

TrueBeam #H193529

保守点検報告書

対象周期: Q4

点検日: 2024/6/20~2024/6/21

点検者: 岡崎 野村

Fil. Hrs: 17,308.80 Beam. Hrs: 1,696.10

特記事項

定期点検Q4(4/4回目)を実施いたしました。

【特記事項】

- Field Lightの定期交換を実施。
交換後、照射野をお客様にご覧いただき精度に問題ないことを確認いたしました。
- MLC動作テストを実施。結果より以下のリーフに対して処置を実施いたしました。
A22 B11(Leaf Motor、Screw、T-Nutの交換、リーフの清掃)
A28 B25(T-Nut交換、リーフの清掃)
A25(リーフの清掃)
- 装置内冷却水の定期交換を実施。
- Gantry Bearingへのグリス注油を実施。

以上装置の正常動作を確認いたしました。

CHECKLIST SHEET REV: 05 PMP Active: True ACCEPTANCE DATE: 8/10/2018
 SITE: NHO SHIKOKU CANCER CENTER CITY: EHIME 791-0280 COUNTRY: Japan
 PCSN: H193529 PRINT DATE: 6/28/2024
 REP NAME : Takuya Nomura FILAMENT HOURS: 17308.8 BEAM HOURS: 1696.1
 Color Coding: Dark Green = Recently completed, Green = Within period, Yellow = Pending, Red = Overdue
 Abbreviaton: NA= Not Applicable, TR= Task Responsibility

Comments: Note, comments here are for information only. Use standard process for initiating and controlling follow up tasks

【特記事項】,6/28/2024,Takuya Nomura

- ・Field Lightの定期交換を実施。 ,6/28/2024,Takuya Nomura
 交換後、照射野をお客様にご覧いただき精度に問題ないことを確認いたしました。 ,6/28/2024,Takuya Nomura
- ・MLC動作テストを実施。結果より以下のリーフに対して処置を実施いたしました。 ,6/28/2024,Takuya Nomura
 A22 B11(Leaf Motor、Screw、T-Nutの交換、リーフの清掃),6/28/2024,Takuya Nomura
 A28 B25(T-Nut交換、リーフの清掃),6/28/2024,Takuya Nomura
 A25(リーフの清掃),6/28/2024,Takuya Nomura
- ・装置内冷却水の定期交換を実施。 ,6/28/2024,Takuya Nomura
- ・Gantry Bearingへのグリス注油を実施。 ,6/28/2024,Takuya Nomura

Checklist	Date Completed	Target Date	HaspUser	TR
6 PMP Pre-Site Preparation				
6.1 Review PMP Checklist	6/20/2024	10/18/2024	Takuya Nomura	Varian
6.2 Customer Interview	6/20/2024	10/18/2024	Takuya Nomura	Varian
6.3 Review ViDA / Event Logs	6/20/2024	10/18/2024	Takuya Nomura	Varian
7 Initial Tasks				
7.1 Check Initial Beam Performance	6/20/2024	10/18/2024	Takuya Nomura	Varian
7.2 Capture Data in the HET PMI Application	6/21/2024	10/19/2024	Takuya Nomura	Varian
7.3 Analyze/Compare Data in the PMI Application	6/21/2024	10/19/2024	Takuya Nomura	Varian
7.4 Review Initialization, Calibration, Fault Frequency	3/22/2024	11/17/2024	Takuya Nomura	Varian
8 Emergency Stop (EMS) Operation				
8.1 Test Emergency Operations with Side Panel and Service Pendant	6/21/2024	10/19/2024	Takuya Nomura	Varian
8.2 Test EMS Switches and Emergency Disconnect	3/22/2024	11/17/2024	Takuya Nomura	Varian
9 Clean and Inspect				
9.1 Clean and Inspect Console Cabinets	3/21/2024	11/16/2024	(*)Takuya Nomura	Varian
9.2 Clean and Inspect Stand	3/21/2024	11/16/2024	(*)Takuya Nomura	Varian
9.3 Clean and Inspect Gantry	6/21/2024	2/16/2025	Takuya Nomura	Varian
9.4 Clean and Inspect Modulator	3/21/2024	11/16/2024	(*)Takuya Nomura	Varian
10 Console				
10.1 Verify Cooling Fans/Power Supply Operation	6/21/2024	10/19/2024	Takuya Nomura	Varian
10.2 Test UPS Operation	3/21/2024	3/21/2025	(*)Takuya Nomura	Varian
11 Stand				
11.1 Verify Stand Fans Operation	3/22/2024	11/17/2024	Takuya Nomura	Varian
11.2 Inspect SVC Pulse Tank Desiccant	3/22/2024	11/17/2024	Takuya Nomura	Varian
11.3 Inspect Stand Water Flow Meters	3/22/2024	11/17/2024	Takuya Nomura	Varian
11.4 Test Gantry Brake Operation	3/22/2024	11/17/2024	Takuya Nomura	Varian
11.5 Inspect Gantry Rotation Drive Motor Chain and Sprocket	3/22/2024	11/17/2024	Takuya Nomura	Varian
11.6 Inspect Gantry Chain Master Link	3/22/2024	11/17/2024	Takuya Nomura	Varian
11.7 Inspect Gantry Chain Tension	9/29/2023	9/28/2024	Takuya Nomura	Varian
11.8 Replace Water System Filter Cartridge	9/29/2023	9/28/2024	Takuya Nomura	Varian
11.9 Measure/Compare Klystron Parameters	3/22/2024	11/17/2024	Takuya Nomura	Varian
12 Gantry				
12.1 Inspect Counterweight Mounting Bolts	6/20/2024	6/20/2025	Takuya Nomura	Varian
12.2 Verify Gantry Fan Operation	6/20/2024	2/15/2025	Takuya Nomura	Varian
12.3 Inspect Gantry Flow Meters	6/20/2024	2/15/2025	Takuya Nomura	Varian
12.4 Inspect Gantry Water Hoses	6/20/2024	2/15/2025	Takuya Nomura	Varian
12.5 Inspect Gantry Windup	6/20/2024	2/15/2025	Takuya Nomura	Varian
12.6 Measure/Compare Motor and Node Power Supply Voltage	6/20/2024	2/15/2025	Takuya Nomura	Varian
12.7 Measure/Compare Vacion Pump Current and Voltage	6/21/2024	2/16/2025	Takuya Nomura	Varian

