

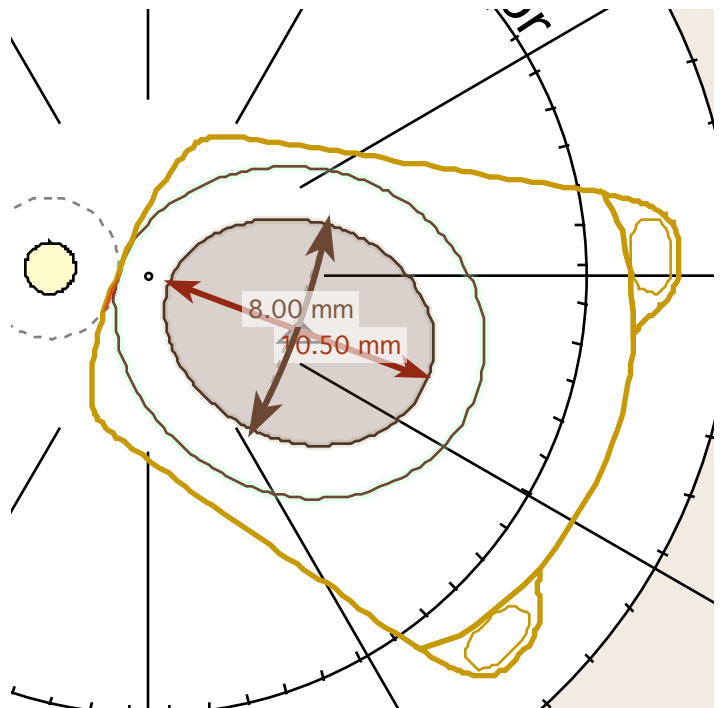
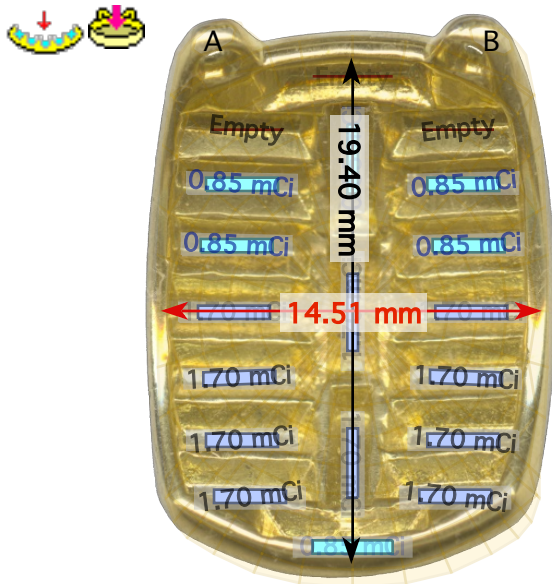
# Plaque Simulator Treatment Plan

Patient name:	Tutorial2021, Posterior	PSID: 26276BFA
Medical record #:	123456	Gender: M
Institution:		
Other:		DOB: Mar 28, 1957
CPT Code(s):	77263	Age: 64 years on 4/21/21
🟡➡️ Plaque insertion:	Wed Apr 21, 2021 at 8:00 AM _____	
🟡➡️ Plaque removal:	Wed Apr 28, 2021 at 8:00 AM _____	
Implant duration:	168.000 hours	Range: ± 3.36 hr (2.0%)
🌸 Prescription:	85.00 Gy to axis of tumor 1 @ 4.30 mm (dist. from inner sclera = 4.30 mm)	Left eye
BED at Rx point:	Acute = 137.38 Gy(10.0), Late = 180.26 Gy(3.0)	Therapeutic ratio = 0.76

Plaque:	1 (EP1719-24-e-p-f) (Rx)
Nominal size:	19.4 x 14.5 mm
Suture coordinates:	(2:56,8.6 mm) and (4:32,8.6 mm)
Number of sources:	* 16 (with 2 different strengths or types)
🌸 Total strength:	* I-125 (IAI-125A) 28.08 U (22.11 mCi) on 4/21/21
🌸 Avg. strength:	* 1.755 U (1.382 mCi) on 4/21/21

Tumor #:	1
Apex height:	3.80 mm
Base expansion margin:	2.00 mm
Radial x Circumferential:	10.50 x 8.00 mm
Length x Width:	10.50 x 8.00 mm
Area (Volume):	69.8 sq.mm (0.154 cc)

EP1719-24-e



\* See plaque loading instructions document for seed strengths.



# Plaque Simulator Treatment Plan

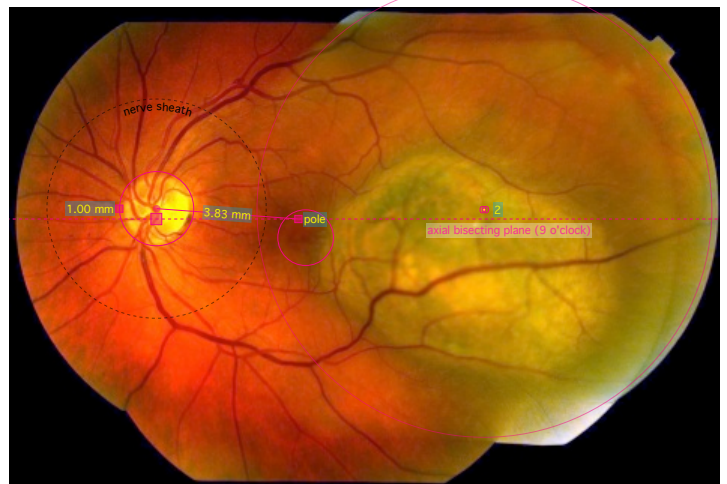
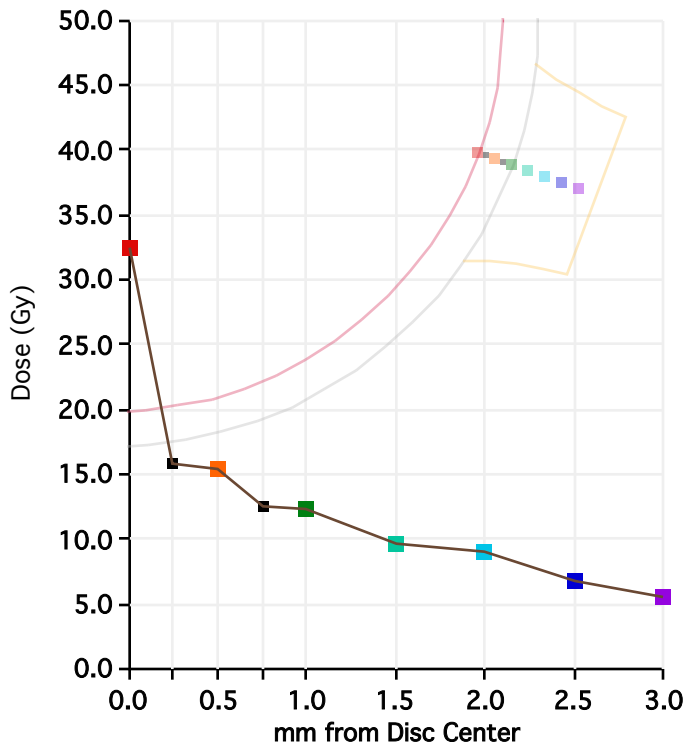
Tumor 1 Tax (mm)	Avg. Dose Rate (cGy/hr)	Total Dose (Gy)	
0.00 Ext. sclera	85.30	143.3	
1.00 Inner sclera	110.0	184.8	
2.00	98.53	165.5	
3.00	82.04	137.8	
4.00	66.81	112.2	
5.00	53.95	90.63	
6.00	43.66	73.34	
7.00	35.59	59.78	
8.00	29.30	49.23	
9.00	24.29	40.81	
10.00	20.19	33.92	

