0.990	0.991	0.992	0.992	0.993	0.994	0.994
8		0.992	0.994	0.996	0.997	0.998	0.999	1.000	1.001	1.001	1.002
9		0.998	1.000	1.002	1.003	1.004	1.005	1.006	1.007	1.007	1.008
10		1.003	1.005	1.007	1.008	1.009	1.010	1.011	1.012	1.012	1.013
11		1.007	1.010	1.012	1.014	1.015	1.016	1.017	1.018	1.019	1.020
12		1.011	1.014	1.016	1.018	1.019	1.021	1.022	1.023	1.024	1.024
13		1.015	1.017	1.020	1.022	1.023	1.024	1.026	1.027	1.027	1.028
14		1.017	1.020	1.023	1.025	1.026	1.028	1.029	1.030	1.031	1.032
15		1.020	1.023	1.026	1.028	1.029	1.031	1.032	1.033	1.034	1.035
16		1.022	1.025	1.028	1.030	1.032	1.033	1.035	1.036	1.037	1.037
17		1.024	1.028	1.030	1.032	1.034	1.036	1.037	1.038	1.039	1.041
18		1.026	1.030	1.032	1.034	1.036	1.038	1.039	1.040	1.041	1.042
19		1.028	1.033	1.034	1.036	1.038	1.041	1.041	1.042	1.043	1.044
20		1.031	1.035	1.036	1.038	1.040	1.042	1.043	1.044	1.045	1.046
21		1.031	1.036	1.037	1.040	1.042	1.043	1.045	1.046	1.047	1.048
22		1.033	1.037	1.039	1.041	1.043	1.045	1.046	1.048	1.049	1.050
23		1.034	1.039	1.041	1.043	1.045	1.046	1.048	1.049	1.050	1.051
24		1.035	1.041	1.042	4.044	1.046	1.048	1.049	1.051	1.052	1.053
25		1.036	1.041	1.043	1.045	1.047	1.049	1.051	1.052	1.053	1.054
26		1.037	1.041	1.044	1.046	1.048	1.050	1.052	1.053	1.054	1.056
27		1.038	1.042	1.045	1.048	1.050	1.051	1.053	1.054	1.056	1.057
28		1.039	1.043	1.046	1.049	1.051	1.053	1.054	1.056	1.057	1.058
29		1.040	1.044	1.047	1.050	1.052	1.054	1.055	1.057	1.058	1.059
30		1.041	1.045	1.048	1.051	1.053	1.055	1.056	1.058	1.059	1.060

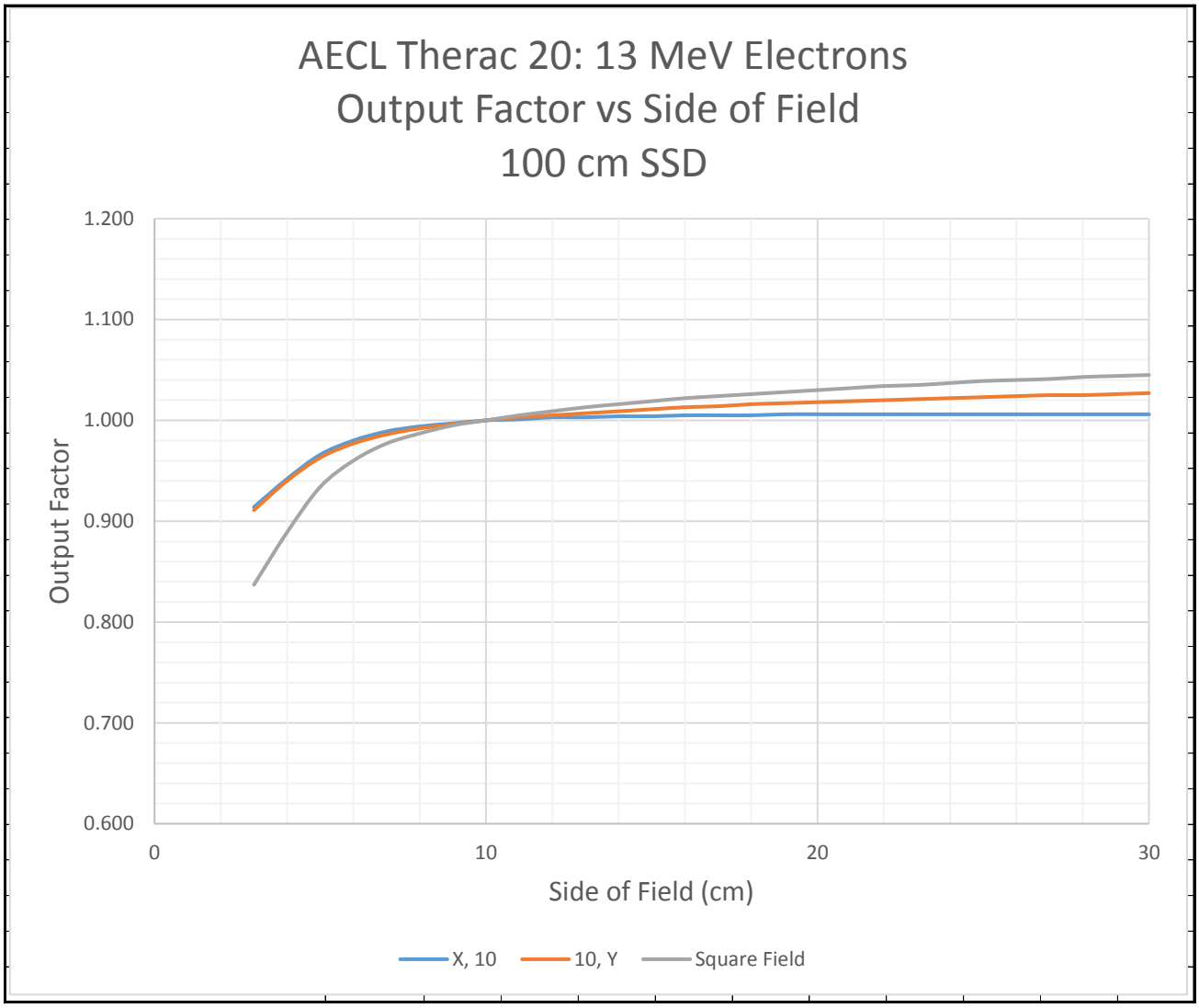
X (CM)		21	22	23	24	25	26	27	28	29	30
Y (CM)											
3		0.863	0.863	0.864	0.864	0.864	0.864	0.864	0.865	0.865	0.865
4		0.935	0.936	0.936	0.936	0.937	0.937	0.937	0.937	0.937	0.937
5		0.967	0.967	0.968	0.968	0.968	0.968	0.968	0.969	0.969	0.969
6		0.984	0.984	0.985	0.985	0.985	0.985	0.985	0.986	0.986	0.986
7		0.995	0.995	0.995	0.996	0.996	0.996	0.996	0.996	0.997	0.997
8		1.002	1.003	1.003	1.003	1.004	1.004	1.004	1.004	1.004	1.004
9		1.008	1.009	1.009	1.009	1.010	1.010	1.010	1.010	1.010	1.010
10		1.013	1.014	1.014	1.014	1.014	1.015	1.015	1.015	1.015	1.015
11		1.020	1.021	1.021	1.022	1.022	1.022	1.023	1.023	1.023	1.023
12		1.025	1.025	1.026	1.026	1.027	1.027	1.028	1.028	1.028	1.028
13		1.029	1.029	1.030	1.031	1.031	1.031	1.032	1.032	1.032	1.033
14		1.032	1.033	1.034	1.034	1.035	1.035	1.035	1.036	1.036	1.036
15		1.035	1.036	1.037	1.037	1.038	1.038	1.039	1.039	1.039	1.040
16		1.038	1.039	1.040	1.040	1.041	1.041	1.042	1.042	1.042	1.043
17		1.041	1.041	1.042	1.043	1.043	1.044	1.044	1.045	1.045	1.046
18		1.043	1.044	1.045	1.045	1.046	1.046	1.047	1.047	1.048	1.048
19		1.045	1.046	1.047	1.047	1.048	1.048	1.049	1.050	1.050	1.050
20		1.047	1.048	1.049	1.049	1.050	1.051	1.051	1.052	1.052	1.053
21		1.049	1.050	1.051	1.051	1.052	1.052	1.053	1.054	1.054	1.055
22		1.051	1.052	1.052	1.053	1.054	1.054	1.055	1.055	1.056	1.056
23		1.052	1.053	1.054	1.055	1.055	1.056	1.057	1.057	1.058	1.058
24		1.054	1.055	1.055	1.056	1.057	1.058	1.058	1.059	1.059	1.060
25		1.055	1.056	1.057	1.058	1.058	1.059	1.060	1.060	1.061	1.061
26		1.057	1.057	1.058	1.059	1.060	1.060	1.061	1.062	1.062	1.063
27		1.058	1.059	1.060	1.060	1.061	1.062	1.062	1.063	1.064	1.064
28		1.059	1.060	1.061	1.062	1.062	1.063	1.064	1.064	1.065	1.065
29		1.060	1.061	1.062	1.063	1.064	1.064	1.065	1.066	1.066	1.067
30		1.061	1.062	1.063	1.064	1.065	1.065	1.066	1.067	1.067	1.068