12.8	Measure/Compare BMAG Coil Voltage	6/20/2024	6/20/2025	Takuya Nomura	Varian
12.9	Inspect Skull Cap Fasteners	6/20/2024	2/15/2025	Takuya Nomura	Varian
12.10	Measure/Compare ASOL Coil Voltage	6/20/2024	6/20/2025	Takuya Nomura	Varian
12.11	Inspect Energy Switch Assembly	6/21/2024	2/16/2025	Takuya Nomura	Varian
13 Gun Driver					
13.2	Verify HV Warning Lights and CroBar Operation	6/20/2024	2/15/2025	Takuya Nomura	Varian
13.3	Verify Cooling Fans Operation	6/20/2024	2/15/2025	Takuya Nomura	Varian
13.4	Measure/Compare Gun Driver Parameters	6/20/2024	2/15/2025	Takuya Nomura	Varian
13.5	Clean and Inspect Gun Driver	6/21/2024	2/16/2025	Takuya Nomura	Varian
14 Carousel					
14.1	Clean and Inspect Carousel Assembly	6/20/2024	2/15/2025	Takuya Nomura	Varian
14.2	Clean and Inspect Carousel Transverse Axis Resolver	6/20/2024	2/15/2025	Takuya Nomura	Varian
14.3	Clean and Inspect Carousel Radial Axis Resolver	6/20/2024	2/15/2025	Takuya Nomura	Varian
14.4	Clean and Lubricate Carousel Radial Axis Lead Screw	12/14/2023	12/13/2024	Yasutaka Tanaka	Varian
14.5	Inspect Ion Chamber Assembly	6/20/2024	2/15/2025	Takuya Nomura	Varian
14.6	Clean and Lubricate Ion Chamber Lead Screw	12/14/2023	12/13/2024	Yasutaka Tanaka	Varian
14.7	Clean and Lubricate Carousel and Ion Chamber Bearing	6/20/2024	2/15/2025	Takuya Nomura	Varian
14.8	Clean and Inspect Target Drive Assembly	6/20/2024	2/15/2025	Takuya Nomura	Varian
14.9	Initialize Carousel Axes	6/20/2024	2/15/2025	Takuya Nomura	Varian
14.10	Replace Field Lamps	6/20/2024	6/20/2025	Takuya Nomura	Varian
15 MLC					
15.1	Inspect and Lubricate MLC	3/22/2024	11/17/2024	Takuya Nomura	Varian
15.2	Measure MLC Power Supply Voltages	3/22/2024	11/17/2024	Takuya Nomura	Varian
15.3	initialize MLC	6/20/2024	10/18/2024	Takuya Nomura	Varian
15.4	Verify Backlash v2.5	NA	Option is not installed/included	Yuuichi Fukuhara	
16 Automated Diagnostic Tests					
16.2	Perform v2.7 Automated Diagnostic Tests	3/22/2024	11/17/2024	(*)Takuya Nomura	Varian
16.3	Perform v2.5 Automated Diagnostic Tests	NA	Option is not installed/included	Yuuichi Fukuhara	
16.4	Perform v3.0 Auto Performance Test (ATP)	NA	Option is not installed/included	Yasutaka Tanaka	
17 Collimator					
17.1	Inspect Collimator	6/21/2024	2/16/2025	Takuya Nomura	Varian
17.2	Lubricate Lower Jaws	3/21/2024	3/21/2025	(*)Takuya Nomura	Varian
17.3	Lubricate Upper Jaws	3/21/2024	3/21/2025	(*)Takuya Nomura	Varian
17.4	Lubricate Collimator Rotation Bearing	3/21/2024	3/21/2025	(*)Takuya Nomura	Varian
18 Accessories					
18.1	Inspect Accessory Mount	3/22/2024	11/17/2024	Takuya Nomura	Varian
18.2	Inspect and Test Electron Applicators	3/22/2024	11/17/2024	Takuya Nomura	Varian
18.3	Inspect Wedges	NA	Customer responsible task	Yuuichi Fukuhara	
18.4	Check LaserGuard Alignment	NA	Customer responsible task	Yuuichi Fukuhara	
19 Couch					
19.2	Inspect IGRT Couch Top	3/22/2024	11/17/2024	Takuya Nomura	Varian
19.3	Clean and Inspect Lower Couch Area	3/22/2024	11/17/2024	Takuya Nomura	Varian
19.4	Clean, Inspect and Lubricate Lift Drive	3/22/2024	11/17/2024	Takuya Nomura	Varian
19.5	Clean, Inspect and Lubricate LNG/LAT Carriage Rails	3/22/2024	11/17/2024	Takuya Nomura	Varian
19.6	Clean and Inspect Couch Longitudinal Encoder and Cables	3/22/2024	11/17/2024	Takuya Nomura	Varian
19.7	Clean, Inspect and Lubricate Perfect Pitch Couch	3/22/2024	11/17/2024	Takuya Nomura	Varian
19.8	Test Couch Pendants and Side Panels	3/22/2024	11/17/2024	Takuya Nomura	Varian
19.9	Clean, Inspect and Lubricate Couch Turntable	3/22/2024	3/22/2025	Takuya Nomura	Varian
20 Modulator					
20.2	Verify Cooling Fans Operation	3/22/2024	11/17/2024	Takuya Nomura	Varian
20.3	Test High Voltage Crowbar Operation	3/22/2024	11/17/2024	Takuya Nomura	Varian
20.4	Measure/Compare Modulator Parameters	3/22/2024	11/17/2024	Takuya Nomura	Varian
21 Imaging System					
21.1	Collect XI Diagnostic Data	6/21/2024	10/19/2024	Takuya Nomura	Varian
21.2	Clean and Inspect KV Generator	3/22/2024	11/17/2024	Takuya Nomura	Varian
21.3	Verify Cooling Fans Operation	3/22/2024	11/17/2024	(*)Takuya Nomura	Varian
21.4	Verify Imaging Arms Positioning	3/22/2024	11/17/2024	(*)Takuya Nomura	Varian
21.5	Clean and Inspect Imaging Arms	3/22/2024	11/17/2024	Takuya Nomura	Varian