Critical Site	Avg. Dose Rate (cGy/hr)	Total Dose (Gy)	Distances & metrics for plaque #1 (mm from plaque center) [plaque coordinates]
Rx: axis of tumor 1 @ 4.30 mm	50.60	85.00	5.789 [5.53,-0.12,-1.72]
Sclera	118.5	199.1	1.000 [1.00,0.00,0.00]
QA_Point	41.95	70.48	6.000 [6.00,0.00,-0.00]
QA_Check (isotropic pt srce in water)	43.68	73.38	QA_Point / QA_Check = 0.96
Disc center (DC)	19.34	32.50	12.80 [7.78,1.15,-10.09]
Nerve (1mm from DC on nerve axis)	7.304	12.27	13.32 [7.40,1.26,-11.01]
Opposite retina	3.648	6.129	22.48 [22.48,0.00,0.00]
Lens center	5.635	9.466	18.08 [17.15,0.00,5.75]
Eye origin	14.28	24.00	12.00 [12.00,0.00,0.00]
Fovea	82.44	138.5	9.086 [4.40,0.39,-7.94]
Apex of tumor #1	56.32	5.373 [5.04,-0.12,-1.85]	

Dose calc. parameters: Line, F[Ø], B[r], PE, Slot

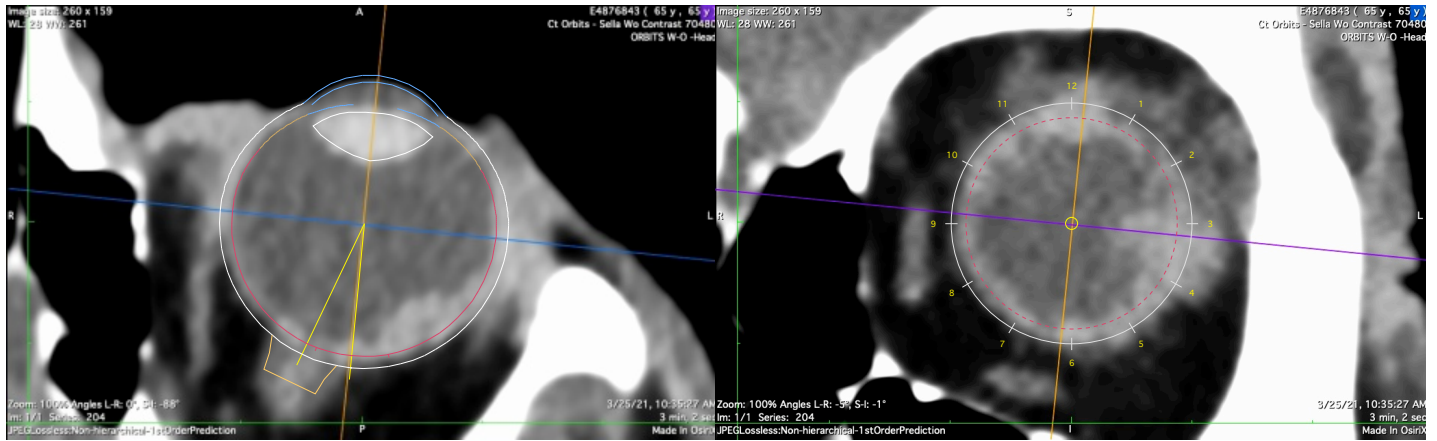
OPTIC NERVE AXIS DOSE



Fundus collage (2 centers), Collage (2 centers)

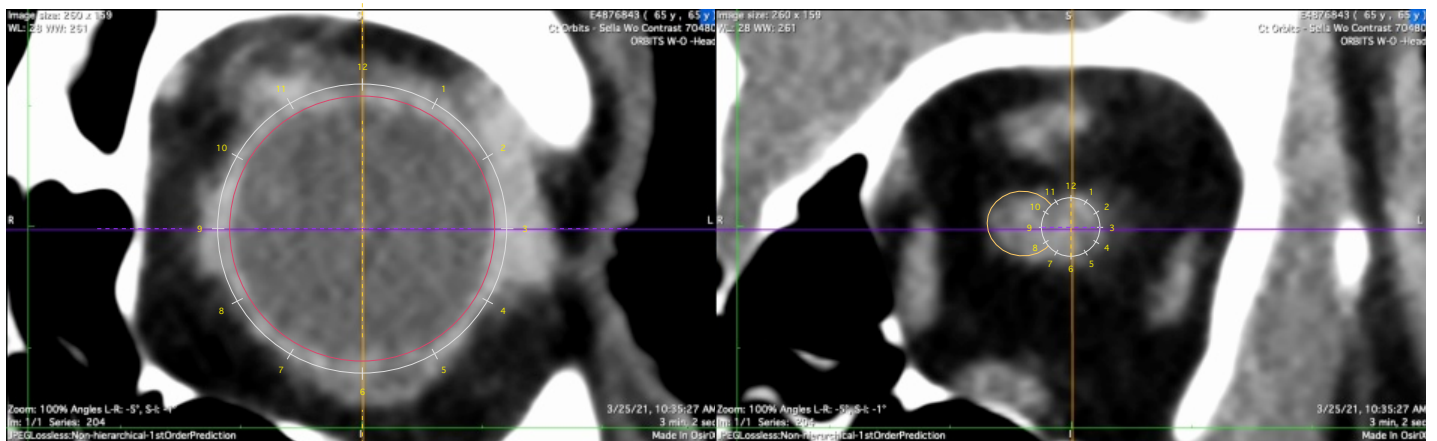


# Plaque Simulator Treatment Plan



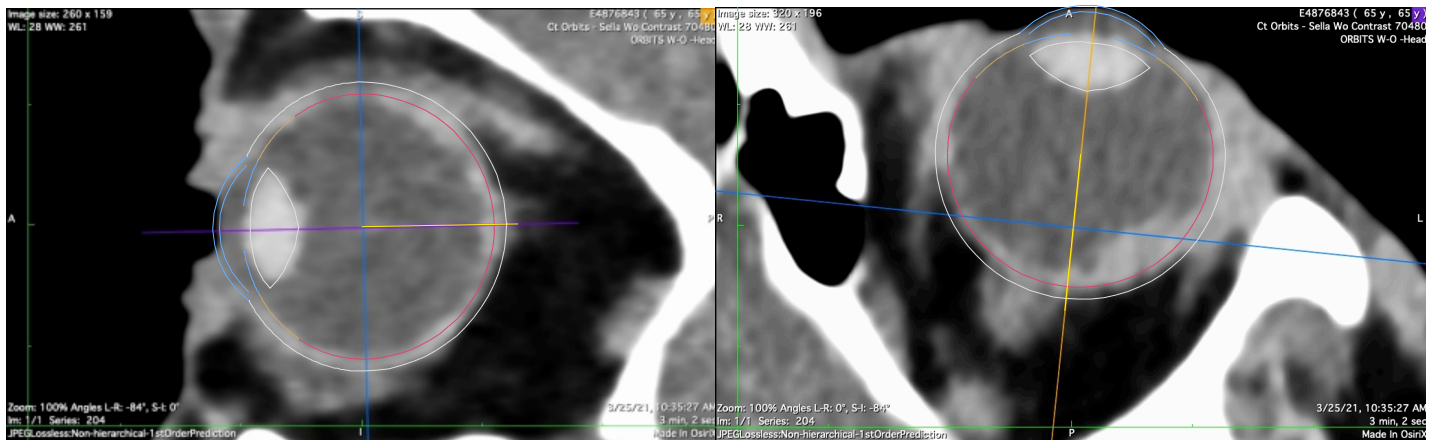
Axial geometric bisector through poles (3 o'clock meridian)

