

**PrimEx production, Phase III**  
**August 27 - December 19, 2022**

**Beam Energy:** 11.55 GeV  
**Beam current:**  $10^{-4} X_0$   
**Converter:** 750  $\mu\text{m}$  Be

**Setup:** hd\_all.tsg\_ccal\_prod\_fdc  
**Configuration:** CCAL\_FCAL\_PS\_m9 (m10)

**Begin of run:**

**End of run:**

**Run duration:**

**Accelerator efficiency:** (see table below)

**Production on empty Be target (Solenoid ON)**

<b>Run</b>	<b>Date</b>	<b>Events (M)</b>	<b>Current</b>	<b>Target</b>	<b>Comments</b>	<b>Files</b>	<b>PS Trigs (M)</b>
110446	08/29	2.1	70	empty	Profiler inserted		
110447	19:40	52	200	Be	AC lock restored		35.84
110448		9.7	200				6.65
110449		78					54.15
110450		70					48.5
110451		80					54.82
110452		75					
110453		74					50.7
110454		39					26.96
110455		5			raw mode		3.48
Total		484.8					281.1

**Production on empty Be target (Solenoid OFF)**

Run	Date	Events (M)	Current	Target	Comments	Files	PS Trigs (M)
110476	8/30 20:1	84	200	empty	CDC and FDC		55.28
110477		65		Be	switched off		42.41
110478		78					
110479		80					52.34
110481		79					
110482		68					44.26
Total		454					194.29

**Production on Be target, 200 nA (Solenoid ON)**

Run	Date	Events (M)	Current	Target	Comments	Files	PS Trigs (M)
110497	8/31 21:5	192	200	Be	CDC and FDC		50.9
110498	8/31 23:5	214			switched ON		
110499		207					
110500		189					49.93
110501		199					53.17
110503		28					7.54
110504		192					
110505		174					46.98
110515		190					52.1
110516		134					36.44
110517		173					
110532		192					52.76
110533		184					
110534		179					49.32
110535		127					
110536		169					46.85
110537		128					35.24

110538		84					23.5
110539		179					
110540		14					3.81
110541		31	100 nA				9.61
110542		7					
110543		7					
110544		201					
110545		202					
110546		170					
110547		198					55.49
110548		132					36.86
110549		178					49.91
110551		149			check file 021		41.07
110552		22					6.11
110553		261					
Total		4706					707.59

**Production on Be target, 100 nA (Solenoid ON)**

Run	Date	Events (M)	Current	Target	Comments	Files	PS Trigs (M)
110554	9/3	85	100	Be	CDC and FDC		26.17
110555	19:16	16			switched ON		4.88
110556		89					27.91
110557		90					28.1
110558		86					
110559		79					24.54
110560		31					9.59
110561		20			junk		6.33
110562		91					28.54
110563		89					
110564		81					25.41
Total		757					181.47

**Production on Be target, 50 nA (Solenoid ON)**

Run	Date	Events (M)	Current	Target	Comments	Files	PS Trigs (M)
110565	9/04	31	50				9.79
110567	14:21	38					12.04
110576		38					12.09
110577		35					11.22
110578		35					11.33
110579		37					11.96
110580		13					3.54
110581		35					10.14
110582		34					10.92
110583		31					9.85
Total		327					102.88

**Production on Be target, 200 nA (Ramping the Solenoid down)**

Run	Date	Events (M)	Current	Target	Comments	Files	PS Trigs (M)
110585	9/5 11:29	208	200		Start at 1330 A		
110586		217			Start at 750 A		
Total		425					

**Production on Be target, 200 nA (Solenoid OFF)**

Run	Date	Events (M)	Current	Target	Comments	Files	PS Trigs (M)
110600	9/5	185	200	Be	check file 000		41.69
110601	19:17	225					51.6
110602		232					53.17
110603		249					57.26
110605		219					50.48

110606		219					50.5
110607		98		tagger magnet dumped			22.68
110608		231					
110609		191					44.4
110610		232					54.07
110615	17:38	225					51.83
Total		2306					477.68

**Production on Be target, 100 nA (Solenoid OFF)**

Run	Date	Events (M)	Current	Target	Comments	Files	PS Trigs (M)
110616	9/6	103	100				26.85
110617		111					
110618		108					28.35
110619		101					27.06
110620		93					24.72
110621		36					9.53
Total		552					116.51