21.6	Clean and Inspect KVS Collimator and Filter Deck	3/22/2024	11/17/2024	Takuya Nomura	Varian
21.7	Verify Imaging Arms Motion Control Safety	3/22/2024	11/17/2024	Takuya Nomura	Varian
21.8	Inspect X-Ray Tube and Heat Exchanger	3/22/2024	11/17/2024	Takuya Nomura	Varian
21.9	Clean, Inspect and Grease HT Cable Candlesticks at X-Ray Tube	3/22/2024	11/17/2024	Takuya Nomura	Varian
21.10	Inspect HT Cable Candlesticks at EMD Generator	9/29/2023	9/28/2024	(*)Takuya Nomura	Varian
21.11	Record Norm Chamber Values	3/22/2024	11/17/2024	(*)Takuya Nomura	Varian
21.12	Verify IsoCal	3/22/2024	11/17/2024	(*)Takuya Nomura	Varian
21.13	Compare MVD, KVD and KVS Reference Positions	3/22/2024	11/17/2024	(*)Takuya Nomura	Varian
21.14	Acquire Motion Records from MVD, KVD and KVS	NA	Option is not installed/included	Yasutaka Tanaka	
22 Tune Dose Rate and Compare Parameter Data					
22.1	Test MU Backup Counter	6/21/2024	10/19/2024	Takuya Nomura	Varian
22.2	Tune Dose Rate and Capture Data	3/22/2024	11/17/2024	(*)Takuya Nomura	Varian
22.3	Test Unservoed Output vs Rotation	6/21/2024	2/16/2025	Takuya Nomura	Varian
22.4	Inspect Waveforms	6/21/2024	2/16/2025	Takuya Nomura	Varian
23 Final PMP Items					
23.1	Finalize HET PMI Program	6/21/2024	10/19/2024	Takuya Nomura	Varian
23.2	Replace Barcode Reader Batteries	NA	Function/feature disabled by customer	Yuuichi Fukuhara	
23.3	Initialize Axes	6/21/2024	10/19/2024	Takuya Nomura	Varian
23.4	Install and Inspect Covers	6/21/2024	10/19/2024	Takuya Nomura	Varian
23.5	Clean Covers	3/22/2024	11/17/2024	(*)Takuya Nomura	Varian
23.6	Backup Nodes, System, Preference Settings	3/22/2024	11/17/2024	(*)Takuya Nomura	Varian
23.7	Manage Saved Parameter Data	3/22/2024	11/17/2024	(*)Takuya Nomura	Varian
23.8	Distribute Official PMP Checklist	6/21/2024	10/19/2024	Takuya Nomura	Varian
23.9	Test Clinical Operation	6/21/2024	10/19/2024	Takuya Nomura	Varian
23.10	Review Low Frequency Tasks	6/21/2024	10/19/2024	Takuya Nomura	Varian
23.11	Review Follow-up Actions	6/21/2024	10/19/2024	Takuya Nomura	Varian
23.12	Clean Work Area	6/21/2024	10/19/2024	Takuya Nomura	Varian
24 Calypso					
24.1	Complete 8 Month Tasks in Calypso PMI and Checklist	NA	Option is not installed/included	Yuuichi Fukuhara	
24.2	Complete 12 Month Tasks in Calypso PMI and Checklist	NA	Option is not installed/included	Yuuichi Fukuhara	
25 OSMS					
25.1	Complete 6 Month Tasks in OSMS PMI and Checklist	NA	Option is not installed/included	Yuuichi Fukuhara	
25.2	Complete 12 Month Tasks in OSMS PMI and Checklist	NA	Option is not installed/included	Yuuichi Fukuhara	
26 Low Frequency Tasks					
26.2	Replace Distilled Water and Clean Strainer (2 Years)	6/21/2024	6/21/2026	Takuya Nomura	Varian
26.3	Replace Emergency Operations Batteries (2 Years)	NA	Option is not installed/included	Takuya Nomura	
26.4	Lubricate Gantry Bearing (2 Years)	6/21/2024	6/21/2026	Takuya Nomura	Varian
26.5	Measure Generator Output (2 Years)	9/30/2022	9/29/2024	Takuya Nomura	Varian
26.6	Backup TrueBeam and Service Workstations (2 Years)	3/03/2023	3/02/2025	Yasutaka Tanaka	Varian
26.7	Replace Rangefinder Lamp (4 Years)	9/30/2022	9/29/2026	Takuya Nomura	Varian
26.8	Replace VMS-200 X-Ray Generator Fans (5 Years)	NA	Option is not installed/included	Yasutaka Tanaka	
26.9	Replace IGMA Workstation Batteries (5 Years)	6/16/2023	6/14/2028	Yasutaka Tanaka	Varian
26.10	Replace VMS-200 X-Ray Generator CPU Battery (5 Years)	NA	Option is not installed/included	Yasutaka Tanaka	
26.11	Replace Modulator T4-C1 Capacitor (5 years)	6/16/2023	6/14/2028	Yasutaka Tanaka	Varian
26.12	Replace Interface Mount Guide Blocks (7 Years)	No_date_yet	8/08/2025		Varian
26.13	Replace Gantry and Stand Hoses (10 Years)	No_date_yet	8/07/2028		Varian