Coronal plane through tumor apex



Coronal plane at the equator

Coronal plane through nerve

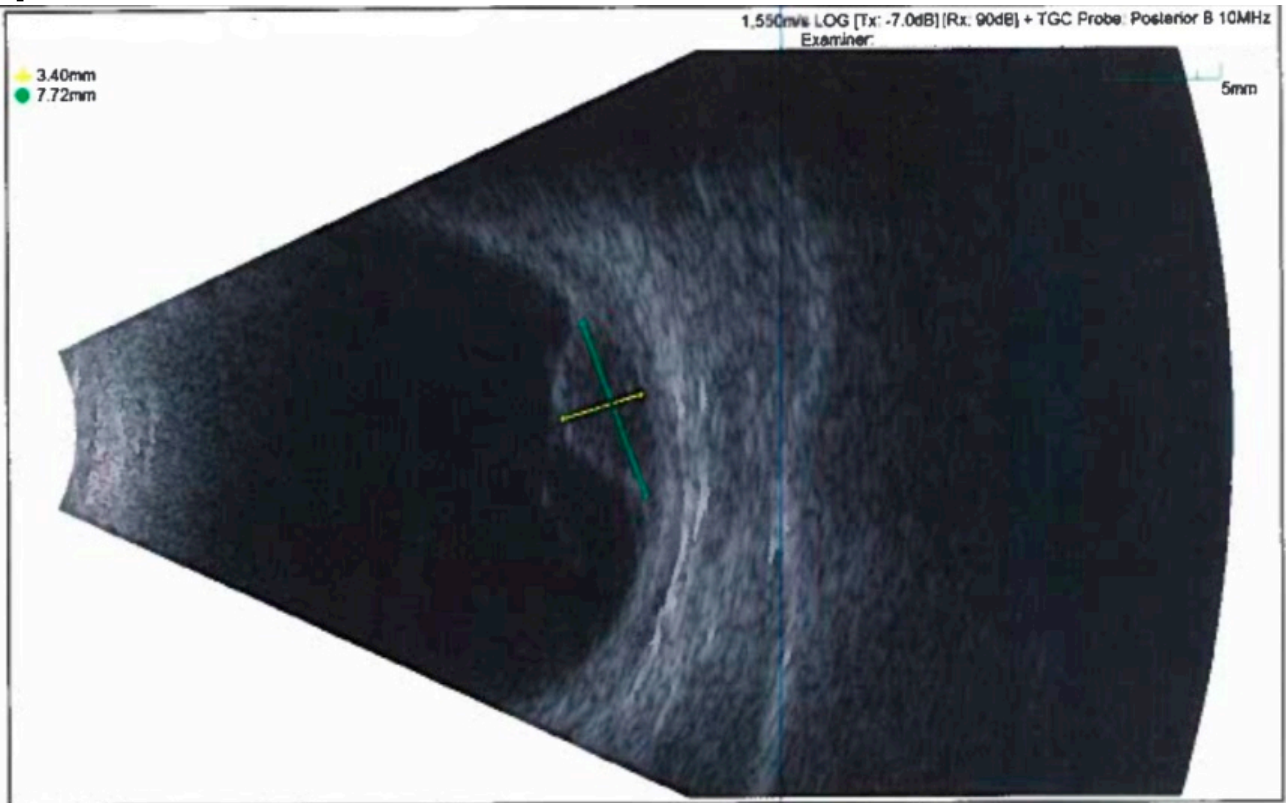


Sagittal geometric bisector (12 o'clock meridian)

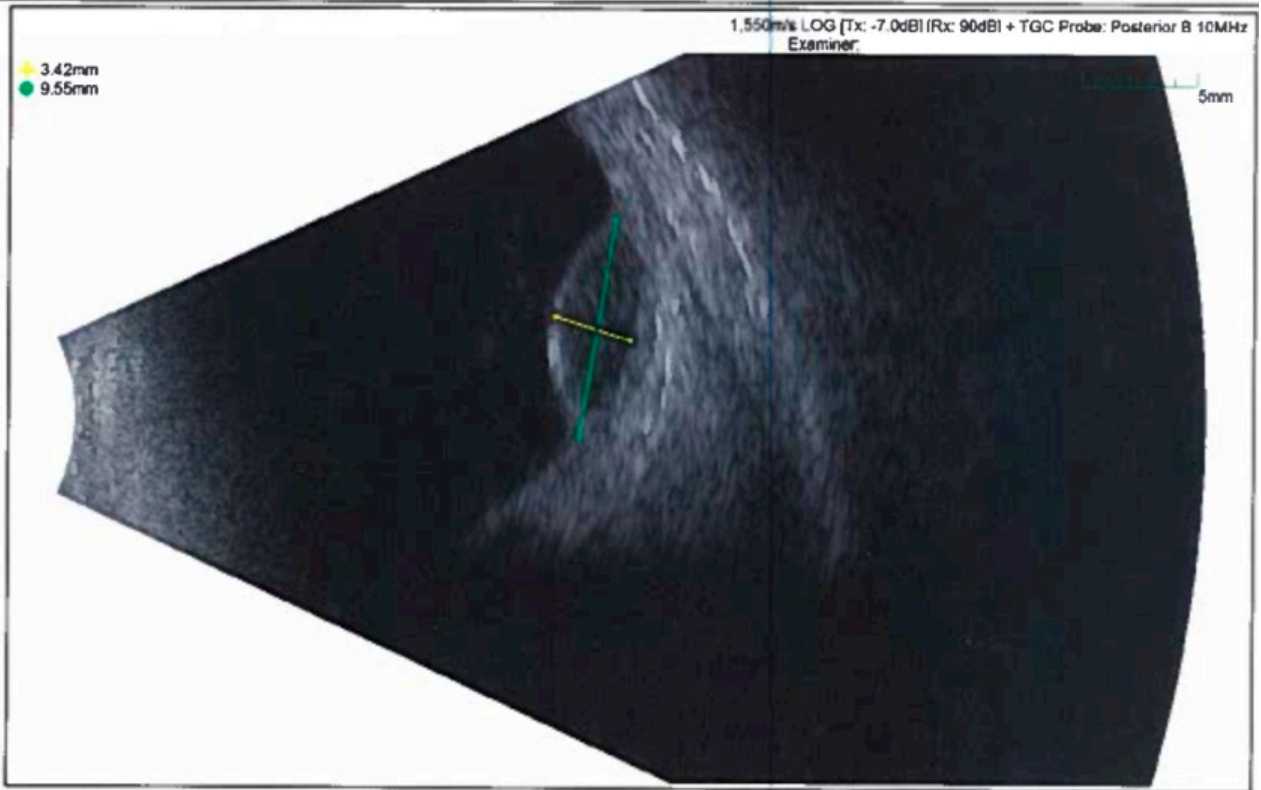
Meridian plane through tumor apex



# Plaque Simulator Treatment Plan



Ultrasound #1 (tumor height)



Ultrasound #2



# Plaque Simulator Treatment Plan

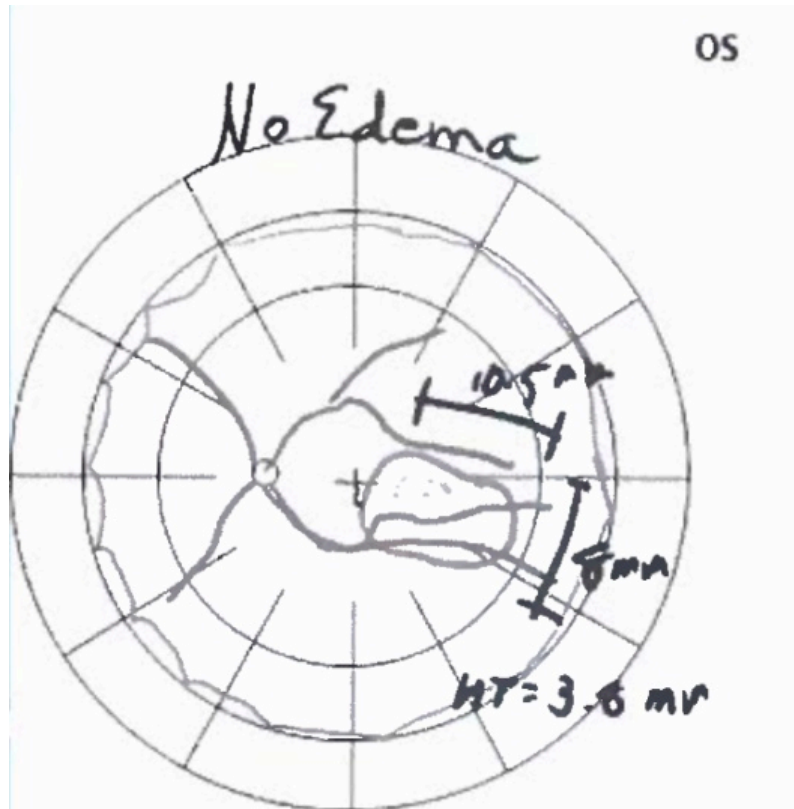
Institution:
Address:
Misc.:

Treat. Team	Name, Contact Info., Email	Alt.	Plan Status
_____	name _____, contact _____, phone _____	no	_____
_____	name _____, contact _____, phone _____	no	_____
_____	name _____, contact _____, phone _____	no	_____
_____	name _____, contact _____, phone _____	no	_____
_____	name _____, contact _____, phone _____	no	_____
_____	name _____, contact _____, phone _____	no	_____
_____	name _____, contact _____, phone _____	no	_____
_____	name _____, contact _____, phone _____	no	_____
_____	name _____, contact _____, phone _____	no	_____
_____	name _____, contact _____, phone _____	no	_____
_____	name _____, contact _____, phone _____	no	_____

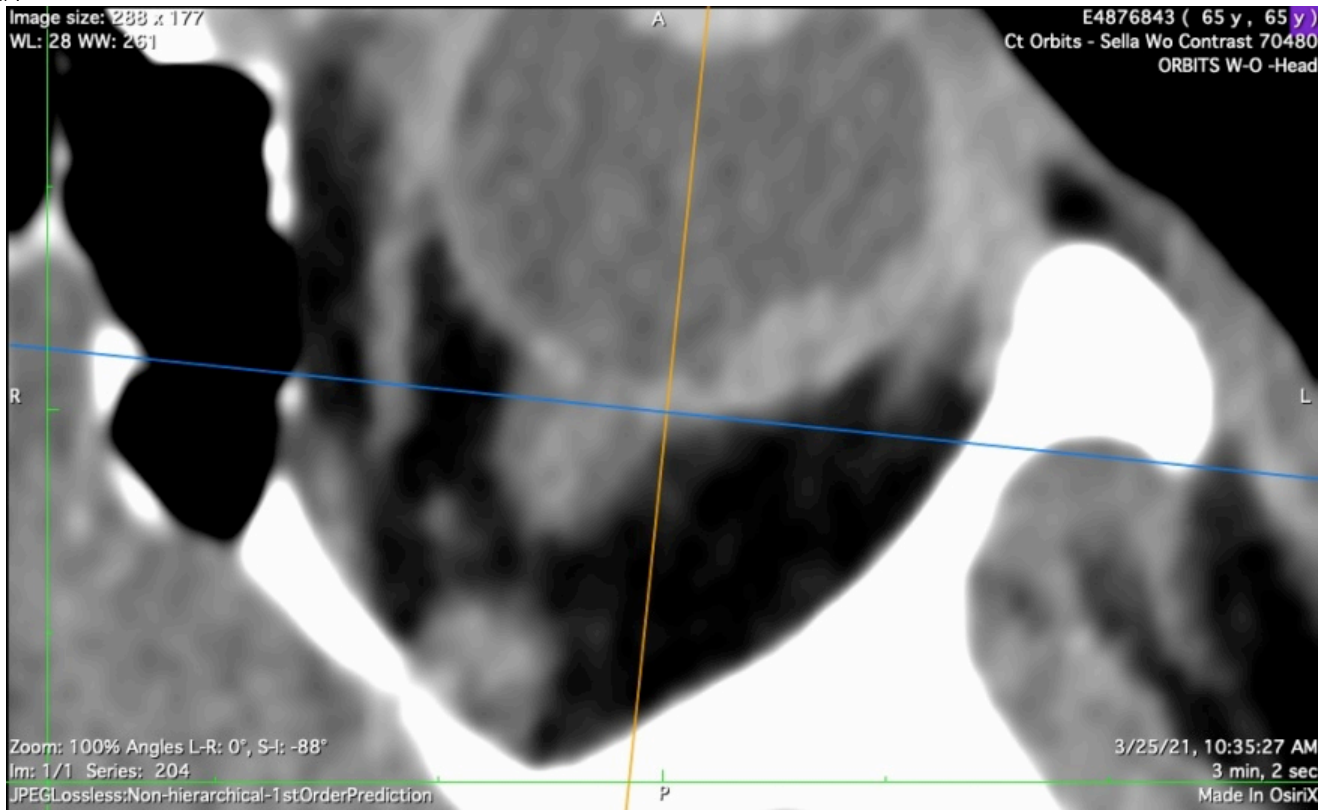
<b>Radiation Safety Surveys</b>	
In: OR# _____ mR/hr	meter _____
Signature _____	date _____
Out: OR# _____ mR/hr	meter _____
Patient: _____ mR/hr	meter _____
#seeds returned _____	misc. _____
Signature _____	date _____



# Plaque Simulator Treatment Plan



Misc #1

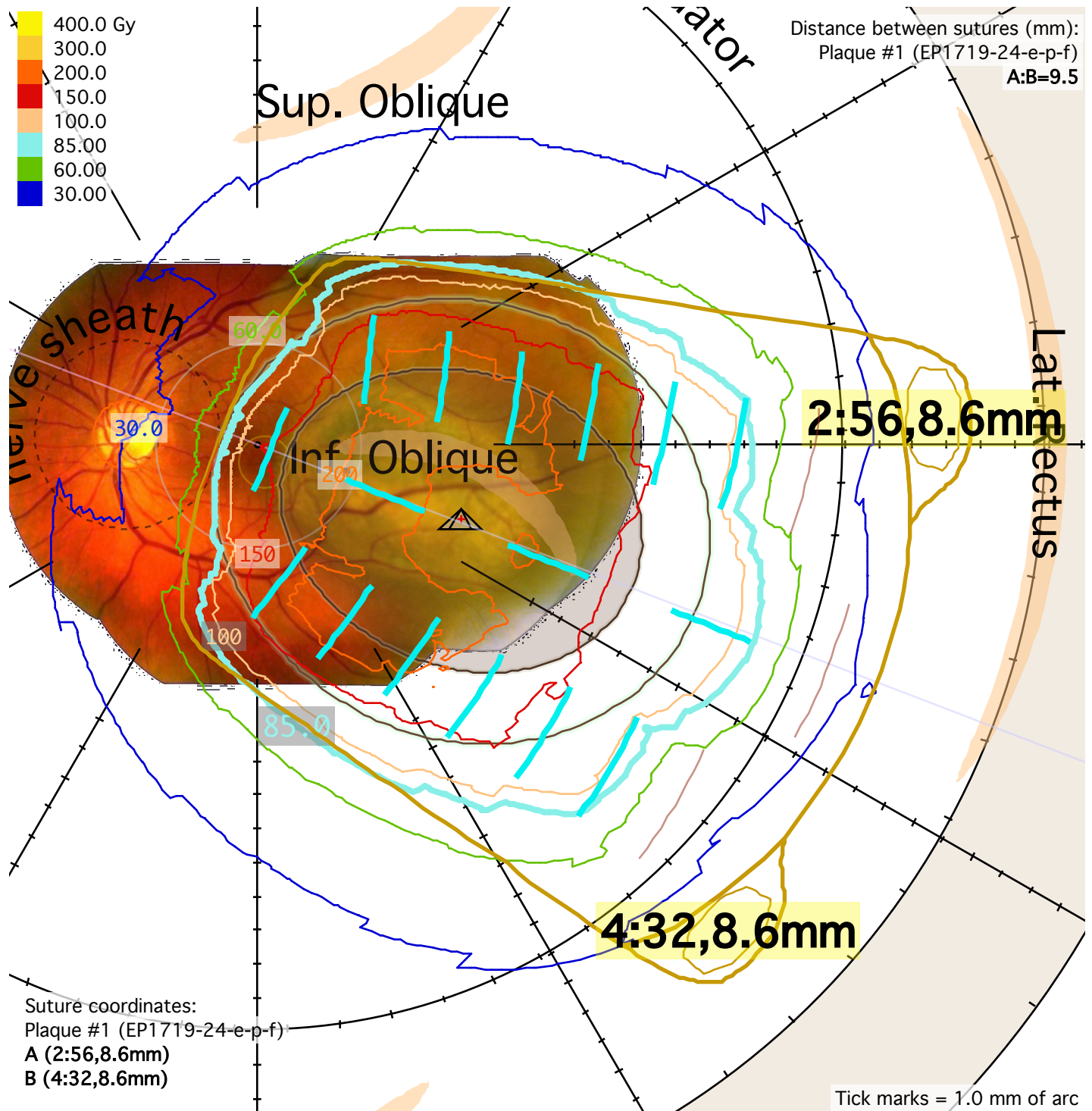


Axial image with projection of coronal plane through nerve



# Plaque Simulator Posterior Diagram (Azimuthal Equidistant Projection)

Rx plaque:	1 (EP1719-24-e-p-f)
Selected plaque:	1
Prescribed (Rx) dose:	85.00 Gy to axis of tumor 1 @ 4.30 mm
Dose matrix max:	233.23 Gy