AECL Therac 20: 9 MeV Electrons
Output Factor vs Side of Field
100 cm SSD
1.200
1.100
1.000
0.900
0.800
0.700
0.600
Output Factor
0
10
20
30
Side of Field (cm)
X, 10
10, Y
Square Field

AECL Therac 20: 13 MeV electrons											
Output Factor vs Field Size											
Nominal Energy (MeV)	**13**										
SSD (cm)	**100**										
$E_{p,o}$ (MeV)	**12.1**										
σ_{θ_x} (radians)	**0.034**										
$L_{o,eff}$ (cm)	**12**										
# Applicator Sizes	**28**										
# Field Sizes	**28**										
X (CM)		3	4	5	6	7	8	9	10		
Y (CM)											
3		0.837	0.862	0.884	0.896	0.904	0.908	0.911	0.911		
4		0.863	0.889	0.911	0.924	0.932	0.936	0.939	0.940		
5		0.884	0.911	0.934	0.947	0.955	0.960	0.962	0.963		
6		0.896	0.923	0.947	0.960	0.968	0.973	0.976	0.977		
7		0.904	0.931	0.955	0.969	0.977	0.982	0.985	0.986		
8		0.909	0.936	0.960	0.974	0.982	0.987	0.990	0.992		
9		0.912	0.940	0.964	0.978	0.986	0.991	0.995	0.996		
10		0.914	0.942	0.966	0.980	0.989	0.994	0.997	1.000		
11		0.916	0.945	0.969	0.983	0.992	0.997	1.000	1.003		
12		0.919	0.947	0.971	0.986	0.994	1.000	1.003	1.005		
13		0.921	0.949	0.973	0.988	0.996	1.002	1.005	1.007		
14		0.923	0.951	0.975	0.990	0.998	1.004	1.007	1.009		
15		0.924	0.953	0.977	0.991	1.000	1.005	1.009	1.011		
16		0.926	0.954	0.979	0.993	1.002	1.007	1.011	1.013		
17		0.927	0.956	0.980	0.995	1.003	1.009	1.012	1.014		
18		0.928	0.957	0.981	0.996	1.005	1.010	1.013	1.016		
19		0.930	0.958	0.983	0.997	1.006	1.011	1.015	1.017		
20		0.931	0.959	0.984	0.998	1.007	1.012	1.016	1.018		
21		0.932	0.960	0.985	0.999	1.008	1.013	1.017	1.019		
22		0.933	0.961	0.986	1.000	1.009	1.015	1.018	1.020		
23		0.933	0.962	0.987	1.001	1.010	1.015	1.019	1.021		
24		0.934	0.963	0.988	1.002	1.011	1.016	1.020	1.022		
25		0.935	0.964	0.988	1.003	1.012	1.017	1.021	1.023		
26		0.936	0.965	0.989	1.004	1.013	1.018	1.021	1.024		
27		0.937	0.965	0.990	1.005	1.013	1.019	1.022	1.025		
28		0.937	0.966	0.991	1.005	1.014	1.019	1.023	1.025		
29		0.938	0.967	0.991	1.006	1.015	1.020	1.024	1.026		
30		0.938	0.967	0.992	1.007	1.015	1.021	1.024	1.027		

X (CM)		11	12	13	14	15	16	17	18	19	20
Y (CM)											
3		0.913	0.914	0.914	0.915	0.915	0.916	0.916	0.916	0.916	0.917
4		0.941	0.942	0.943	0.944	0.944	0.944	0.945	0.945	0.945	0.945
5		0.965	0.966	0.967	0.967	0.968	0.968	0.968	0.969	0.969	0.969
6		0.979	0.980	0.981	0.981	0.982	0.982	0.982	0.983	0.983	0.983
7		0.987	0.988	0.989	0.990	0.990	0.991	0.991	0.991	0.991	0.992
8		0.993	0.994	0.995	0.996	0.996	0.997	0.997	0.997	0.997	0.998
9		0.998	0.999	1.000	1.000	1.001	1.001	1.002	1.002	1.002	1.002
10		1.001	1.003	1.003	1.004	1.004	1.005	1.005	1.005	1.006	1.006
11		1.005	1.006	1.007	1.008	1.009	1.009	1.010	1.010	1.010	1.011
12		1.008	1.009	1.010	1.011	1.012	1.012	1.013	1.013	1.014	1.014
13		1.010	1.012	1.013	1.014	1.015	1.015	1.016	1.016	1.016	1.017
14		1.012	1.014	1.015	1.016	1.017	1.018	1.018	1.019	1.019	1.019
15		1.014	1.016	1.017	1.018	1.019	1.020	1.020	1.021	1.021	1.022
16		1.016	1.018	1.019	1.020	1.021	1.022	1.022	1.023	1.023	1.024
17		1.018	1.019	1.021	1.022	1.023	1.023	1.024	1.025	1.025	1.025
18		1.019	1.021	1.022	1.023	1.024	1.025	1.026	1.026	1.027	1.027
19		1.020	1.022	1.024	1.025	1.026	1.027	1.027	1.028	1.028	1.029
20		1.022	1.024	1.025	1.026	1.027	1.028	1.029	1.029	1.030	1.030
21		1.023	1.025	1.026	1.028	1.029	1.029	1.030	1.031	1.031	1.032
22		1.024	1.026	1.028	1.029	1.030	1.031	1.031	1.032	1.032	1.033
23		1.025	1.027	1.029	1.030	1.031	1.032	1.032	1.033	1.034	1.034
24		1.026	1.028	1.030	1.031	1.032	1.033	1.034	1.034	1.035	1.035
25		1.027	1.029	1.031	1.032	1.033	1.034	1.035	1.035	1.036	1.036
26		1.028	1.030	1.032	1.033	1.034	1.035	1.036	1.036	1.037	1.038
27		1.029	1.031	1.033	1.034	1.035	1.036	1.037	1.037	1.038	1.038
28		1.029	1.032	1.033	1.035	1.036	1.037	1.038	1.038	1.039	1.039
29		1.030	1.032	1.034	1.036	1.037	1.038	1.038	1.039	1.040	1.040
30		1.031	1.033	1.035	1.036	1.037	1.039	1.039	1.040	1.041	1.041