PARAMETER SHEET																	
MODULATOR																	
Parameters	Tolerance	Value	Parameters	Tolerance	Value												
3 Phase input AB	±3 %	206.10	Main Thyatron Fil	±0.2 %	6.32												
3 Phase input AC	±3 %	209.20	Dging Thyatron Fil	±0.2 %	6.31												
3 Phase input BC	±3 %	208.10	Keep-Alive	≤23 VDC	18.24												
Plate XFMR Tap	NA	5.00															
STAND and POWER SUPPLIES																	
Parameters	Tolerance	Value	Parameters	Tolerance	Value	Parameters	Tolerance	Value									
Klystron SN	NA	21564	KLY I (Lo-X) (J1 @ Pulse Tank)	NA	6.48	KLY V Backswing Percentage (Lo-X)	NA	17.96									
KFIL V	NA	236.70	KLY V (Lo-X) (J2 @ Pulse Tank)	NA	4.12	PFN V Actual (Lo-X)	NA	6.31									
KSOL I	NA	38.92	KLY I (Hi-e) (J1 @ Pulse Tank)	NA	8.56	PFN V Actual (Hi-e)	NA	7.96									
KSOL V	NA	106.19	KLY V (Hi-e) (J2 @ Pulse Tank)	NA	4.96	KLY I Comman Cal Factor (Amps/Volt)	NA	3.45									
VACUUM POWER SUPPLY																	
Parameters	Tolerance	Meter uA	Tolerance	Meter kW	Probe kW												
ACC PUMP	±20 uA	0.00	NA	-5.25	-5.20												
GUN PUMP	±20 uA	0.00	NA	3.23	3.24												
KLY PUMP	±20 uA	0.32	NA	3.23	3.20												
WATER and SF6																	
Parameters	Tolerance	Value	Parameters	Tolerance	Value												
System Water Pressure	NA	50.00	SF6 Regulator	NA	28.02												
Facility Water Pressure	NA	42.00	SF6 Fault level	NA	24.95												
OverTemp Trip	NA	42.00	SF6 Warning level	NA	27.97												
WATER FLOW and TEMPERATURE																	
Parameters	BMAG Flow	LGuide Flow	SGuide Flow	PriColl Flow	Target Flow	City Water Flow	Klystron Flow	Klys Sol Flow	Guide Flow	PumpOutlet T ^a	TankInput T ^a	City Water T ^a	Motor Valve	Pump Speed			
Standby	0.60			1.19	0.87	10.65	5.07	4.04	3.21	39.74	40.58	18.99	37.04	44.99			
ON	0.72			1.42	1.05	10.82	6.06	4.83	3.80	40.26	40.84	18.87	41.43	79.97			
POWER SUPPLIES (GPD, SPD, APD)																	
Parameters	GPD_24V	GPD_28V	SPD_5VP	SPD_24VP	SPD_28VP	SPD_48VP	SPD_3.3VP	SPD_EMO	SPD_24VBAT	CoreBiasI	CoreBiasV	APD_12VP	APD_24V	APD_28V			
Standby	23.49	27.79		23.80	27.91	47.86	3.28	26.15		0.22		12.02	23.61	0.03			
ON	23.49	27.70		23.80	27.88	47.86	3.28	26.20		0.22		12.02	23.58	0.03			
POWER SUPPLIES (BGM, DMD)																	
Parameters	BGM_5V	BGM_15VP	BGM_15NVP	BGM_24VP	BGM_N12VP	BGM_3.3VP	DMD_1.5VP	DMD_3.3VP	DMD_5VP	DMD_NSVA	DMD_PSVA	DMD_15VP	DMD_24VP	DMD_EMO24			
Standby	5.00	4.96	5.04	23.56	12.18	3.28	1.48	3.30	4.99	-5.02	4.94	14.83	23.92	23.89			
ON	5.00	4.96	5.04	23.55	12.18	3.28	1.48	3.30	5.00	-5.02	4.94	14.83	23.92	23.89			
POWER SUPPLIES (Console PU Motors)																	
Parameters	CONTPWRA	CONTPWRB	Console 220	EMO PS	Live24V	24V Node	28V Motor	48V PU	96V PU								
Values	116.70	117.20	212.50	24.52	23.75	23.83	27.90	48.11	96.40								
RF DRIVER																	
Parameters	Tolerance	Value	Parameters	Tolerance	Value												
RF Driver SN	NA	2241112	Sensitivity	NA	-215.00												
Center Freq	NA	2856.600															
BOARD TEMPERATURE																	
Nodes	STN	BGM	COL	MOD	PWM	RFSPS	CCHU	CCHL	KVS	KVD	MVD	XI	EGN				