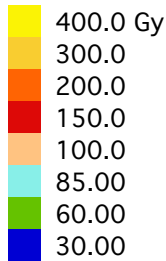
Suture coordinates:  
 Plaque #1 (EP1719-24-e-p-f)  
 A (2:56,8.6mm)  
 B (4:32,8.6mm)

Tick marks = 1.0 mm of arc

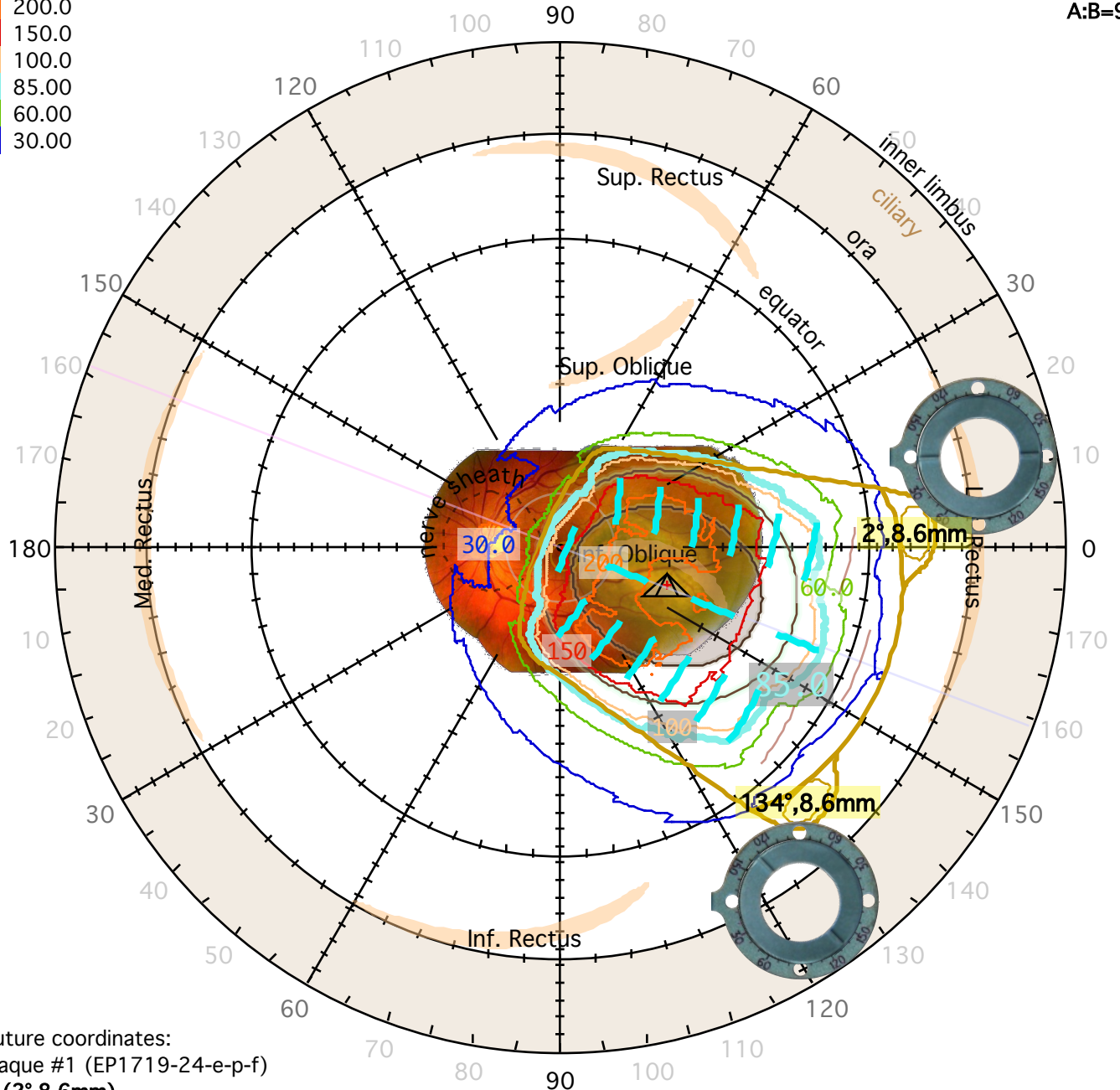


# Plaque Simulator Posterior Diagram (Azimuthal Equidistant Projection)

Rx plaque:	1 (EP1719-24-e-p-f)
Selected plaque:	1
Prescribed (Rx) dose:	85.00 Gy to axis of tumor 1 @ 4.30 mm
Dose matrix max:	233.23 Gy



Distance between sutures (mm):  
Plaque #1 (EP1719-24-e-p-f)  
A:B=9.5



Suture coordinates:  
Plaque #1 (EP1719-24-e-p-f)  
A (2°,8.6mm)  
B (134°,8.6mm)

Tick marks = 5.0 deg.



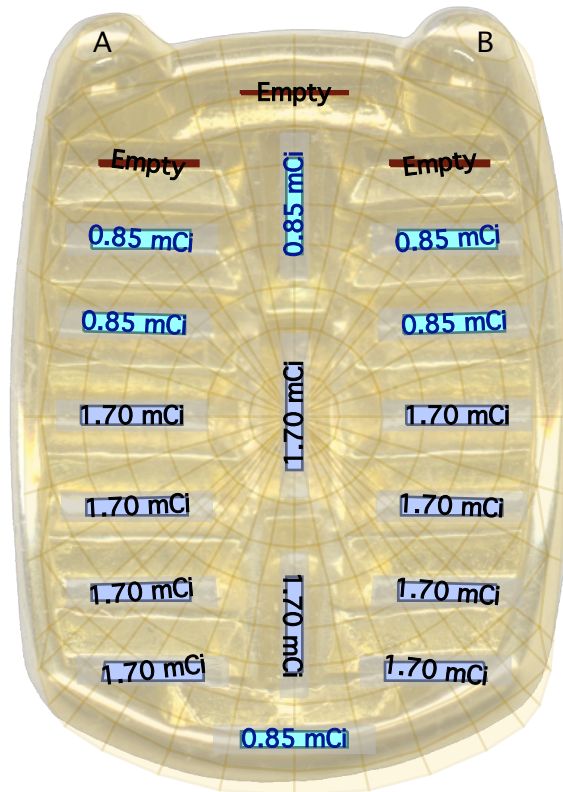


# Plaque Simulator Loading Instructions

Radionuclide source summary:	
Special instructions:	
Plaque: (#) name	(1) EP1719-24-e-p-f
Radionuclide:	I-125 (IAI-125A)
Inventory name:	Tutorial2021, Posterior
IDs: <invID><psID><uniqueID><lot><class>	<26279F48><26276BFA><IAAI><Tutorial2021, Posterior><1>
Number of sources:	10
Assay date:	4/21/21 at 08:00
Strength @ assay: avg. (total)	1.70 mCi (17.01 mCi)
Strength @ implant: avg. (total)	1.70 mCi (17.01 mCi)
Radionuclide:	I-125 (IAI-125A)
Inventory name:	Tutorial2021, Posterior
IDs: <invID><psID><uniqueID><lot><class>	<26279F49><26276BFA><IAAI><Tutorial2021, Posterior><1>
Number of sources:	6
Assay date:	4/21/21 at 08:00
Strength @ assay: avg. (total)	0.85 mCi (5.10 mCi)
Strength @ implant: avg. (total)	0.85 mCi (5.10 mCi)