**Filling He target, 200 nA (Ramping Solenoid ON)**

Run	Date	Events (M)	Current	Target	Comments	Files	PS Trigs (M)
110637	09/07	11	200				
110638	21:25	30					
110639		92					
110640	9/8 1am	109					
Total		242					

**Production on He target, 200 nA (Solenoid ON)**

Run	Date	Events (M)	Current	Target	Comments	Files	PS Trigs (M)
110641	9/8	151	200	LHe			53.72
110642		152					52.79
110643		158					54.77
110644		65					22.49
110657		153			Added low-threshold FCAL trigger		24.48
110672		303					48.52
110675		306			Masked 2 Noisy FCAL channels		49.04
110676		287			check file 026		45.67
110677		314					50.47
110678	9/9	333					53.32
110679		336					53.9
110680		264			check file 082		41.97
110682		233					37.34
110683		307					49.23
110684		347					55.82
110685		337					54.21
110686		69					11.03
110687		383					61.58
110688		45					7.31
110689		337					54.18
110690		208					33.55
110691		362					58.3
110692		344					54.94
110693	9/10	315					50.51
110694		336					53.69
110695		314					50.6
110696		348					56.07
110697		336					54.2
110698		348					56.08
110699		347					55.98
110700		161					25.91
110702		301					48.62

110703		339					54.61
110704		331					53.48
110705	9/11	301					48.56
110706		238					38.51
110707		278					45
110708		315					51.11
110709		185					29.89
110710		149					24.12
110711		282					45.49
110713		302					48.86
110714		235					37.95
110715		170					27.6
110716		331					53.11
110718		301					48.73
110719		189					30.53
110724	9/12	259					42.04
110725		253					40.93
Total		13058					2200.81

**Production on empty He target, 200 nA (Solenoid ON)**

Run	Date	Events (M)	Current	Target	Comments	Files	PS Trigs (M)
110737	9/12	114	200	Empty			49.99
110738	21:50	130					56.88
110739		122					53.44
110740		129					56.52
110741		64					27.89
110743		119					51.74
110744		127					55.95
110745		125					54.76
110746		127					55.08
110747		48					21.12

110749		69					30.08
110750		58					25.23
110751		124					54.22
110752		119					52.28
110753		130					57.17
110754		121					53.19
110755		105					45.77
Total		1831					801.31

**Production on He target, 200 nA (Solenoid ON)**

Run	Date	Events (M)	Current	Target	Comments	Files	PS Trigs (M)
110771	9/14	299	200	He			47.91
110772	22:08	305			check file 021		48.66
110773		308					49.32
110774		321			check file 052		51.3
110775		331					53.14
110776		274					44.01
110782		168					27.01
110783		274					44.2
110784		281					45.33
110785		50					7.97
110786		343					55.18
110787		274					44.09
110788		328					52.4
110789		319					51.48
110790		289					46.72
110791		200					31.83
110792		251					40.48
110793		321					51.88
110794		67					10.83
110795		287					45.94



110796		241					38.96
110798		228					36.93
110799		27					4.24
110800		340					54.9
110801		344			check file 113		55.22
110802		200					32.22
110803		307					49.64
110804		252					40.75
110805		227					36.74
110806		245					39.62
110807		93					14.97
110808		254					41.17
110809		310					50.19
110810		194					31.2
110811		223					36.04
110812		198					31.65
110814		145					23.17
110815		332			check file 119		52.53
110816		15					24.33
110817		26					40.62
110818		296			HL coda		47.23
110819		19					3.1
110820		202					32.73
110821		290					47.07
110822		290					46.58
110824		270					43.84
110825		166					26.94
Total		11024					1832.26

**Production on empty He target, 200 nA (Solenoid ON)**

Run	Date	Events (M)	Current	Target	Comments	Files	PS Trigs (M)
-----	------	------------	---------	--------	----------	-------	--------------

110828	9/19	110	200				48.22
110829	9:50	94					41.04
110830		49					21.38
110831		5			beam mostly off		1.72
110833		19					8.22
110834		26					11.05
110835		5					2.03
110836		91					39.84
110837		40					17.32
Total		439					190.82