Temperatures	37.38	31.55	36.43	37.82	31.85	37.29	34.44	33.47	29.80	30.08	27.59	55.65	48.15				
GANTRY																	
Parameters	Tolerance	Value	Parameters	Tolerance	Value												
ASOL Short Coil (Hi-X)	±3 %	93.68	Gun Fil V	NA	5.40												
ASOL Long Coil (Hi-X)	±3 %	43.63	Gun Fil I	NA	3.64												
ASOL PS Current (Hi-X)	±3 %	17.90	Gun 5V	NA	NA												
ASOL PS Voltage (Hi-X)	NA	145.50	Gun 15V	NA	NA												
BMAG E1-E2 (Hi-X)	±0.2 %	1.74	Gun -15V	NA	NA												
BMAG E3-E4 (Hi-X)	±0.2 %	1.74															
BGM																	
DOSIMETRY																	
Parameters	2.5x	4x	6x	6xFFF	10x	10xFFF	6e	6eHDTSE	9e	12e	15e	NA	NA	NA	NA	NA	NA
Buncher R	0.07	0.04	0.01	0.01	0.02	0.02	-0.23	-0.23	-0.51	0.26	0.24						
Buncher T	0.09	0.08	0.12	0.12	0.17	0.17	-0.11	-0.17	0.01	0.43	0.28						
Angle R	0.00	-0.02	0.03	0.04	0.03	0.05	-0.14	-0.12	-0.09	-0.42	-0.40						
Angle T	0.05	0.07	0.12	0.22	0.23	0.34	-0.10	-0.06	-0.24	0.25	-0.06						
Position R	-0.42	-0.69	-1.38	-1.41	-1.38	-1.32	0.00	0.00	0.00	0.00	0.00						
Position T	0.66	0.14	0.49	0.46	0.34	0.30	0.00	0.00	0.00	0.00	0.00						
Trim	-0.05	-0.07	-0.03	-0.04	0.04	0.04	0.00	0.00	0.00	0.00	0.00						
Bal ANG R	0.982	0.975	0.980	0.976	0.980	0.974	0.895	0.902	0.908	0.732	0.840						
Bal ANG T	1.029	1.025	1.026	1.032	1.028	1.032	1.007	1.014	0.963	1.064	1.025						
Bal POS R	0.842	0.875	0.906	0.887	0.918	0.915	1.000	1.000	1.000	1.000	1.000						
Bal POS T	0.991	1.077	1.077	1.093	1.075	1.080	1.000	1.000	1.000	1.000	1.000						
Symmetry R	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
Symmetry T	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
Nominal IonA	0.117	0.375	0.981	1.121	1.034	1.396	3.479	4.872	2.217	1.658	1.647						
Nominal IonB	0.119	0.385	1.001	1.148	1.055	1.433	3.889	5.401	2.442	2.265	1.961						
Nominal IonC	0.113	0.367	0.943	1.137	0.973	1.400	3.744	5.262	2.436	2.182	1.940						
Nominal IonD	0.110	0.358	0.918	1.103	0.946	1.357	3.719	5.191	2.529	2.051	1.893						
Nominal IonE	0.010	0.044	0.127	0.135	0.145	0.181	0.202	0.289	0.073	0.048	0.050						
Nominal IonF	0.012	0.051	0.140	0.152	0.158	0.198	0.279	0.398	0.093	0.068	0.065						
Nominal IonG	0.015	0.059	0.160	0.178	0.176	0.223	0.255	0.369	0.081	0.076	0.074						
Nominal IonH	0.015	0.054	0.149	0.163	0.163	0.206	0.247	0.356	0.090	0.060	0.073						
Nominal IonI	0.031	0.092	0.244	0.334	0.264	0.444	1.642	2.246	1.910	2.006	1.748						
Nominal IonJ	0.028	0.081	0.214	0.311	0.228	0.408	1.252	1.727	1.522	1.622	1.411						
Nominal Target	305.67	235.56	356.18	344.04	156.50	169.40	0.00	0.00	0.00	0.00	0.00						
Nominal FPWR	0.749	0.935	1.140	1.119	1.206	1.222	1.196	1.175	1.261	1.308	1.699						
Target I	288.36	226.05	353.61	346.62	156.63	167.92	-0.18	-0.16	-0.18	-0.22	-0.17						
Cal MU1	0.010	0.013	0.013	0.025	0.012	0.034	0.010	0.010	0.014	0.016	0.017						
Cal MU2	0.010	0.013	0.014	0.024	0.013	0.035	0.010	0.010	0.014	0.016	0.018						
DoseRate	64.66	275.16	582.43	1326.40	578.63	1339.90	564.78	2648.10	574.58	584.53	554.63						

