

POSITRON & ELECTRON SOURCES ELECTRICAL DEMAND SUMMARY ROLL UP								
e+e- Sources	Tech Housing Function	Floor Area m^2	Peak Demand kVa	Installed Capacity kVa	Peak to Installed % kVa	Equip Ft-Print Area m^2	Ft-Print to Floor % Area	Notes:
Tech Area System								
e- Injector	All Housings	5013	7088	5363	132%	1604	32%	110 racks, 10/4sp klys
Undulator	All Housings	17568	16257	12075	135%	5440	31%	198 racks, 18 klys
KAS & Booster	All Housings	8893	17755	15538	114%	3482	39%	205 racks, 24/1sp klys
e+ Transferline	All Housings*	169020	6468	3975	163%	2343	1%	171 racks, 1 klys
Total	*Semi-Shared Housings	200494	47568	36950	129%	12869	6%	Portion of Floor Area Covered By Equipment
Peak kVa Demand per m^2			0.24					
Installed kVa Capacity per m^2				0.18				e+e- Sources
Operating Power kw @ 0.8 LF & Diversity				20101			20101	Power kw Consumed
Peak kVa Demand per m^2 of Ft-Print						3.70		
Installed kVa Capacity per m^2 of Ft-Print							2.87	Installed kVa per m^2 of Equipment

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Tech Area System	e- Injector Tech Housing Function	Floor Area m^2	Peak Demand kVa	Installed Capacity kVa	Peak to Installed % kVa	Equip Ft-Print Area m^2	Ft-Print to Floor % Area	Notes:
e- Pre-Gun 1	Beam-Service	310	296.7	300	99%	250	81%	8 racks
e- Pre-Gun 2	Beam-Service	310	292.8	300	98%	250	81%	8 racks
e- Gun 1 & Drive Lasar	Beam	49.6	8.2	0	0%	6	12%	
e- Gun 2 & Drive Lasar	Beam	49.6	8.2	0	0%	6	12%	
e- Gun 1&2 Drive Lasar	Service	24	4	0	0%	3	13%	
e- 12 Mev Buncher 1	Beam	40.5	6	0	0%	5	12%	
e- 12 Mev Buncher 2	Beam	40.5	6	0	0%	5	12%	
e- 12 Mev Buncher 1&2	Service	108	553	525	105%	82	76%	10 racks, 1/1sp klys
e- 70 Mev Pre-Accel 1	Beam	45	6	0	0%	5	11%	
e- 70 Mev Pre-Accel 2	Beam	45	6	0	0%	5	11%	
e- 70 Mev Pre-Accel 1&2	Service	220	929	750	124%	157	71%	16 racks, 2/2sp klys
e- Dogleg Dump & Wye	Beam	112.5	17.3	0	0%	13	12%	
e- Dogleg Dump & Wye	Service	112.5	116	187.5	62%	20	18%	1 rack & dumps
e- 5.5 GeV Pre-Accel	Beam	1188	255.1	0	0%	134	11%	
e- 5.5 GeV Pre-Accel	Service	1188	3638.9	2587.5	141%	604	51%	56 racks, 7/1sp klys
e- to DR Transport	Beam	225	36	0	0%	25	11%	
e- to DR Transport	Service	225	172.1	187.5	92%	34	15%	3 racks
ETRAN e- 5 Gev Transfer Line	Beam	360	59.3	0	0%	41	11%	
ETRAN e- 5 Gev Transfer Line	Service	360	676.9	525	129%	56	16%	8 racks, 1 klys
Total		5013	7088	5362.5	132%	1604	32%	Portion of Floor Area Coverd By Equipment
Peak kVa Demand per m^2			1.41					
Installed kVa Capacity per m^2				1.07				e- Injector
Operating Power kw @ 0.8 Load Factor				3647				3647 Power kw Consumed
Peak kVa Demand per m^2 of Ft-Print						4.42		
Installed kVa Capacity per m^2 of Ft-Print								3.34 Installed kVa per m^2 of Equipment