See next page for additional loading diagrams

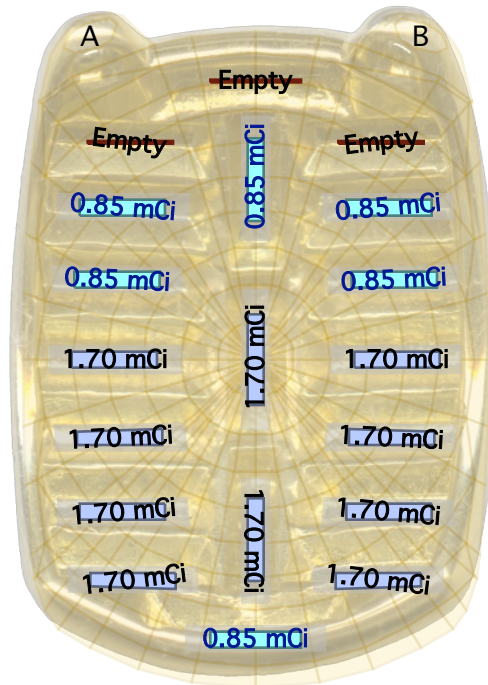
EP1719-24-e  
FACE (concave view)



# Plaque Simulator Loading Instructions (diagrams)

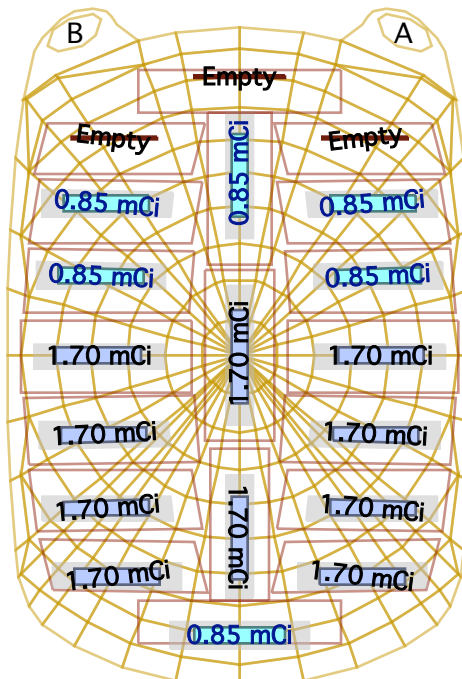
EP1719-24-e

FACE (concave view)



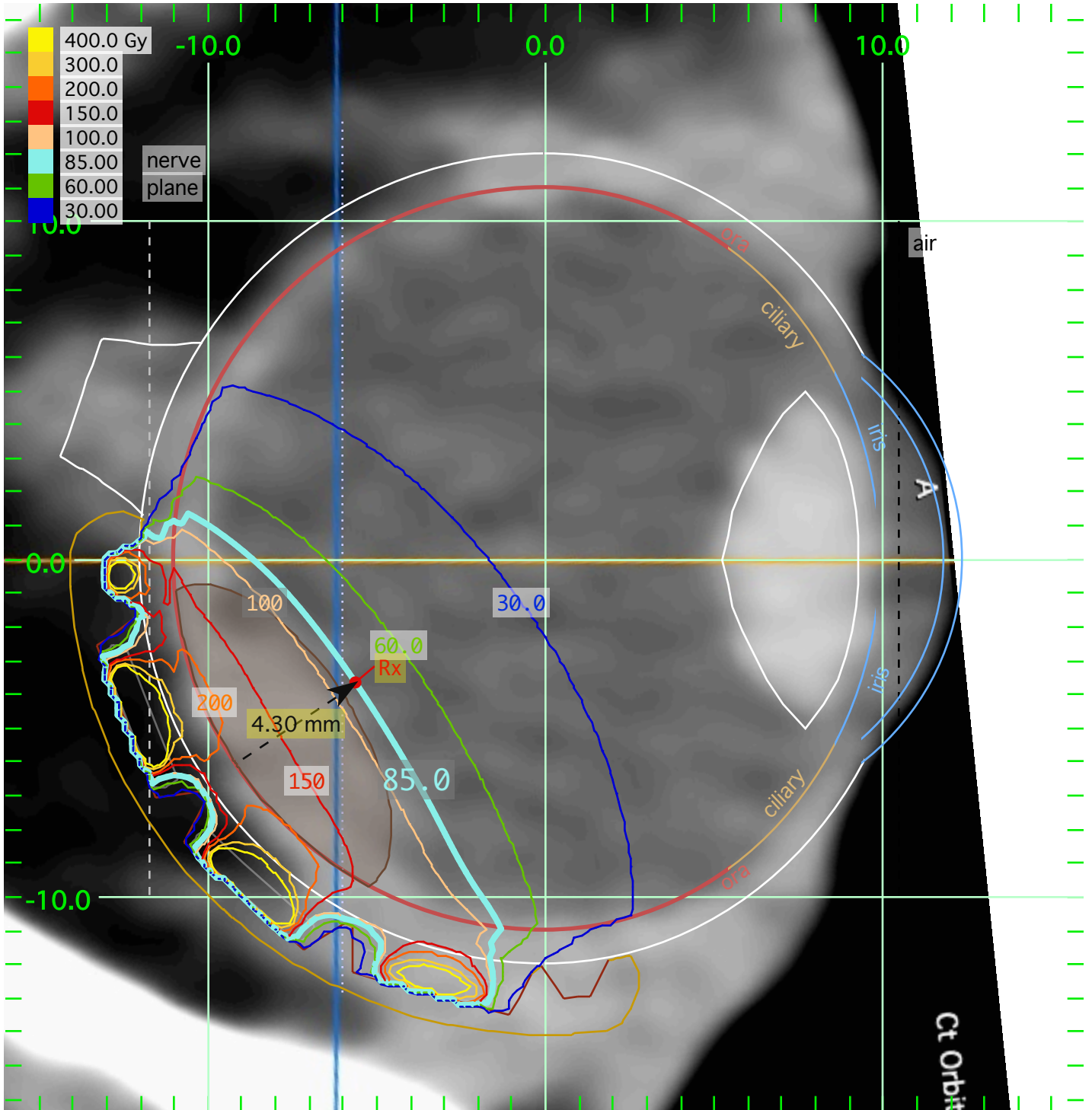
EP1719-24-e

BACK (convex view)



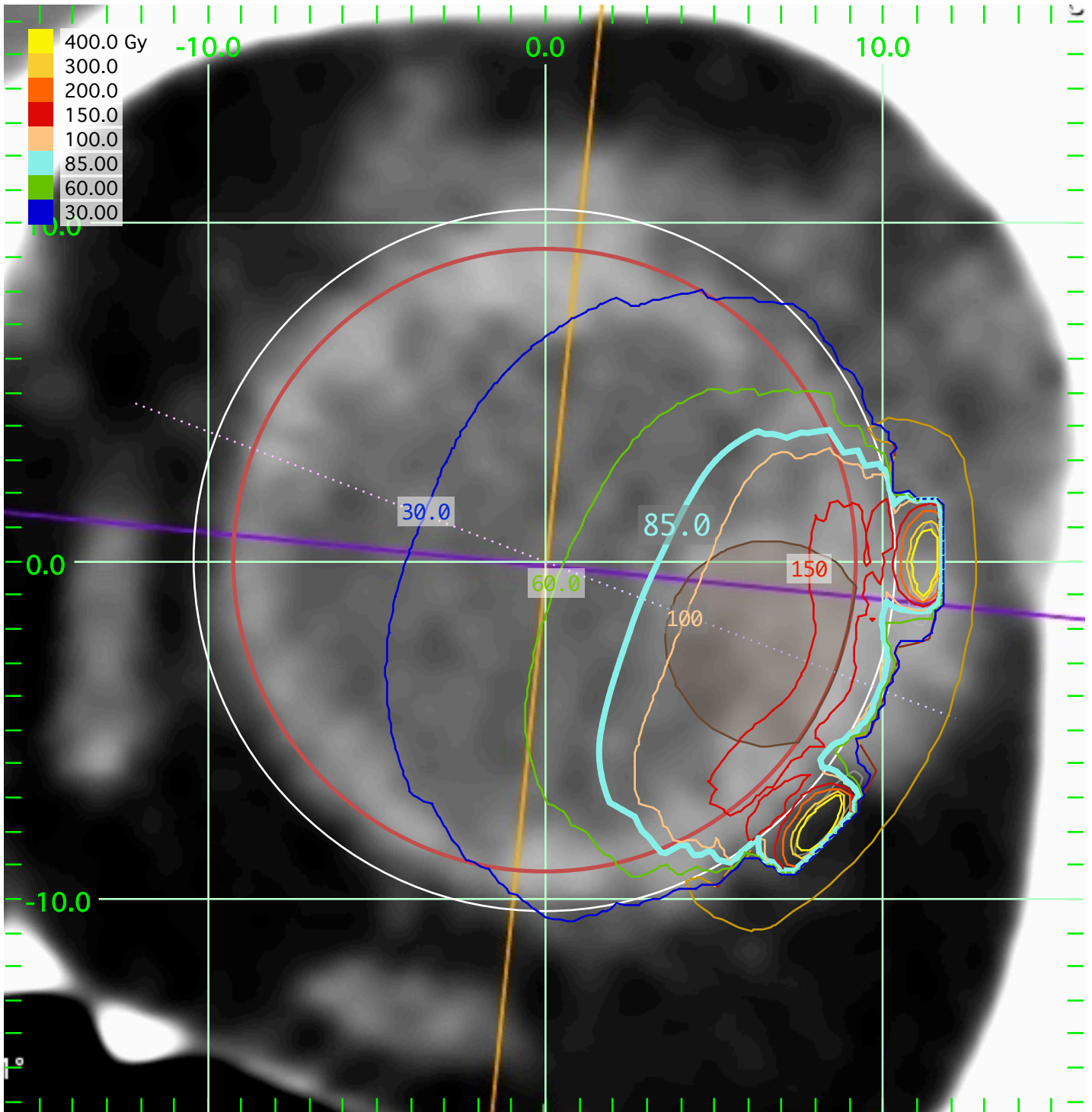
# Plaque Simulator Isodose Plot for Meridian Plane