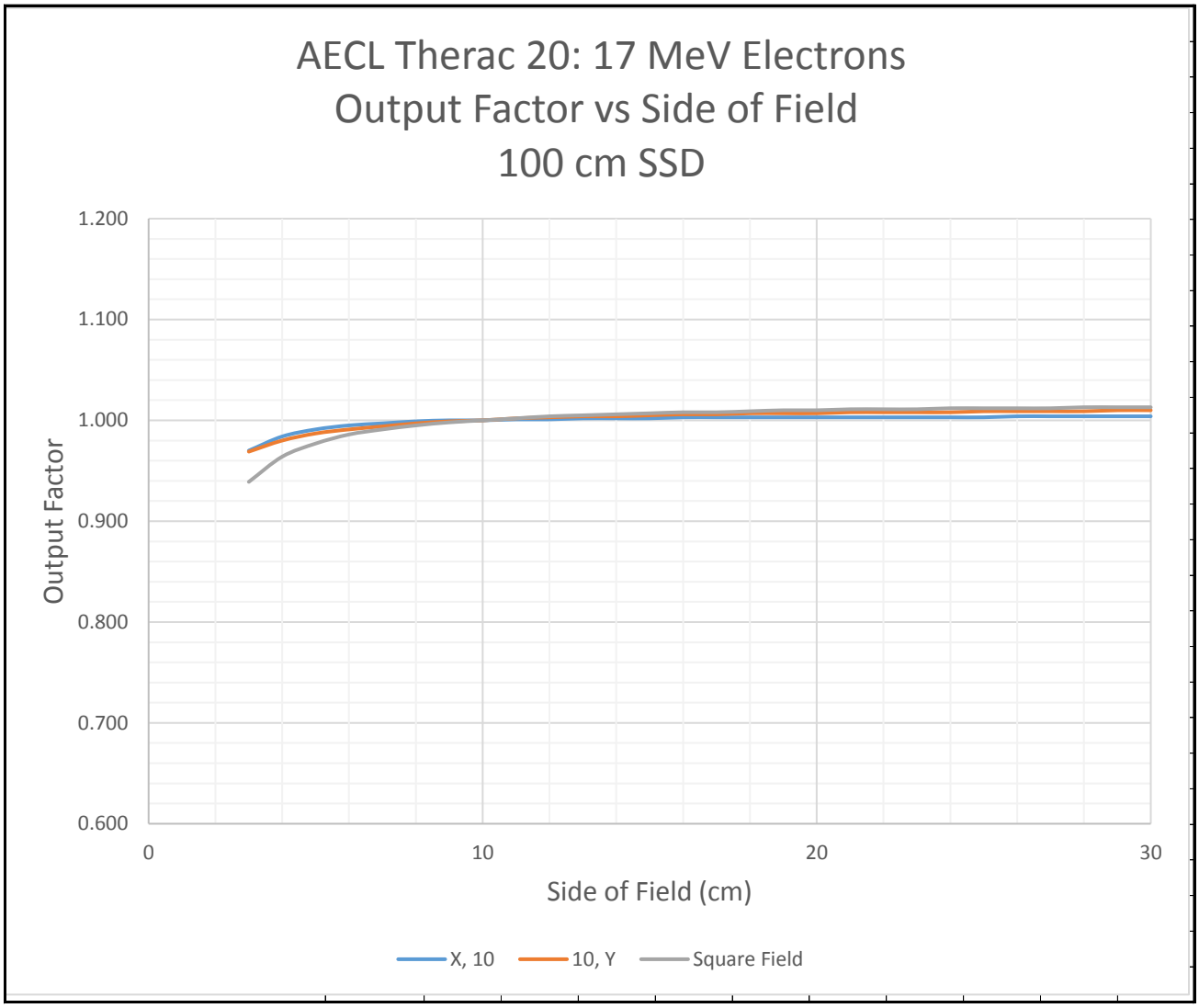
X (CM)		21	22	23	24	25	26	27	28	29	30
Y (CM)											
3		0.917	0.917	0.917	0.917	0.917	0.917	0.917	0.917	0.917	0.917
4		0.945	0.945	0.946	0.946	0.946	0.946	0.946	0.946	0.946	0.946
5		0.969	0.969	0.969	0.969	0.969	0.969	0.969	0.969	0.970	0.970
6		0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.984	0.984
7		0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992
8		0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998
9		1.002	1.002	1.002	1.003	1.003	1.003	1.003	1.003	1.003	1.003
10		1.006	1.006	1.006	1.006	1.006	1.006	1.006	1.006	1.006	1.006
11		1.011	1.011	1.011	1.011	1.011	1.012	1.012	1.012	1.012	1.012
12		1.014	1.014	1.015	1.015	1.015	1.015	1.015	1.015	1.016	1.016
13		1.017	1.017	1.018	1.018	1.018	1.018	1.018	1.018	1.019	1.019
14		1.020	1.020	1.020	1.020	1.021	1.021	1.021	1.021	1.021	1.022
15		1.022	1.022	1.022	1.023	1.023	1.023	1.023	1.024	1.024	1.024
16		1.024	1.024	1.025	1.025	1.025	1.025	1.026	1.026	1.026	1.026
17		1.026	1.026	1.026	1.027	1.027	1.027	1.028	1.028	1.028	1.028
18		1.028	1.028	1.028	1.029	1.029	1.029	1.029	1.030	1.030	1.030
19		1.029	1.030	1.030	1.030	1.031	1.031	1.031	1.031	1.032	1.032
20		1.031	1.031	1.031	1.032	1.032	1.032	1.033	1.033	1.033	1.033
21		1.032	1.032	1.033	1.033	1.034	1.034	1.034	1.034	1.035	1.035
22		1.033	1.034	1.034	1.035	1.035	1.035	1.035	1.035	1.036	1.036
23		1.035	1.035	1.035	1.036	1.036	1.037	1.036	1.036	1.037	1.038
24		1.036	1.036	1.037	1.037	1.037	1.038	1.038	1.038	1.039	1.039
25		1.037	1.037	1.038	1.038	1.039	1.039	1.039	1.040	1.040	1.040
26		1.038	1.038	1.039	1.039	1.040	1.040	1.040	1.041	1.041	1.041
27		1.039	1.039	1.040	1.040	1.041	1.041	1.041	1.042	1.042	1.042
28		1.040	1.040	1.041	1.041	1.042	1.042	1.042	1.043	1.043	1.043
29		1.041	1.041	1.042	1.042	1.043	1.043	1.043	1.044	1.044	1.044
30		1.042	1.042	1.043	1.043	1.044	1.044	1.044	1.045	1.045	1.045


AECL Therac 20: 13 MeV Electrons
Output Factor vs Side of Field
100 cm SSD
1.200
1.100
1.000
0.900
0.800
0.700
0.600
Output Factor
0
10
20
30
Side of Field (cm)
X, 10
10, Y
Square Field

AECL Therac 20: 17 MeV electrons											
Output Factor vs Field Size											
Nominal Energy (MeV)	**17**										
SSD (cm)	**100**										
$E_{p,o}$ (MeV)	**16.3**										
σ_{θ_x} **(radians)**	**0.025**										
$L_{o,eff}$ (cm)	**12**										
# Applicator Sizes	**28**										
# Field Sizes	**28**										
X (CM)		3	4	5	6	7	8	9	10		
Y (CM)											
3		0.939	0.953	0.961	0.963	0.965	0.967	0.968	0.969		
4		0.950	0.964	0.971	0.974	0.976	0.978	0.979	0.980		
5		0.957	0.971	0.977	0.981	0.983	0.985	0.986	0.987		
6		0.961	0.975	0.982	0.986	0.988	0.989	0.990	0.991		
7		0.965	0.978	0.985	0.989	0.991	0.993	0.994	0.994		
8		0.967	0.981	0.988	0.991	0.994	0.995	0.996	0.997		
9		0.969	0.983	0.989	0.993	0.995	0.997	0.998	0.999		
10		0.970	0.984	0.991	0.995	0.997	0.999	1.000	1.000		
11		0.971	0.986	0.992	0.996	0.998	1.000	1.001	1.002		
12		0.973	0.987	0.993	0.997	0.999	1.001	1.002	1.003		
13		0.973	0.987	0.994	0.998	1.000	1.002	1.003	1.004		
14		0.974	0.988	0.995	0.999	1.001	1.002	1.004	1.004		
15		0.975	0.989	0.996	0.999	1.002	1.003	1.004	1.005		
16		0.975	0.989	0.996	1.000	1.002	1.004	1.005	1.006		
17		0.976	0.990	0.997	1.000	1.003	1.004	1.005	1.006		
18		0.976	0.990	0.997	1.001	1.003	1.005	1.006	1.007		
19		0.977	0.991	0.998	1.001	1.004	1.005	1.006	1.007		
20		0.977	0.991	0.998	1.002	1.004	1.005	1.007	1.007		
21		0.977	0.991	0.998	1.002	1.004	1.006	1.007	1.008		
22		0.978	0.992	0.998	1.002	1.005	1.006	1.007	1.008		
23		0.978	0.992	0.999	1.003	1.005	1.006	1.007	1.008		
24		0.978	0.992	0.999	1.003	1.005	1.007	1.008	1.008		
25		0.978	0.993	0.999	1.003	1.005	1.007	1.008	1.009		
26		0.979	0.993	0.999	1.003	1.006	1.007	1.008	1.009		
27		0.979	0.993	1.000	1.003	1.006	1.007	1.008	1.009		
28		0.979	0.993	1.000	1.004	1.006	1.007	1.009	1.009		
29		0.979	0.993	1.000	1.004	1.006	1.008	1.009	1.010		
30		0.979	0.993	1.000	1.004	1.006	1.008	1.009	1.010		