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Tech Area System	Undulator	Tech Housing Function	Floor Area m^2	Peak Demand kVa	Installed Capacity kVa	Peak to Installed % kVa	Equip Ft-Print Area m^2	Ft-Print to Floor % Area	Notes:
ELTU e- Linac to Undulator		Beam	1215	200.1	0	0%	137	11%	
ELTU e- Linac to Undulator		Service	1458	627.1	412.5	152%	178	12%	10 racks
EUND e- Undulator		Beam	1000	164.7	0	0%	113	11%	
EUND e- Undulator		Service	900	611.9	525	117%	179	20%	16 racks
EUTL e- Undualtor to Linac		Beam	1620	266.8	0	0%	182	11%	
EUTL e- Undualtor to Linac		Service	1458	740.5	525	141%	181	12%	10 racks
UPT Undulator Photon Transport		Beam	1615	266	0	0%	182	11%	
UPT Undulator Photon Transport		Service	1454	524	300	175%	169	12%	1 rack
UPT Undulator Photon Transport		Beam	866	142.6	0	0%	97	11%	
UPT Undulator Photon Transport		Service	347	199.8	75	266%	40	12%	1 rack
TAPA Target AMD Pre Accel A 125 MeV		Beam	413	246	0	0%	476	115%	2 racks, rad area
TAPA Target AMD Pre Accel A 125 MeV		Service	270	3930.2	3762.5	104%	382	141%	40 racks, 5 klys, sol.
TAPB Target AMD Pre Accel B 125 MeV		Beam	963	360.1	0	0%	848	88%	2 racks, rad area
TAPB Target AMD Pre Accel B 125 MeV		Service	280	406.2	187.5	217%	357	128%	40 racks, 5 klys bkup
PCAPA Positron Capture A		Beam	1513	340.4	0	0%	793	52%	
PCAPA Positron Capture A		Service	248	493.3	412.5	120%	37	15%	6 racks
PCAPB Positron Capture B		Beam	550	158.2	0	0%	375	68%	
PCAPB Positron Capture B		Service	90	229.1	187.5	122%	16	18%	3 racks
PPA e+ Pre Accel 400 MeV		Beam	450	74.1	0	0%	51	11%	
PPA e+ Pre Accel 400 MeV		Service	480	6125.5	5500	111%	599	125%	64 racks, 8 klys
PPATEL e+ Pre Accel to e- Linac		Beam	120	19.8	0	0%	14	12%	
PPATEL e+ Pre Accel to e- Linac		Service	108	74.9	112.5	67%	16	15%	2 racks
UPD Undulator Photon Dumpline		Beam	75	12.4	0	0%	8	11%	
UPD Undulator Photon Dumpline		Service	75	43.4	75	58%	10	13%	1 rack
Total			17568	16257	12075	135%	5440	31%	Portion of Floor Area Coverd By Equipment
Peak kVa Demand per m^2				0.93					
Installed kVa Capacity per m^2					0.69				Undulator
Operating Power kw @ 0.8 Load Factor					8211			8211	Power kw Consumed
Peak kVa Demand per m^2 of Ft-Print							2.99		
Installed kVa Capacity per m^2 of Ft-Print								2.22	Installed kVa per m^2 of Equipment

