Main characteristic of the NICA booster and collider magnets

Characteristics	Booster		Collider	
	Dipole	Lens	Dipole	Lens
Number of magnets in the ring	40	48	80	86 (+12*)
Maximum magnetic induction, T (field gradient), T/m	1,8	 20,2	1,8 -	- 23
Minimum magnetic induction, T (field gradient), T/m	0,11	 1,2	0,57 -	- 7,2
Effective magnetic length, m	2,2	0,55	1,94	0,46
Ramp rate $^{dB}/_{dt}$, T/s $^{dG}/_{dt}$, T/(m·s)	1,2	- 13,5	≤ 0,5	 -
Field error Δ B/ B (Δ G/ G) at R= 30 mm	≤ $6 \cdot 10^{-4}$		≤ $2 \cdot 10^{-4}$	
Beam pipe aperture (horizontal/vertical), mm/mm	128/64	130/64	120/70	120/70
Pole radius, mm	-	47,5	-	47,5
Bending angle, deg	9	-	4,5	-
Radius of curvature, m	14.01	-	-	-
Yoke width, m	0,31	0,226	0,304	0,258
Yoke height, m	0,228	0,226	0,554	0,548
Distance between the beams, m	-	-	0,32	
Overall weight , kg	850	110	1000	300
Current at maximum field (field gradient), kA	9,68		10,4	
Number of turns in the winding	10	8	10	8
Inductance , μH	630	96	450	94
Vacuum shell outer diameter , mm	570		812	
Dynamic heat releases, W	8,4	0,84	-	-
Static heat leak, W	4,4	4,0	8,0	5,0
Helium pressure drop in the winding, kPa	≤ 27		≤ 27	
Maximal temperature of helium in the winding, K	4,65		4,65	

* - the final focus lens