X (CM)		11	12	13	14	15	16	17	18	19	20
Y (CM)											
3		0.969	0.970	0.970	0.970	0.971	0.971	0.971	0.971	0.971	0.971
4		0.980	0.981	0.981	0.981	0.982	0.982	0.982	0.982	0.982	0.982
5		0.987	0.988	0.988	0.988	0.989	0.989	0.989	0.989	0.989	0.989
6		0.992	0.992	0.993	0.993	0.993	0.993	0.993	0.994	0.994	0.994
7		0.995	0.995	0.996	0.996	0.996	0.997	0.997	0.997	0.997	0.997
8		0.997	0.998	0.998	0.999	0.999	0.999	0.999	0.999	1.000	1.000
9		0.999	1.000	1.000	1.001	1.001	1.001	1.001	1.001	1.001	1.002
10		1.001	1.001	1.002	1.002	1.002	1.003	1.003	1.003	1.003	1.003
11		1.002	1.003	1.003	1.003	1.004	1.004	1.004	1.004	1.004	1.004
12		1.003	1.004	1.004	1.004	1.005	1.005	1.005	1.005	1.005	1.005
13		1.004	1.005	1.005	1.005	1.006	1.006	1.006	1.006	1.006	1.006
14		1.005	1.005	1.005	1.006	1.006	1.007	1.007	1.007	1.007	1.007
15		1.006	1.006	1.006	1.007	1.007	1.007	1.007	1.008	1.008	1.008
16		1.006	1.007	1.007	1.007	1.008	1.008	1.008	1.008	1.008	1.008
17		1.007	1.007	1.008	1.008	1.008	1.008	1.008	1.009	1.009	1.009
18		1.007	1.008	1.008	1.008	1.009	1.009	1.009	1.009	1.009	1.009
19		1.008	1.008	1.008	1.009	1.009	1.009	1.009	1.009	1.010	1.010
20		1.008	1.008	1.009	1.009	1.009	1.010	1.010	1.010	1.010	1.010
21		1.008	1.009	1.009	1.009	1.010	1.010	1.010	1.010	1.010	1.010
22		1.009	1.009	1.009	1.010	1.010	1.010	1.010	1.010	1.011	1.011
23		1.009	1.009	1.010	1.010	1.010	1.010	1.011	1.011	1.011	1.011
24		1.009	1.010	1.010	1.010	1.010	1.011	1.011	1.011	1.011	1.011
25		1.009	1.010	1.010	1.010	1.011	1.011	1.011	1.011	1.011	1.011
26		1.010	1.010	1.010	1.011	1.011	1.011	1.011	1.011	1.012	1.012
27		1.010	1.010	1.011	1.011	1.011	1.011	1.012	1.012	1.012	1.012
28		1.010	1.010	1.011	1.011	1.011	1.012	1.012	1.012	1.012	1.012
29		1.010	1.011	1.011	1.011	1.011	1.012	1.012	1.012	1.012	1.012
30		1.010	1.011	1.011	1.011	1.012	1.012	1.012	1.012	1.012	1.012

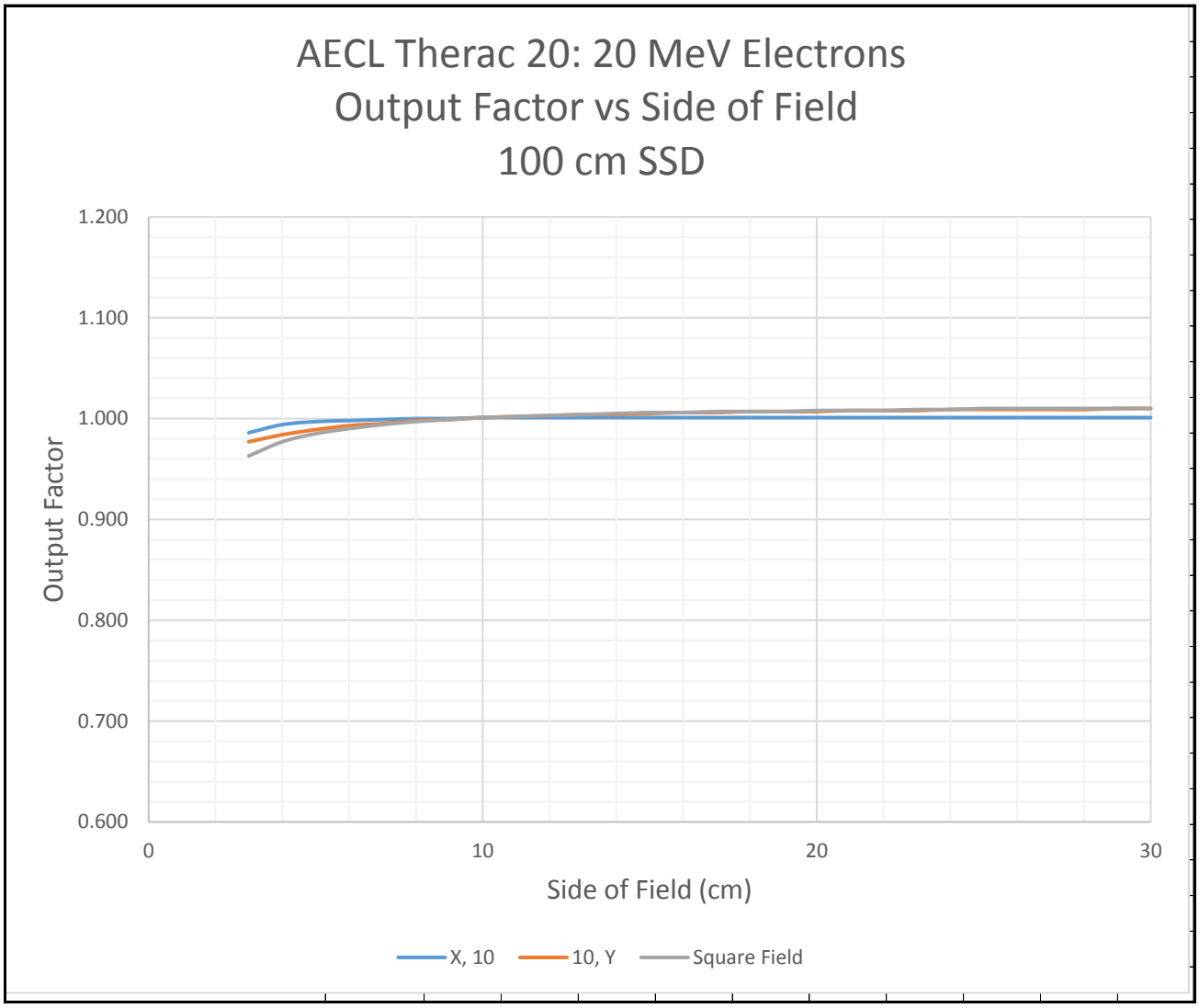
X (CM)		21	22	23	24	25	26	27	28	29	30
Y (CM)											
3		0.971	0.971	0.972	0.972	0.972	0.972	0.972	0.972	0.972	0.972
4		0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983
5		0.989	0.989	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
6		0.994	0.994	0.994	0.994	0.994	0.994	0.994	0.994	0.994	0.994
7		0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997
8		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
9		1.002	1.002	1.002	1.002	1.002	1.002	1.002	1.002	1.002	1.002
10		1.003	1.003	1.003	1.003	1.003	1.004	1.004	1.004	1.004	1.004
11		1.004	1.005	1.005	1.005	1.005	1.005	1.005	1.005	1.005	1.005
12		1.006	1.006	1.006	1.006	1.006	1.006	1.006	1.006	1.006	1.006
13		1.006	1.006	1.007	1.007	1.007	1.007	1.007	1.007	1.007	1.007
14		1.007	1.007	1.007	1.007	1.007	1.008	1.008	1.008	1.008	1.008
15		1.008	1.008	1.008	1.008	1.008	1.008	1.008	1.008	1.008	1.008
16		1.008	1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009
17		1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009
18		1.009	1.009	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
19		1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
20		1.010	1.010	1.010	1.010	1.010	1.011	1.011	1.011	1.011	1.011
21		1.011	1.011	1.011	1.011	1.011	1.011	1.011	1.011	1.011	1.011
22		1.011	1.011	1.011	1.011	1.011	1.011	1.011	1.011	1.011	1.011
23		1.011	1.011	1.011	1.011	1.011	1.011	1.011	1.012	1.012	1.012
24		1.011	1.011	1.012	1.012	1.012	1.012	1.012	1.012	1.012	1.012
25		1.012	1.012	1.012	1.012	1.012	1.012	1.012	1.012	1.012	1.012
26		1.012	1.012	1.012	1.012	1.012	1.012	1.012	1.012	1.012	1.012
27		1.012	1.012	1.012	1.012	1.012	1.012	1.012	1.012	1.012	1.013
28		1.012	1.012	1.012	1.012	1.012	1.013	1.013	1.013	1.013	1.013
29		1.012	1.012	1.013	1.013	1.013	1.013	1.013	1.013	1.013	1.013
30		1.013	1.013	1.013	1.013	1.013	1.013	1.013	1.013	1.013	1.013