Markers	1 mm
Prescribed (Rx) dose	85.00 Gy to axis of tumor 1 @ 4.30 mm
Plaque	1
Meridian plane angle(s)	249.0° & 69.0°
Dose matrix maximum	5408.87 Gy

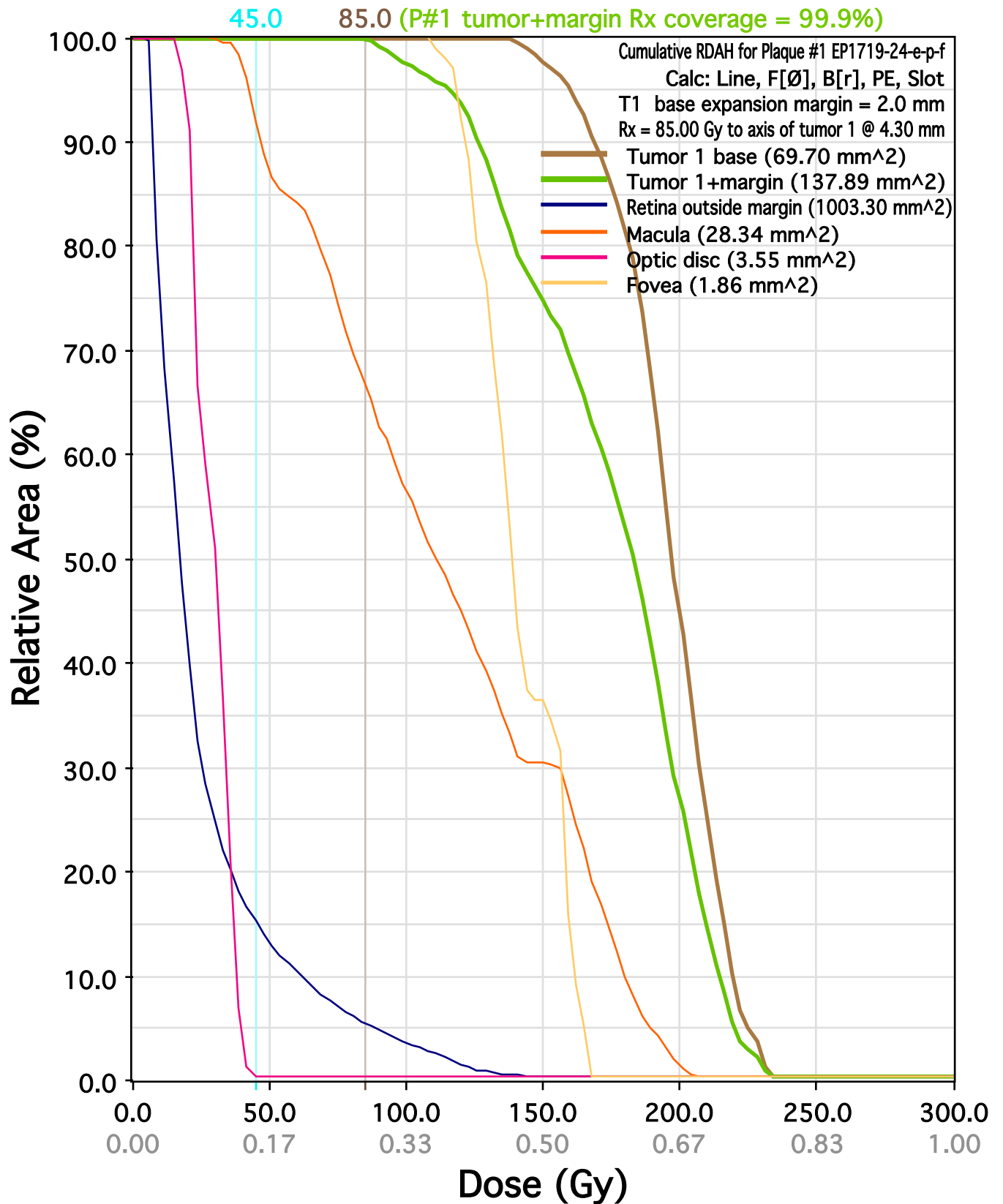


# Plaque Simulator Isodose Plot for Coronal Plane

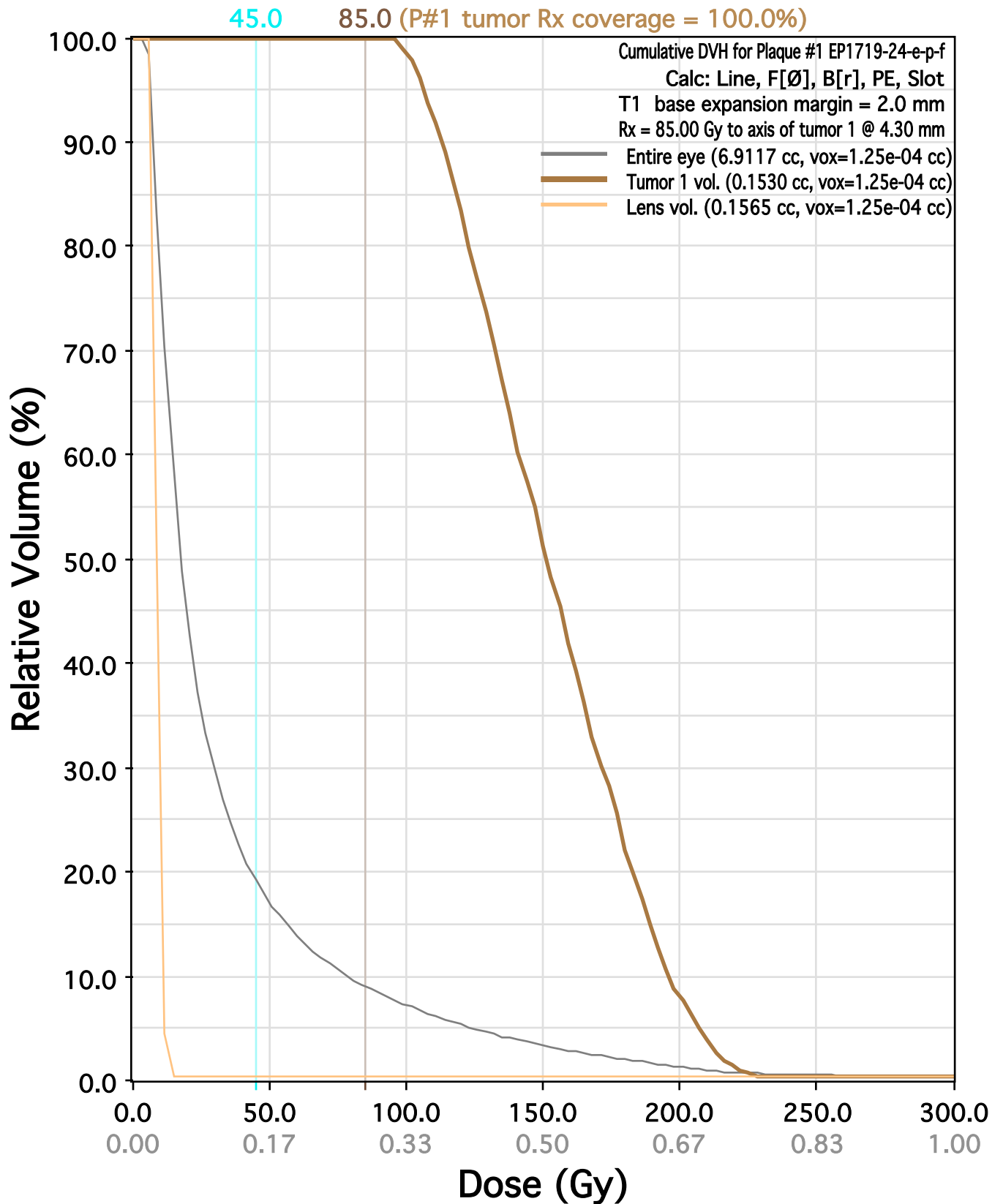
Markers	1 mm
Prescribed (Rx) dose	85.00 Gy to axis of tumor 1 @ 4.30 mm
Plaque	1
Coronal plane offset from equator	-6.0 mm
Dose matrix maximum	3574.31 Gy



