



## ENGINEERING DIVISION

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### LAY OUT OF THE SERVICE AREA

#### Abstract

This document defines the number of racks and power supplies inside the service area along with their power consumption, dimensions and distribution.

Note: Unless noted, all consumptions are feed from the Dynamic UPS Filtered supply.

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*History of Changes*

<i>Rev. No.</i>	<i>Date</i>	<i>Pages</i>	<i>Description of changes</i>

### *References*

[1] :

[2]:.

[3]:

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## LABORATORIES IN SERVICE AREA

- LINAC SERVICE AREA

	Color	Area [m2.]	N° of power supplies	N° of racks	N° of feeders	Location	Max Input Power (kW)
<b>TOTAL</b>		54			1		142

- RF LAB SERVICE AREA

	Color	Area [m2.]	N° of power supplies	N° of racks	N° of feeders	Location	Max Input Power (kW)
					1		1 Critical
					1		30
					1		200 Non Preferent
<b>TOTAL</b>		55					231

- VACUUM LAB SERVICE AREA

	Color	Area [m2.]	N° of power supplies	N° of racks	N° of feeders	Location	Max Input Power (kW)
					1		1 Critical
					1		30
					1		10 Non Preferent
<b>TOTAL</b>		55					41







- ID + MAGNET LAB SERVICE AREA

	Color	Area [m2.]	N° of power supplies	N° of racks	N° of feeders	Location	Max Input Power (kW)
					1		1 Critical
					1		30
					1		10 Non Preferent
<b>TOTAL</b>		157					41

## POWER SUPPLIES AND OTHER EQUIPMENT

### Standard 19" racks




- STORAGE RING MAGNET POWER SUPPLIES

	N°	Color	Size [mm.] W x D x H	N° of power supplies	N° of racks	N° of feeders	Location	Max Input Power (kW)
<b>DIPOLE</b>	1		612x1050x2000	1	5	1	All in one location	500
<b>QUADRUPOLE</b>	2		612x800x2000	112	16	16	1 rack x cell	27 x 16 cells = 443
<b>SEXTUPOLE</b>	3		612x800x2000	9	9	9	All in one location	24+ 45+ 24+ 24+ 24+ 45+ 29+ 84+84= 383
<b>HORIZONTAL STEERING</b>	4		612x800x2000	120	16	16	1 rack x cell	2.937 x 16 cells = 47
<b>VERTICAL STEERING</b>	5		612x800x2000	120	16	16	1 rack x cell	2.937 x 16 cells = 47
<b>SKEW QUADRUPOLE</b>	6		612x800x2000	120	4	4	1 rack x quarter	1.66
<b>TOTAL</b>								1422xDF=1200



DF= Demand Factor






- BOOSTER – STORAGE RING TRANSFER LINE MAGNET POWER SUPPLIES

	N°	Color	Size [mm.] W x D x H	N° of power supplies	N° of racks	N° of feeders	Location	Max Input Power (kW)
<b>DIPOLE</b>	13		612x800x2000	1	1	1	All in one location	
<b>QUADRUPOLE</b>	14		612x800x2000	9	2	2	All in one location	
<b>PULSED</b>	15		612x800x2000		1	1	All in one location	
<b>TOTAL</b>								33

- DIAGNOSTIC

	N°	Color	Size [mm.] W x D x H	N° of power supplies	N° of racks	N° of feeders	Location	Max Input Power (kW)
<b>BPM</b>	16		612x800x2000	112	32	16	2 rack x cell	2 x 16 cells = 32
<b>Diagnostic</b>	17		612x800x2000		12	2	6 racks X short SS	2 x 12 = 24
<b>TOTAL</b>								56


- VACUUM – STORAGE RING – BOOSTER – ID – TRANSFER LINE

	N°	Color	Size [mm.] W x D x H	N° of power supplies	N° of racks	N° of feeders	Location	Max Input Power (kW)
<b>Vacuum SR + BO</b>	18		612x800x2000		32	16	2 racks x cell	10 x 16 cells = 160
<b>ID Vacuum</b>	19		612x800x2000		17	1	1 rack x SS	5
<b>TL Vacuum</b>	27		612x800x2000		2		1 rack x TL	12.5
<b>TOTAL</b>								177.5xDF=50

DF= Demand Factor




- ID

	N°	Color	Size [mm.] W x D x H	N° of power supplies	N° of racks	N° of feeders	Location	Max Input Power (kW)
<b>ID PS</b>	23		612x800x2000		38	20	10 locations	5 x38 racks = 190
<b>TOTAL</b>								190xDF=63


DF= Demand Factor

- FE

	N°	Color	Size [mm.] W x D x H	N° of power supplies	N° of racks	N° of feeders	Location	Max Input Power (kW)
<b>FE PS</b>	25		612x800x2000		32	16	2 racks x cell	3 x 32racks = 96
<b>TOTAL</b>								96xDF=75

DF= Demand Factor

- Control racks

	N°	Color	Size [mm.] W x D x H	N° of power supplies	N° of racks	N° of feeders	Location	Max Input Power (kW)
	26		612x800x2000		39	16 + 7(RF racks)	2 racks x cell + 1 rack x RFsystem	3 x 39racks = 117
<b>TOTAL</b>								117XDF=60

DF= Demand Factor