AECL Therac 20: 17 MeV Electrons
Output Factor vs Side of Field
100 cm SSD
Output Factor
1.200
1.100
1.000
0.900
0.800
0.700
0.600
0
10
20
30
Side of Field (cm)
X, 10
10, Y
Square Field

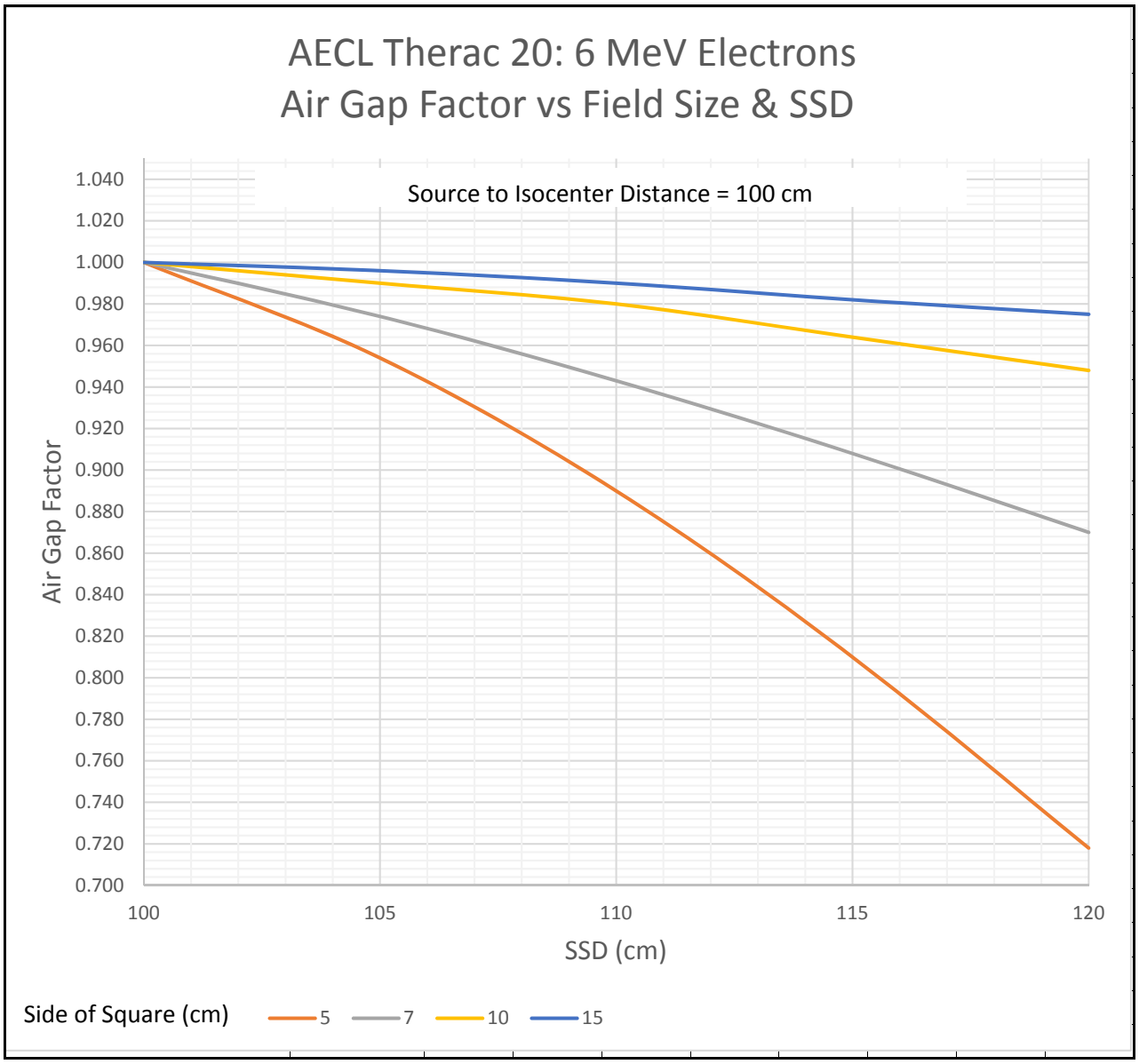
AECL Therac 20: 20 MeV electrons											
Output Factor vs Field Size											
Nominal Energy (MeV)	**20**										
SSD (cm)	**100**										
$E_{p,o}$ (MeV)	**19.1**										
σ_{θ_x} (radians)	**0.022**										
$L_{o,eff}$ (cm)	**12**										
# Applicator Sizes	**28**										
# Field Sizes	**28**										
X (CM)		3	4	5	6	7	8	9	10		
Y (CM)											
3		0.963	0.970	0.973	0.975	0.976	0.977	0.977	0.977		
4		0.970	0.977	0.980	0.982	0.983	0.984	0.984	0.984		
5		0.975	0.982	0.985	0.987	0.988	0.988	0.989	0.989		
6		0.978	0.986	0.989	0.990	0.991	0.992	0.992	0.993		
7		0.981	0.988	0.992	0.993	0.994	0.995	0.995	0.995		
8		0.983	0.990	0.994	0.995	0.996	0.997	0.997	0.998		
9		0.985	0.992	0.995	0.997	0.998	0.999	0.999	0.999		
10		0.986	0.994	0.997	0.998	0.999	1.000	1.000	1.001		
11		0.987	0.995	0.998	1.000	1.001	1.001	1.002	1.002		
12		0.988	0.996	0.999	1.001	1.002	1.002	1.003	1.003		
13		0.989	0.997	1.000	1.001	1.002	1.003	1.003	1.004		
14		0.990	0.997	1.001	1.002	1.003	1.004	1.004	1.004		
15		0.991	0.998	1.001	1.003	1.004	1.004	1.005	1.005		
16		0.991	0.998	1.002	1.003	1.004	1.005	1.005	1.006		
17		0.992	0.999	1.002	1.004	1.005	1.006	1.006	1.006		
18		0.992	0.999	1.003	1.004	1.005	1.006	1.006	1.007		
19		0.992	1.000	1.003	1.005	1.006	1.006	1.007	1.007		
20		0.993	1.000	1.003	1.005	1.006	1.007	1.007	1.007		
21		0.993	1.000	1.004	1.005	1.006	1.007	1.007	1.008		
22		0.993	1.001	1.004	1.006	1.007	1.007	1.008	1.008		
23		0.994	1.001	1.004	1.006	1.007	1.008	1.008	1.008		
24		0.994	1.001	1.005	1.006	1.007	1.008	1.008	1.009		
25		0.994	1.002	1.005	1.007	1.008	1.008	1.009	1.009		
26		0.994	1.002	1.005	1.007	1.008	1.008	1.009	1.009		
27		0.995	1.002	1.005	1.007	1.008	1.009	1.009	1.009		
28		0.995	1.002	1.005	1.007	1.008	1.009	1.009	1.009		
29		0.995	1.002	1.006	1.007	1.008	1.009	1.009	1.010		
30		0.995	1.003	1.006	1.008	1.008	1.009	1.010	1.010		