BGM AXES																	
Parameters	2.5x	4x	6x	6FFF	10x	10FFF	6e	6eHDTSE	9e	12e	15e	NA	NA	NA	NA	NA	NA
Pos Y-Axis	5.00	4.95	5.05	5.00	5.06	5.00	150.00	150.00	150.30	149.39	149.97						
Pos Rotation	327.53	147.47	207.52	327.53	87.49	327.53	267.53	267.53	246.42	108.66	101.60						
Pos Ion Chamber	203.20	203.20	203.20	203.20	203.20	203.20	203.20	203.20	203.20	203.20	203.20						
Pos Target	70.00	27.00	27.00	27.00	46.00	58.00	3.50	3.50	3.50	3.50	3.50						
Pos ENSW	11.70	10.80	10.51	10.51	9.35	9.35	27.00	27.00	27.00	27.00	27.00						
Port	Port 1	Port 4	Port 3	Port 1	Port 5	Port 1	Foil 8	Foil 8	Foil 9	Foil 1	Foil 2						
BGM RF/COILS																	
Parameters	2.5x	4x	6x	6FFF	10x	10FFF	6e	6eHDTSE	9e	12e	15e	NA	NA	NA	NA	NA	NA
PFN V Set	6.32	6.32	6.32	6.32	6.32	6.32	6.32	6.32	6.32	6.32	8.00						
PFN V	6.38	6.36	6.32	6.32	6.33	6.32	6.30	6.34	6.32	6.32	7.98						
PFN Current	2.22	2.20	1.72	1.78	1.72	1.19	1.28	2.03	1.28	1.28	1.53						
AFC V	-5.07	-1.40	0.70	0.70	3.84	3.84	6.36	6.73	6.47	6.12	6.70						
AFC Bal	0.052	0.077	0.119	0.094	0.130	0.119	0.042	0.051	0.048	0.053	0.085						
ASOL V	113.65	82.43	143.62	146.12	143.22	145.48	144.07	147.25	157.68	106.34	62.79						
ASOL I	14.09	10.19	18.00	18.00	17.84	17.84	17.60	17.85	19.19	12.90	7.62						
BMAG V	0.92	1.71	2.24	2.25	3.82	3.85	2.63	2.62	3.65	4.86	6.01						
BMAG I	6.70	12.35	16.25	16.20	27.52	27.60	18.85	18.70	26.15	34.70	42.80						
RF Driver Freq																	
RF Driver Watts																	
RF Driver Console	1.82	2.36	3.25	3.14	3.58	3.70	3.50	3.33	3.94	4.32	2.81						
BGM GUN/TIMING																	
Parameters	2.5x	4x	6x	6FFF	10x	10FFF	6e	6eHDTSE	9e	12e	15e	NA	NA	NA	NA	NA	NA
Pulse Width	0.050	0.049	0.046	0.046	0.042	0.040	0.050	0.045	0.050	0.050	0.050						
Delay	0.004	0.005	0.005	0.006	0.011	0.011	0.007	0.023	0.006	0.006	0.008						
Gun Grid	107.48	112.90	104.71	101.26	45.60	51.12	27.14	31.78	9.87	3.06	12.44						
Gun HV Meter	-17966.00	-17966.00	-15973.00	-15973.00	-9990.00	-9990.00	-5495.00	-5989.00	-5007.00	-5007.00	-2997.00						
Gun HV Probe																	
OUTPUT VS ROTATION																	
Parameters	2.5x	4x	6x	6FFF	10x	10FFF	6e	6eHDTSE	9e	12e	15e	NA	NA	NA	NA	NA	NA