**Production on He target, 200 nA (Solenoid ON)**

Run	Date	Events (M)	Current	Target	Comments	Files	PS Trigs (M)
110841		39	200				6.34
110842		112					17.42
110843		189					30.72
110844		185					29.98
110845		210					33.95
110846		138					22.14
110847		191					30.89
110848		126					20.3
110849		185					29.92
110850		254					41.09
110851		70					11.19
110852		268					43.13
110853		231					37.42
110854		218					34.93
110855		197					31.88
110856		204					33.01
110857		242					39.21
110858		215					34.69

110859		204				33.21
110860		222				35.89
110861		86				13.98
110862		3				0.34
110863		32				5.28
110864		270				43.91
110865		220				35.32
110866		174				28.26
110867		85				13.39
110868		67				10.91
110869		91				14.62
110870		17				2.63
110871		195				31.74
110872		307				49.91
110873		297				48.23
110874		228				36.98
110875		158				25.12
110876		136				21.96
110877		222		check file 023		35.52
110878		123		check file 030		19.49
110879		301				48.83
110881		239				38.57
110882	9/23	35				5.57
110896	9/25	232				37.58
110897		209				33.77
110899		7				1.12
110900		56				9.06
110901		97				15.66
110902		38				6.21
110903		64				10.39
110904		110				17.9
110905		24				3.87

Total

7823

1263.43

**Production on empty He target, 200 nA (Solenoid ON)**

<b>Run</b>	<b>Date</b>	<b>Events (M)</b>	<b>Current</b>	<b>Target</b>	<b>Comments</b>	<b>Files</b>	<b>PS Trigs (M)</b>
110907	9/35	55					24.17
110909		66					29.06
110910		66					28.77
110911		27					12.03
110912		108					47.48
110913		92					40.23
110914		33					14.18
110915		11					4.67
110916		20					8.86
110917		108					47.61
110918		108					47.6
110919		82					35.88
110920		47					20.59
110921		68					29.5
110922		108					47
110923		97					42.25
110924		101					44.2
110925		111					48.35
110926		88					38.13
110927		68					29.3
Total		1464					639.86

**Production on He target, 200 nA (Solenoid ON)**

<b>Run</b>	<b>Date</b>	<b>Events (M)</b>	<b>Current</b>	<b>Target</b>	<b>Comments</b>	<b>Files</b>	<b>PS Trigs (M)</b>
110929	9/28	343	200	LHe			55.69
110930		245					39.22

110931		301				48.08
110932		281				45.1
110933		38				6.07
110934		287				46.21
110935		320				51.39
110936		338				54.39
110937		7				1.09
110942	10/1	289				
110943		299				
110944		269				
110945		179				
110946		319				
110949		83				
110950		317				
110951		39			DAQ issue	
110953		264				
110954		260				
110955		311				
110956		7				
110957		294				
110958		244				
110959		340				
110960		151				
110961		300				
110962		296				
110963		49			unstable beam positions	
110964		153			unstable beam positions	
110965		285				
110966		71				
110967	10/4	134				
110968		308				
110969		10				
110970		282				
110971		277				

110972		275					
110973		44					
110987	10/9 4:20	53			TOF adc		
110988		356			TOF adc		
110989		268			TOF adc		
110990		101			TOF adc		
110991	10/9 14:00	108			CDC voltages		
110993		223					
110994		9					
110995		111					
110996		276					
110997		305					
110998		243					
110999		146					
111000		157					
111001		284					
111002		290					
111003		231					
111004		287					
111005		113					
111006		330					
111007		337					
111008		323					
111009		285					
111010	10/11 8:36	45					

Total

13190

347.24

**Production on empty He target, 200 nA (Solenoid ON)**

Run	Date	Events (M)	Current	Target	Comments	Files	PS Trigs (M)
111013	10/11 9:11	109					
111014		57					

111015		113					
111016		118					
111017		108					
111018		127					
111019		42					
111020		124					
111021		119					
111022		123					
111023		19					
111024		123					
111025		63					
111026		62					
111027		41					
111028		39					
111030		100					
111031		125					
111032		122					
111033		88					
111034		78					
111035		58					
111036		119					
111037		118					

Total 2195

Summary 2019 / 2021 / 2022

Conditions	He						Be					
	Target			Empty			Target			Empty		
	2019	2021	2022	2019	2021	2022	2019	2021	2022	2019	2021	2022
200 nA	39991	2045		3288	250		2789	2550	4706	643	236	485