X (CM)		11	12	13	14	15	16	17	18	19	20
Y (CM)											
3		0.977	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978
4		0.984	0.984	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985
5		0.989	0.989	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
6		0.993	0.993	0.993	0.993	0.993	0.993	0.993	0.993	0.993	0.993
7		0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996
8		0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998
9		0.999	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
10		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001
11		1.002	1.002	1.002	1.002	1.002	1.002	1.002	1.002	1.002	1.002
12		1.003	1.003	1.003	1.003	1.003	1.003	1.003	1.003	1.003	1.003
13		1.004	1.004	1.004	1.004	1.004	1.004	1.004	1.004	1.004	1.004
14		1.005	1.005	1.005	1.005	1.005	1.005	1.005	1.005	1.005	1.005
15		1.005	1.005	1.006	1.006	1.006	1.006	1.006	1.006	1.006	1.006
16		1.006	1.006	1.006	1.006	1.006	1.006	1.006	1.006	1.006	1.006
17		1.006	1.007	1.007	1.007	1.007	1.007	1.007	1.007	1.007	1.007
18		1.007	1.007	1.007	1.007	1.007	1.007	1.007	1.007	1.007	1.007
19		1.007	1.007	1.007	1.007	1.007	1.007	1.007	1.007	1.007	1.007
20		1.008	1.008	1.008	1.008	1.008	1.008	1.008	1.008	1.008	1.008
21		1.008	1.008	1.008	1.008	1.008	1.008	1.008	1.008	1.008	1.008
22		1.008	1.008	1.008	1.008	1.008	1.008	1.008	1.008	1.008	1.008
23		1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009
24		1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009
25		1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.010
26		1.009	1.009	1.009	1.010	1.010	1.010	1.010	1.010	1.010	1.010
27		1.009	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
28		1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
29		1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
30		1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010

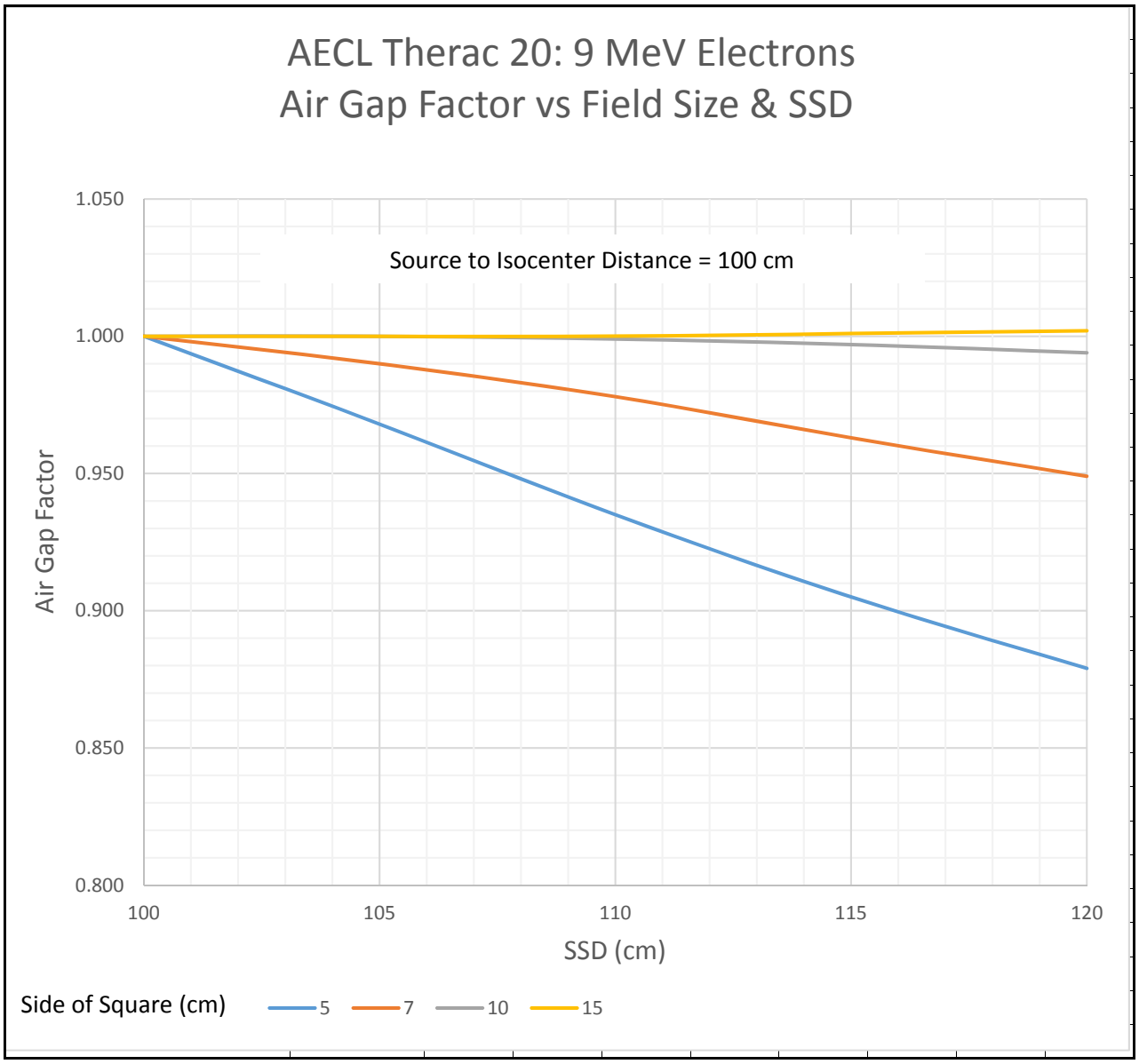
X (CM)		21	22	23	24	25	26	27	28	29	30
Y (CM)											
3		0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978
4		0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985
5		0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
6		0.993	0.993	0.993	0.993	0.993	0.993	0.993	0.993	0.993	0.993
7		0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996
8		0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998
9		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
10		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001
11		1.002	1.002	1.002	1.002	1.002	1.002	1.002	1.002	1.002	1.002
12		1.003	1.003	1.003	1.003	1.003	1.003	1.003	1.003	1.003	1.003
13		1.004	1.004	1.004	1.004	1.004	1.004	1.004	1.004	1.004	1.004
14		1.005	1.005	1.005	1.005	1.005	1.005	1.005	1.005	1.005	1.005
15		1.006	1.006	1.006	1.006	1.006	1.006	1.006	1.006	1.006	1.006
16		1.006	1.006	1.006	1.006	1.006	1.006	1.006	1.006	1.006	1.006
17		1.007	1.007	1.007	1.007	1.007	1.007	1.007	1.007	1.007	1.007
18		1.007	1.007	1.007	1.007	1.007	1.007	1.007	1.007	1.007	1.007
19		1.007	1.007	1.007	1.007	1.007	1.007	1.007	1.007	1.007	1.007
20		1.008	1.008	1.008	1.008	1.008	1.008	1.008	1.008	1.008	1.008
21		1.008	1.008	1.008	1.008	1.008	1.008	1.008	1.008	1.008	1.008
22		1.008	1.008	1.008	1.008	1.008	1.008	1.008	1.008	1.008	1.008
23		1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009
24		1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009
25		1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
26		1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
27		1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
28		1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
29		1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
30		1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010


AECL Therac 20: 20 MeV Electrons
Output Factor vs Side of Field
100 cm SSD
Output Factor
1.200
1.100
1.000
0.900
0.800
0.700
0.600
0
10
20
30
Side of Field (cm)
X, 10
10, Y
Square Field