Max Dose	67.52		591.55				691.34										
Min Dose	63.02		583.88				676.79										
Deviation Percentage	6.86		1.31				2.13										
Lowest DR Angle	0.00		136.00				267.00										
Higest DR Angle	357.00		355.00				355.00										
CONMAN WAVEFORM MEASUREMENTS																	
Parameters	2.5x	4x	6x	6FFF	10x	10FFF	6e	6eHDTSE	9e	12e	15e	NA	NA	NA	NA	NA	NA
FWD PWR	0.37	0.47	0.55	0.56	0.59	0.61	0.60	0.57	0.63	0.65	0.82						
TARG I	1.08	0.86	1.24	1.22	0.54	0.61											
KLY I	1.92	1.92	1.96	1.96	1.96	1.96	1.96	1.96	2.00	1.96	2.60						
KLY V	2.20	2.20	2.16	2.20	2.16	2.20	2.20	2.20	2.20	2.20	2.64						
HVPS I (DeQing%)	52.00	51.35	52.63	56.58	55.26	58.44	56.41	53.33	56.41	55.26	48.93						
BGM AXES CALIB																	
Parameters	Y-Stage	Carousel Rot	ENSW	Ion Chamber	Target Drive												
Positive Limit Distance	0.768	9.148	1.325	1.516	1.518												
Negative Limit Distance	154.720	345.810	28.878	205.300	71.122												
Resolver Angle	4537.000	8213.000	13785.000	12722.000	15245.000												
Secondary Resolver Angle	4906.000	12164.000	NA	163.000	8405.000												
Travel Range	155.710	355.060	29.995	209.260	74.051												
Resolver Offset	-52.000	1398.000	206.000	-29.000	33.000												
AXES (Gant,COL,Couch)																	
Parameters	COL ROT	COL X1	COL X2	COL Y1	COL Y2	Parameters	Gantry	CCH VRT	CCH ROT	CCH LAT	CCH LNG	CCH PITCH	CCH ROLL				
DistHardStopB	355.000	9.629	9.628	10.358	10.317	PrimaryOffset	1.115E005	71.406	15142.000	79.953	7.905	-0.100	-0.019				
DistToLimitA	1.684	0.234	0.279	0.237	0.174	PrimaryCountPerUnit	-150.710	805.500	NA	1584.900	249.920	NA	NA				
DistToLimitB	353.450	9.511	9.473	10.110	10.039	SecondaryOffset	893.930	196.050	5560.000	-70.135	-191.760	-0.084	-0.017				
ResolverOffsetCalib	-27.000	-177.000	62.000	-126.000	-72.000	SecondaryCountPerUnit	-7.5199E005	805.440	NA	1584.800	541.230	NA	NA				
PrimaryIsoGain	1.000	2.477	2.480	0.999	0.999	ResolverOffsetCalib	NA	NA	-24.000	-138.000	-16.000	NA	NA				
PrimaryIsoOffset	-0.138	0.341	0.326	0.662	0.589	TertiaryOffset	NA	NA	2226.600	NA	NA	NA	NA				
SecondaryIsoGain	1.000	2.476	2.480	1.000	1.000												
SecondaryIsoOffset	-0.031	0.343	0.326	0.679	0.653												

