

# 120 Degree Phase Advance\ Cell Lattice

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120° PHASE ADVANCE/CELL LATTICE

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120° Phase Advance / Cell  
Lattice

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# Lattice

①

No. of Period 12  
Each Period has a symmetry point

Structure for half a superperiod

(PC) (CS) (2CE) (LS)

C is a regular cell :

QF/2	00	B	00	QD/2
QD/2	00	B	00	QF/2

CS is a dispersion Killer cell :

QF/2	00	LB	00	QD/2
QD/2	00	B	00	QF/2

CE is an empty cell :

QF/2	00	LB	00	QD/2
QD/2	00	LB	00	QF/2

LS is the long straight section :

QF/2 ( 03 Q3 02 Q2  
01 Q1) 00 AL Lφ

$$B\rho = 839.72 \text{ T-m}$$

Drifts :

00 0.9960 m

LB 7.85

AL 18.

Lφ 10.

01

02

03

} to be adjusted

Dipole : (B)

Field 3.29469 T

Length 7.85 m

Quadrupoles :

QF', QD

total length 1.9 m

 $B'/B\rho$ 0.077637 m<sup>-2</sup>

(adjust strength for a phase advance of 120° per cell)

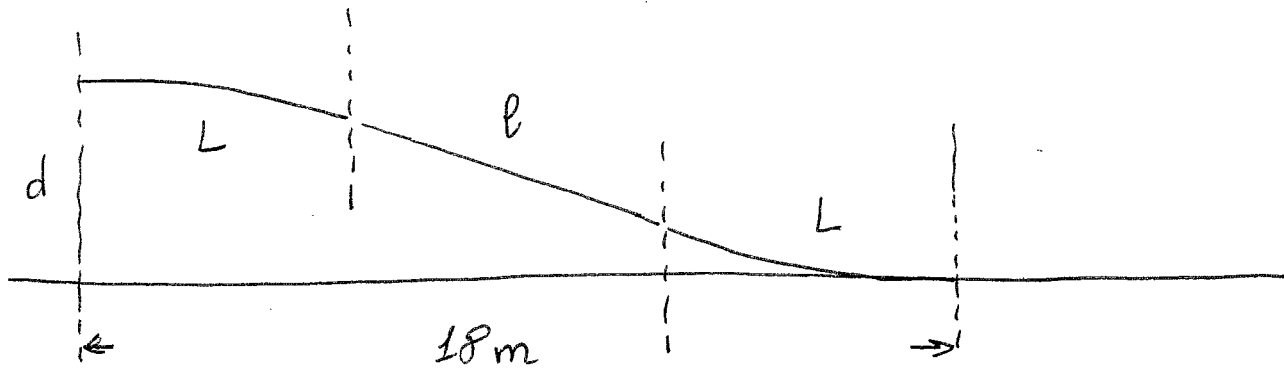
Q<sub>1</sub>, Q<sub>2</sub>, Q<sub>3</sub>length, strength and location adjusted to get  $\beta_H^* = \beta_V^* = 2.0$  m

## Supplementary Condition :

Length of (03 Q3 02 Q2 01 Q1) = 31.2148 m

# Vertical Bend (AL)

(4)



$$d = (18 - L) \theta$$

$$L = 9 - \sqrt{81 - d/a} \quad a = 0.003924$$

$$\theta = \frac{0.0308}{7.85} L$$

$$d = 0.003924 (18 - L) L$$

d	L	$\theta^2/2 = aL^2/2$	l
10 cm	1.55 m	0.47 cm	14.90 m
15	2.46	1.19	13.08
20	3.52	2.43	10.96
25	4.84	4.60	8.32
12	1.90	0.71	14.2

Replace AL with : BV L BV

L Drift 14.2 m

BVM and BVP are vertical bends

Length 1.90 m  
Field 3.29459 T