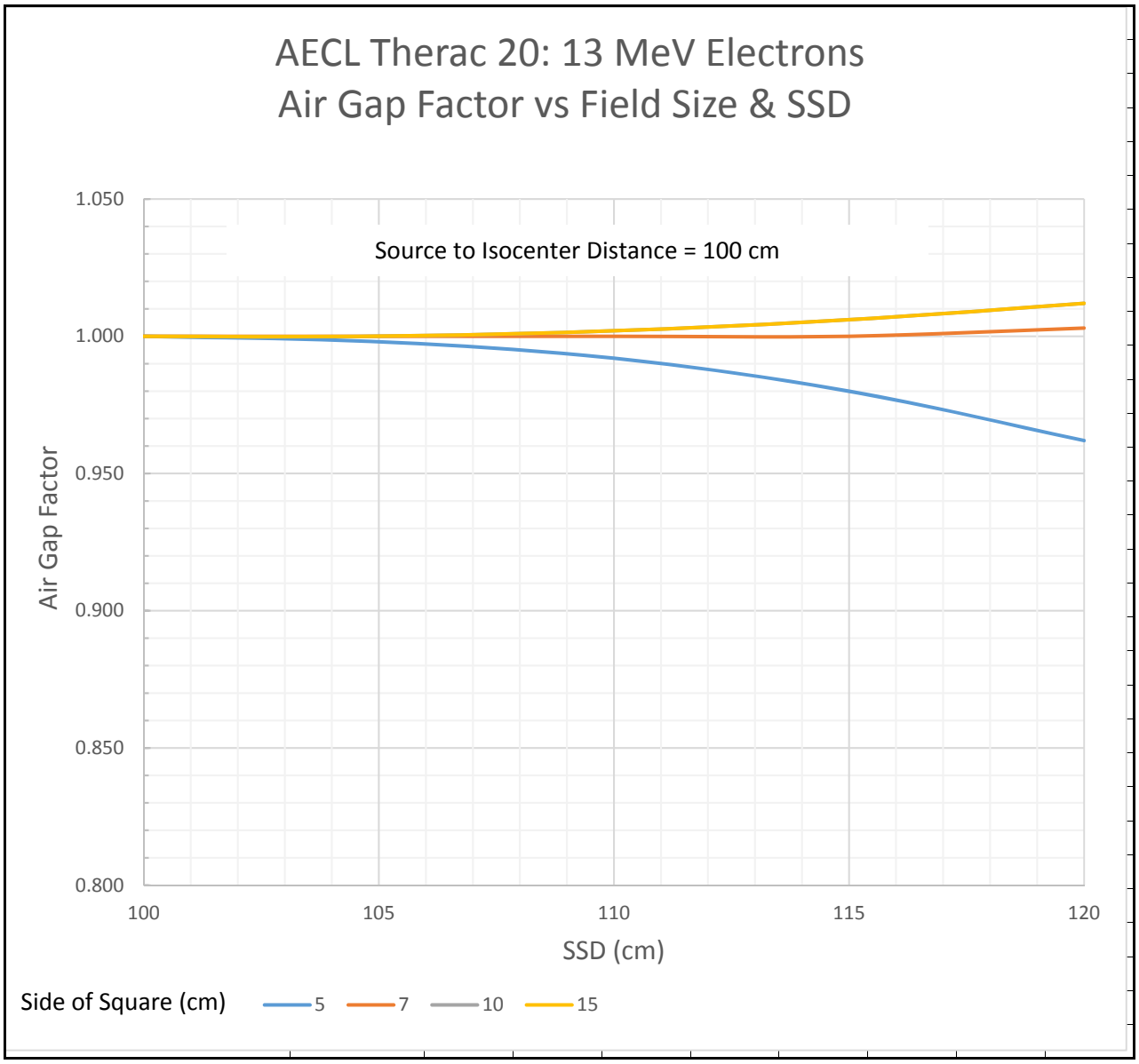
AECL Therac 20: 6 MeV Electrons									
Air Gap Factor vs SSD									
Nominal Energy (MeV)	**6**								
SSD (cm)	**100**								
$E_{p,o}$ (MeV)	**5.7**								
σ_{θ_x} (radians)	**0.063**								
$L_{o,eff}$ (cm)	**12**								
# of SSD's	**5**								
# of Field Sizes	**4**								
Side of Square (cm)		**5**	**7**	**10**	**15**				
SSD (cm)		**Air Gap Factor**							
100		1.000	1.000	1.000	1.000				
105		0.954	0.974	0.990	0.996				
110		0.890	0.943	0.980	0.990				
115		0.810	0.908	0.964	0.982				
120		0.718	0.870	0.948	0.975				


AECL Therac 20: 6 MeV Electrons
Air Gap Factor vs Field Size & SSD
Source to Isocenter Distance = 100 cm
Air Gap Factor
1.040
1.020
1.000
0.980
0.960
0.940
0.920
0.900
0.880
0.860
0.840
0.820
0.800
0.780
0.760
0.740
0.720
0.700
100
105
110
115
120
SSD (cm)
Side of Square (cm)
5
7
10
15

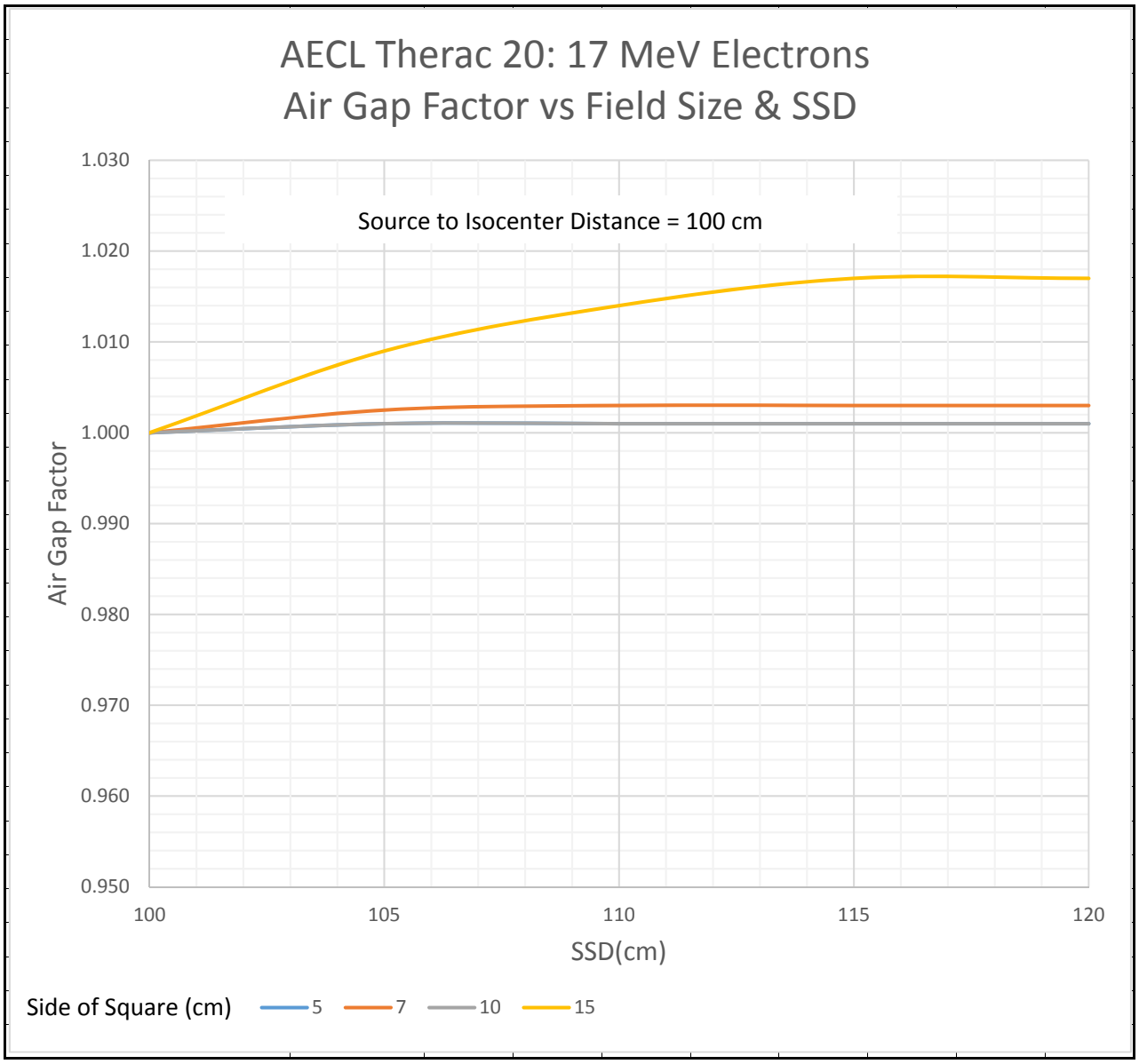
AECL Therac 20: 9 MeV Electrons									
Air Gap Factor vs SSD									
Nominal Energy (MeV)	**9**								
SSD (cm)	**100**								
$E_{p,o}$ (MeV)	**8.8**								
σ_{θ_x} (radians)	**0.041**								
$L_{o,eff}$ (cm)	**12**								
# of SSD's	**5**								
# of Field Sizes	**4**								
Side of Square (cm)		**5**	**7**	**10**	**15**				
SSD (cm)		**Air Gap Factor**							
100		1.000	1.000	1.000	1.000				
105		0.968	0.990	1.000	1.000				
110		0.935	0.978	0.999	1.000				
115		0.905	0.963	0.997	1.001				
120		0.879	0.949	0.994	1.002				