IMAGING										
Inventory				MV/KV Test Image Chain						
Component	Type	Serial Number	Install Date	Parameter	Value					
X-Ray Tube	GS-1542	18722-M8	OCT-2018	KV Dark Field Image Mean	994.6					
X-Ray Generator	EMD	18-E0173	OCT-2018	KV Noise Image SD	6.9					
MV Imaging Panel	4030CB	P8-A20505-0202	OCT-2018	MV Dark Field Image Mean	675.2362					
MV Imaging Panel	DMI	1393000243	OCT-2018	MV Noise Image SD	4.4					
				MV Drift Image Mean	201.2					
				MV Drift Image SD	163.5					
X-Ray Generator										
Technique	DNC Counts	kVp	mA	mS	Miscellaneous Data	Value				
SF 60kVp 25mA 100ms	117.67	63.60	25.07	97.48	Tube Calibration Date YYYYMMDD	20200904				
SF 90kVp 50mA 100ms	1644.02	98.24	49.23	101.23	DNC Raw ADC Counts	15282				
SF 120kVp 80mA 20ms	1526.52	139.1	79.04	20.33						
LF 60kVp 25mA 100ms	120.07	61.98	25.14	97.49						
LF 90kVp 200mA 20ms	1328.07	99.50	196.2	19.78						
LF 90kVp 200mA 150ms	9976.93	98.38	198.0	149.89						
LF 120kVp 100mA 20ms	1936.70	139.1	99.04	20.33						
LF 120kVp 200mA 100ms	16351	135.0	197.9	100.00						
ARMS										
Parameters	KVD	KVS	MVD	Parameters	Blade X1	Blade X2	Blade Y1	Blade Y2	Foil	Shape
System Calibration VRT	0.102	-0.004	0.047	refPos	2.867	2.863	2.896	2.893	0.115	0.116
System Calibration LONG	0.131	0.121	0.001	distToHardstopA	-0.073	-0.077	-0.044	-0.047	NA	NA
System Calibration LAT	-0.052	0.000	-0.001	distToHardstopB	-3.504	-3.518	-3.557	-3.540	15.009	19.277
Teach Drive Elbow	88.823	120.040	84.963	TravelDist	-3.580	-3.580	-3.580	-3.580	NA	NA
Teach Drive Wrist	230.200	185.030	227.680	axisCalibOffset	0.000	-0.051	-0.084	0.043	0.000	0.172
Axes Cal Shoulder primZeroPhy	199.480	168.500	212.080	distToFocal	10.998	11.001	9.395	9.414		
Axes Cal Elbow distToIndex	6.248	6.910	6.525							
Axes Cal Elbow TerZeroPhy	127.000	98.710	-10.398							
Axes Cal Wrist distToIndex	-15.606	10.089	-15.894							
Axes Cal Wrist TerZeroPhy	278.280	202.520	133.690							
Axes Cal Hand distHardStopB	-36.333	NA	-36.269							
Axes Cal Hand primZeroPhy	-17.618	NA	-17.390							
Axes Cal Hand terZeroPhy	-16.321	NA	-17.602							
Shoulder refPos	343.850	340.140	282.810							
Elbow refPos	18.679	31.444	18.518							
Wrist refPos	338.070	155.910	338.450							
Hand refPos	18.166	NA	18.116							