

Assumption : $\epsilon_y = 60 \text{ pm}$ (1.5 %) for collision ($\sigma_y^* = 0.22 \text{ }\mu\text{m}$ for 0.8 mm)

LER $\beta_x^* / \beta_y^* : 80 \text{ mm} / 1.0 \text{ mm}$

LER $\beta_x^* / \beta_y^* : 60 \text{ mm} / 0.8 \text{ mm}$

June 21,2020	$A_x \text{ (mm)}$	A_x/σ_x	$A_y \text{ (mm)}$	A_y/σ_y
D06H1	10.25	16.8		
D06H3	10.75	17.6		
D03H1	11.25	16.8		
D02H1	8.0	24.8		
D02H2	10.25	17.2		
D02H3	13.0	16.1		
D02H4	8.25	18.8		
D06V1			2.3	36.1
D06V2			2.1	59.7
D02V1			1.3	44.9
QC1LP	13.0	41.7	13.5	62.8
QC2LP	35.0	43.3	35.0	289
QC2RP	35.0	43.3	35.0	289
QC1RP	13.0	42.6	13.5	63.0

July 1,2020	$A_x \text{ (mm)}$	A_x/σ_x	$A_y \text{ (mm)}$	A_y/σ_y
D06H1	10.25	16.8		
D06H3	10.8	17.7		
D03H1	11.0	16.4		
D02H1	8.0	23.5		
D02H2	10.25	16.8		
D02H3	12.25	15.6		
D02H4	8.0	17.1		
D06V1			2.2	34.3
D06V2			2.0	56.3
D02V1			1.5	44.7
QC1LP	13.0	35.9	13.5	55.8
QC2LP	35.0	37.2	35.0	256
QC2RP	35.0	37.2	35.0	256
QC1RP	13.0	36.6	13.5	55.8

Assumption : $\varepsilon_y = 60 \text{ pm}$ (1.3 %) for collision ($\sigma_y^* = 0.22 \text{ }\mu\text{m}$ for 0.8 mm)

HER $\beta_x^* / \beta_y^* : 60 \text{ mm} / 1.0 \text{ mm}$

HER $\beta_x^* / \beta_y^* : 60 \text{ mm} / 0.8 \text{ mm}$

June 21,2020	$A_x \text{ (mm)}$	A_x/σ_x
D09H1	10.0	16.2
D09H2	10.0	16.2
D09H3	11.0	17.8
D09H4	12.0	19.4
D12H1	9.9	16.0
D12H2	9.8	15.9
D12H3	9.8	15.9
D12H4	9.8	15.9
D01H3	4.8	17.0
D01H4	8.0	25.0
D01H5	8.0	21.5
QC1LE	15	28.4
QC2LE	35	25.9
QC2RE	35	23.5
QC1RE	15	28.7

June 21,2020	$A_y \text{ (mm)}$	A_y/σ_y
D09V1	1.6	52.5
D09V2	3.1	90.8
D09V3	1.3	42.7
D09V4	3.4	107.3
D12V1	3.3	104.1
D12V2	1.8	59.1
D12V3	2.2	72.1
D12V4	3.3	96.6
D01V1	1.9	36.0
QC1LE	15	46.5
QC2LE	35	196.6
QC2RE	35	198.8
QC1RE	15	46.4

July 1,2020	$A_x \text{ (mm)}$	A_x/σ_x
D09H1	10.0	16.2
D09H2	10.0	16.2
D09H3	11.0	17.8
D09H4	12.0	19.4
D12H1	8.9	14.4
D12H2	8.8	14.2
D12H3	8.8	14.2
D12H4	8.8	14.2
D01H3	4.8	17.0
D01H4	8.0	25.0
D01H5	8.0	21.5
QC1LE	15	28.4
QC2LE	35	25.9
QC2RE	35	24.0
QC1RE	15	28.6

July 1,2020	$A_y \text{ (mm)}$	A_y/σ_y
D09V1	1.6	52.5
D09V2	3.1	90.8
D09V3	1.3	42.7
D09V4	3.3	104.1
D12V1	3.4	107.3
D12V2	1.9	62.4
D12V3	2.2	72.2
D12V4	3.3	96.6
D01V1	2.1	35.7
QC1LE	15	41.6
QC2LE	35	175.8
QC2RE	35	177.8
QC1RE	15	41.5

	Belle II	BM	BT	Control	Linac	Magnet	RF	Vacuum	Facility	Others
BELLE HV (ARICH)	2.5									
SRM chiller		1.5								
XRM chiller		3.0								
XRM		0.5								
BH1P : Magnet water stop			0.5							
BH3P : Magnet water stop			3.0							
QIF : Magnet water stop			1.5							
DR injection kicker : Control board			3.5							
MR injection kicker : down			1.0							
QX4E PS : breaker trip			11.5							
Screen monitor and Beam shutter control			0.5							
ZVQD2 : Magnet PS DC link/IL			0.5							
Beam gate control				2.0						
KL B1 thyatron					3.0					
ECS : BM 61 1-6					4.5					
ECS : BM 61 2-5					2.0					
KL 61 klystron					3.0					
KL A1 1					6.5					
KL A1 A					3.5					
PB AT J1					2.5					
PD/F 48 4 Charging gate module					1.5					
RF Gun					5.0					
SB 5 : Sub-booster					3.5					
SC 13 4SP_R water flow switch					1.0					
Linac timing system					2.5					
Linac pulse magnet control					1.5					
SD7NLP Magnet PS PWM OC						3.0				
BLY2LP Magnet PS AC OC						0.5				
BWDNRP Magnet PS Input OC/Fuse						24.0				
QCS Quench						16.0				
QD3P : Magnet PS Tracking error						1.0				
QD5P : Magnet PS Tracking error						2.0				
QFROE : Magnet PS Tracking error						3.5				
QDROE : Magnet PS Digital voltage monitor						1.0				
QS2FRE : Magnet PS Tracking error						7.0				
SF2NRE : Magnet PS Tracking error						0.5				
RF D04H Circulator water stop							0.5			
RF D05A SiC WG							1.5			
RF D05F SiC WG							0.5			
RF D05F Klystron focus coil							3.0			
RF D08A MT-DL temp							2.0			
RF D10A Circulator water temp							0.5			
RF D11 klystron HV down							0.5			
RF D11 VMW							6.5			
RF D08E							2.0			
RF RFDET MON module							1.0			
Facility D05 rain leak									0.5	
Facility D11 rain leak									2.5	
Facility D02 cooling water pump									13.5	
total (hours)	2.5	5.0	22.0	2.0	40.0	58.5	18.0	0.0	16.5	1.0

Troubles

Total :
165.5 hours

2020	Physics run	Machine tuning	Machine study	Troubles	Maintenance and others	total (hours)
February	0.0	102.0	0.0	0.0	10.0	112.0
March	344.0	314.5	0.0	17.5	68.0	744.0
April	468.0	135.0	0.0	71.5	45.5	720.0
May	525.0	133.5	0.0	26.0	59.5	744.0
June	463.0	153.5	28.0	50.5	25.0	720.0
July	9.0	0.0	0.0	0.0	0.0	9.0
total (hours)	1809.0 59.3 %	838.5 27.5 %	28.0 0.9 %	165.5 5.4 %	208.0 6.8 %	3049.0