AECL Therac 20: 9 MeV Electrons
Air Gap Factor vs Field Size & SSD
Source to Isocenter Distance = 100 cm
Air Gap Factor
1.050
1.000
0.950
0.900
0.850
0.800
100
105
110
115
120
SSD (cm)
Side of Square (cm)
5
7
10
15

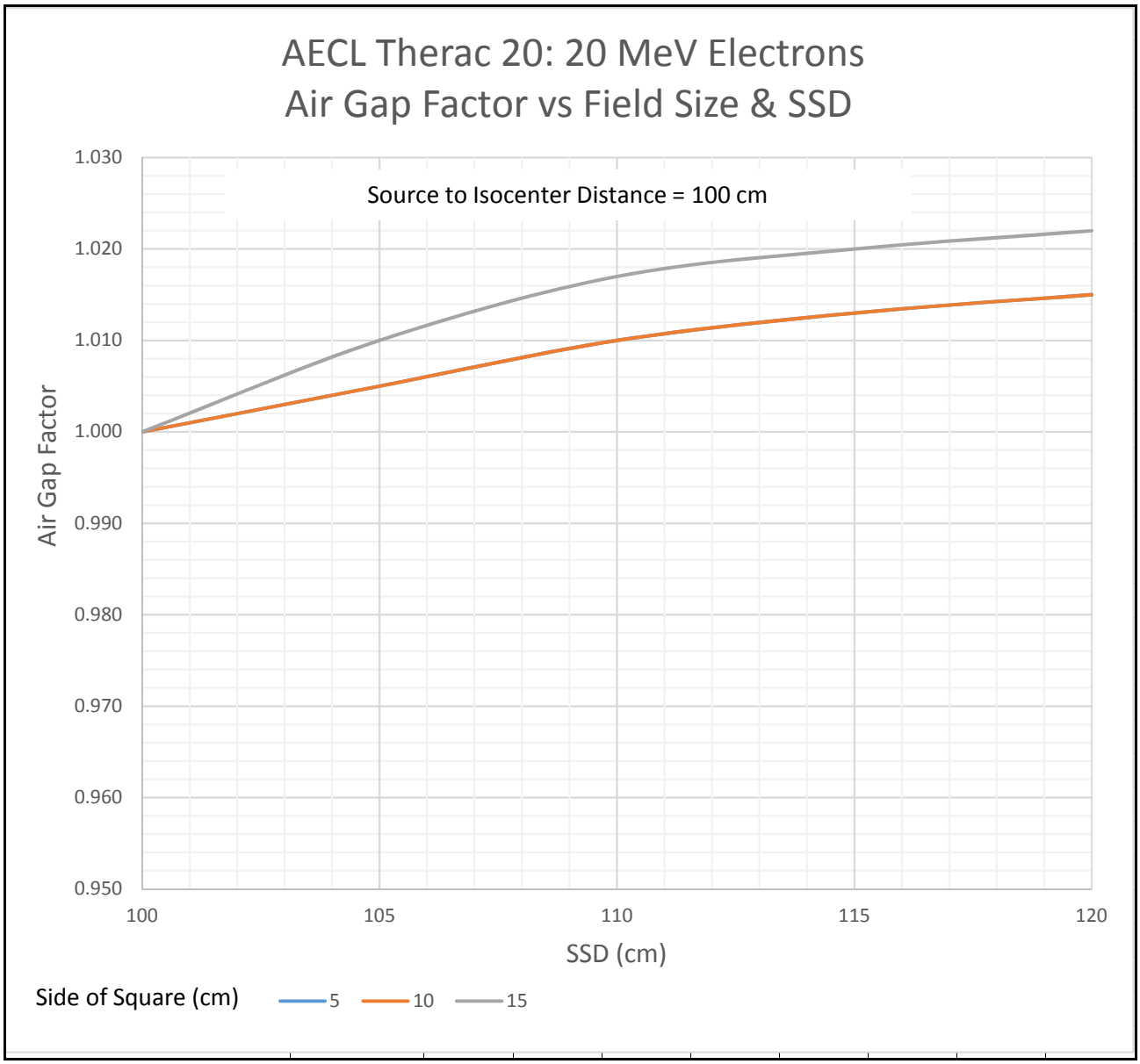
AECL Therac 20: 13 MeV Electrons									
Air Gap Factor vs SSD									
Nominal Energy (MeV)	**13**								
SSD (cm)	**100**								
$E_{p,o}$ (MeV)	**12.1**								
σ_{θ_x} (radians)	**0.034**								
$L_{o,eff}$ (cm)	**12**								
# of SSD's	**5**								
# of Field Sizes	**4**								
Side of Square (cm)		**5**	**7**	**10**	**15**				
SSD (cm)		**Air Gap Factor**							
100		1.000	1.000	1.000	1.000				
105		0.998	1.000	1.000	1.000				
110		0.992	1.000	1.002	1.002				
115		0.980	1.000	1.006	1.006				
120		0.962	1.003	1.012	1.012				


AECL Therac 20: 13 MeV Electrons
Air Gap Factor vs Field Size & SSD
Source to Isocenter Distance = 100 cm
Air Gap Factor
1.050
1.000
0.950
0.900
0.850
0.800
100
105
110
115
120
SSD (cm)
Side of Square (cm)
5
7
10
15

AECL Therac 20: 17 MeV Electrons									
Air Gap Factor vs SSD									
Nominal Energy (MeV)	**17**								
SSD (cm)	**100**								
$E_{p,o}$ (MeV)	**16.3**								
σ_{θ_x} (radians)	**0.025**								
$L_{o,eff}$ (cm)	**12**								
# of SSD's	**5**								
# of Field Sizes	**4**								
Side of Square (cm)		**5**	**7**	**10**	**15**				
SSD (cm)		**Air Gap Factor**							
100		1.000	1.000	1.000	1.000				
105		1.001	1.003	1.001	1.009				
110		1.001	1.003	1.001	1.014				
115		1.001	1.003	1.001	1.017				
120		1.001	1.003	1.001	1.017				


AECL Therac 20: 17 MeV Electrons
Air Gap Factor vs Field Size & SSD
Source to Isocenter Distance = 100 cm
Air Gap Factor
1.030
1.020
1.010
1.000
0.990
0.980
0.970
0.960
0.950
100
105
110
115
120
SSD(cm)
Side of Square (cm)
5
7
10
15

AECL Therac 20: 20 MeV Electrons									
Air Gap Factor vs SSD									
Nominal Energy (MeV)	**20**								
SSD (cm)	**100**								
$E_{p,o}$ (MeV)	**19.1**								
σ_{θ_x} (radians)	**0.022**								
$L_{o,eff}$ (cm)	**12**								
# of SSD's	**5**								
# of Field Sizes	**3**								
Side of Square (cm)		**5**	**10**	**15**					
SSD (cm)		**Air Gap Factor**							
100		1.000	1.000	1.000					
105		1.005	1.005	1.010					
110		1.010	1.010	1.017					
115		1.013	1.013	1.020					
120		1.015	1.015	1.022					


AECL Therac 20: 20 MeV Electrons
Air Gap Factor vs Field Size & SSD
Source to Isocenter Distance = 100 cm
Air Gap Factor
1.030
1.020
1.010
1.000
0.990
0.980
0.970
0.960
0.950
100
105
110
115
120
SSD (cm)
Side of Square (cm)
5
10
15