

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
Each period has a symmetry point

12

Structure for half a superperiod

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

C is a regular cell :

QF/2	OO	B	OO	QD/2
QD/2	OO	B	OO	QF/2

CS is a dispersion killer cell :

QF/2	OO	LB	OO	QD/2
QD/2	OO	B	OO	QF/2

CE is an empty cell :

QF/2	OO	LB	OO	QD/2
QD/2	OO	LB	OO	QF/2

LS is the long straight section :

QF/2	(Q3	Q3	Q2	Q2
01	Q1)	00	AL	Lφ	

B_q = 839.72 T-m

Drifts :

00 0.9960 m

LB 7.85

AL 18.

Lφ 10.

01

02

03

} to be adjusted

Dipole : (B)

Field 3.29459 T

Length 7.85 m

Quadrupoles :

QF', QD

total length 1.9 m

 $B'/B\rho$ 0.077637 m⁻²

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

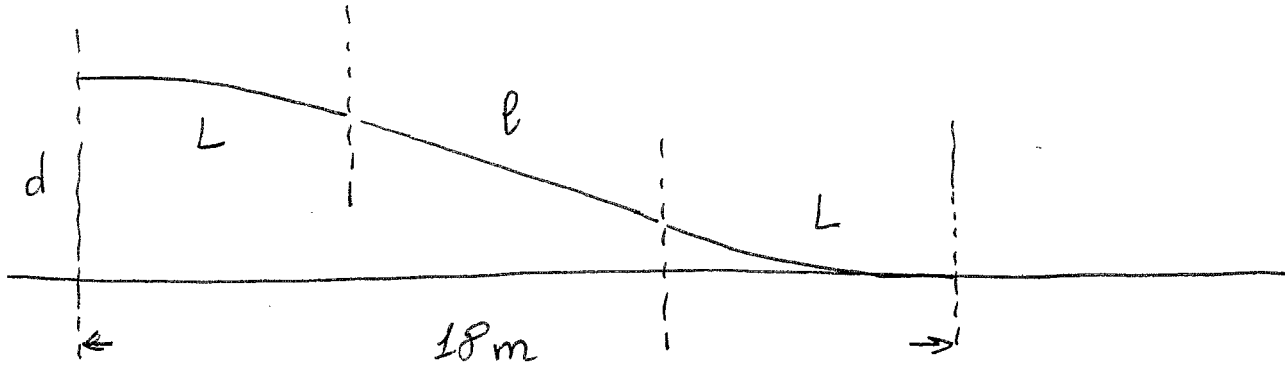
Q₁, Q₂, Q₃length, strength and location adjusted to get $\beta_H^* = \beta_V^* = 2.0$ m

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	$9\theta^2/2 = aL^2/2$	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