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KAS & Booster		Tech	Floor	Peak	Installed	Peak to	Equip	Ft-Print	
Tech Area System	Housing Function	Area m^2	Demand kVa	Capacity kVa	Installed % kVa	Ft-Print Area m^2	to Floor % Area	Notes:	
e+ Timing Trombone	Beam	675	111.2	0	0%	76	11%		
e+ Timing Trombone	Service	675	259.7	187.5	139%	81	12%	2 racks	
e- KAS Pre-Gun	Beam-Service	310	16.7	187.5	89%	161	52%	4 racks	
e- KAS Gun & Drive Lasar	Beam	49.6	8.2	0	0%	6	12%		
e- KAS Gun & Drive Lasar	Service	24	12.1	0	0%	3	13%		
e- KAS 12 MeV Buncher	Beam	40.5	6.7	0	0%	5	12%		
e- KAS 12 MeV Buncher	Service	54	593.6	637.5	93%	77	143%	8 racks, 1/1sp klys	
e- KAS 70 MeV Pre Accel	Beam	45	7.4	0	0%	45	100%		
e- KAS 70 MeV Pre Accel	Service	110	1518.6	1275	119%	152	138%	16 racks, 2 klys	
e- KAS Dogleg & Dump	Beam	112.5	18.5	0	0%	13	12%		
e- KAS Dogleg & Dump	Service	112.5	55.7	75	74%	15	13%	1 rack	
e- KAS Pre Accel 70 MeV	Beam	108	17.8	0	0%	45	42%		
e- KAS Pre Accel 70 MeV	Service	264	501.9	412.5	122%	98	37%	8 racks, 1 klys	
KAS TAP e+ Target Pre Acel 125 MeV	Beam	412.5	67.9	0	0%	46	11%		
KAS TAP e+ Target Pre Acel 125 MeV	Service	270	3433.3	3287.5	104%	373	138%	40 racks, 5 klys	
KAS PCAP- e+ Capture	Beam	1512.5	337.7	0	0%	802	53%	Rad Area	
KAS PCAP- e+ Capture	Service	247.5	490.6	525	93%	37	15%	6 racks	
KAS PPA- e+ Pre Accel 400 MeV	Beam	935	200.8	0	0%	105	11%		
KAS PPA- e+ Pre Accel 400 MeV	Service	442	6245.9	5800	108%	590	133%	64 racks, 8 klys	
PBSTR- e+ Booster 1135 MeV	Beam	211.5	34.8	0	0%	24	11%		
PBSTR- e+ Booster 1135 MeV	Service	211.5	510.3	412.5	124%	91	43%	8 racks, 1 klys	
PBSTR- e+ Booster 2605 MeV	Beam	369	60.8	0	0%	42	11%		
PBSTR- e+ Booster 2065 MeV	Service	369	1002.9	862.5	116%	175	47%	16 racks, 2 klys	
PBSTR- e+ Booster 5000 MeV	Beam	666	109.7	0	0%	75	11%		
PBSTR- e+ Booster 5000 MeV	Service	666	1982	1875	106%	345	52%	32 racks, 4 klys	
Total		8893	17755	15537.5	114%	3482	39%	Portion of Floor Area Covered By Equipment	
Peak kVa Demand per m^2			2.00						
Installed kVa Capacity per m^2				1.75					KAS & Booster
Operating Power kw @ 0.8 Load Factor				10566				10566	Power kw Consumed
Peak kVa Demand per m^2 of Ft-Print						5.10			
Installed kVa Capacity per m^2 of Ft-Print							4.46		Installed kVa per m^2 of Equipment

POSITRON & ELECTRON SOURCES ELECTRICAL DEMAND SUMMARY								
e+ Transferline	Tech	Floor	Peak	Installed	Peak to	Equip	Ft-Print	
Tech Area System	Housing	Area	Demand	Capacity	Installed	Ft-Print	to Floor	Notes:
	Function	m^2	kVa	kVa	% kVa	Area m^2	% Area	
PTRAN1 e+ 0.4 Gev Transfer Line	Beam	21375	2.3	0	0%	0	0%	
PTRAN1 e+ 0.4 Gev Transfer Line	Service	21375	918.2	900	102%	44	0%	49 racks
PTRAN2 e+ 0.4 Gev Transfer Line	Beam	18000	3600	1350	267%	2066	11%	34 racks
PTRAN2 e+ 0.4 Gev Transfer Line	Service	18000	0	0	0%	0	0%	
PTRAN3 e+ 0.4 Gev Transfer Line	Beam	21375	2.3	0	0%	0	0%	
PTRAN3 e+ 0.4 Gev Transfer Line	Service	21375	1217.1	1125	108%	58	0%	65 racks
PTRAN4 e+ 5 Gev Transfer Line	Beam	23400	2.3	0	0%	0	0%	
PTRAN4 e+ 5 Gev Transfer Line	Service	23400	33.2	75	44%	25	0%	49 racks
PTRAN4 e+ 5 Gev Transfer Line	Beam	360	59.3	0	0%	41	11%	
PTRAN4 e+ 5 Gev Transfer Line	Service	360	632.8	525	121%	109	30%	8 racks, 1 klys
Total		169020	6468	3975	163%	2343	1%	Portion of Floor Area Coverd By Equipment
Peak kVa Demand per m^2			0.04			506		
Installed kVa Capacity per m^2				0.02				e+ Transferline
Operating Power kw @ 0.8 Load Factor				2703				2703 Power kw Consumed
Peak kVa Demand per m^2 of Ft-Print						2.76		
Installed kVa Capacity per m^2 of Ft-Print							1.70	Installed kVa per m^2 of Equipment