# Plaque Simulator Retina Dose-Area Histogram



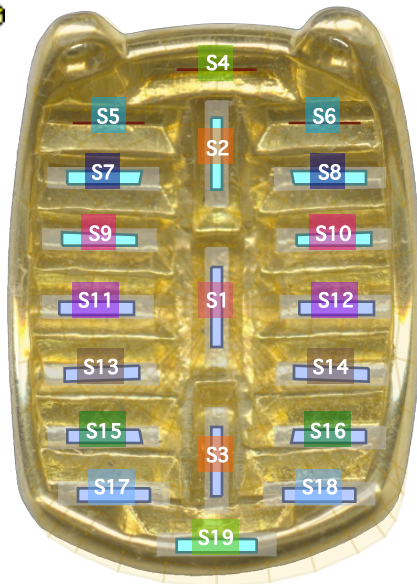
# Plaque Simulator Dose-Volume Histogram



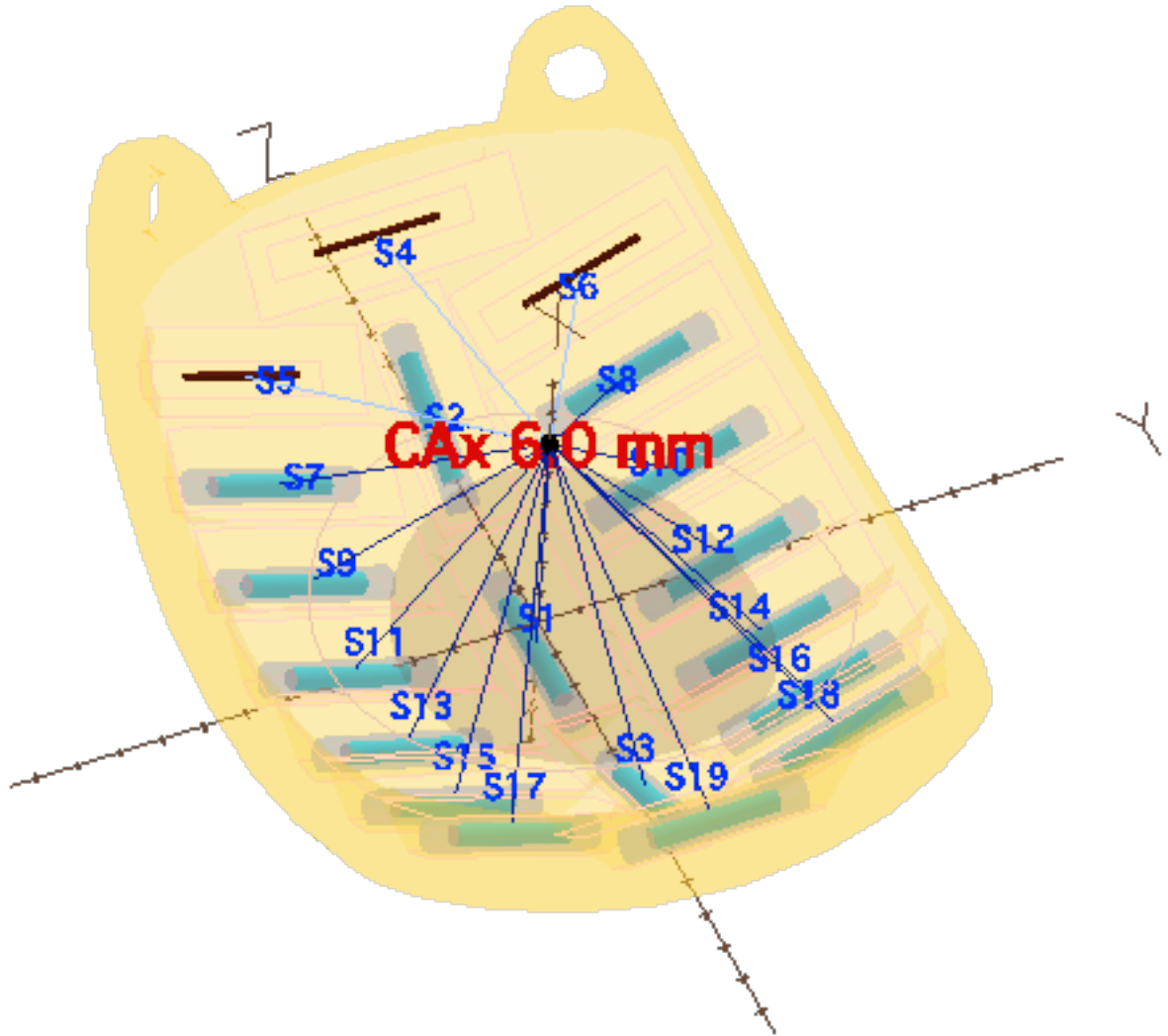
# Plaque Simulator QA Check (isotropic point sources in water)

Slot #	Seed Model	Strength @implant	Units	Activity to Sk	Units	Tavg hours	Dose-Rate Constant (1,90)	G	X mm	Y mm	Z mm	r mm	g(r)	Dose Gy	Check by
Plaque #1 EP1719-24-e-p-f, implant 4/21/21 8:00 AM for T = 168.00 hours															
Tavg (hours) = 1.443 x 24.0 x half-life(in days)															
r = distance from source center to QA point on plaque CAx at (6.00,0.00,0.00)															
Dose (Gy) = Strength {x ActivityToSk} x Tavg x DoseRateConstant {x (1/G(1,90))} x (1-exp(-T/Tavg)) x (1/r^2) x g(r)															
1	IAAI	1.701	mCi	1.27	U/mCi	2057.14	0.981	0.99260	-1.000	0.000	0.000	7.000	1.036	7.280	_____
2	IAAI	0.850	mCi	1.27	U/mCi	2057.14	0.981	0.99260	0.506	0.000	5.856	8.030	1.024	2.735	_____
3	IAAI	1.701	mCi	1.27	U/mCi	2057.14	0.981	0.99260	0.506	0.000	-5.856	8.030	1.024	5.471	_____
4	empty								3.247	0.000	9.064	9.472			_____
5	empty								2.405	-4.083	7.072	8.923			_____
6	empty								2.405	4.083	7.072	8.923			_____
7	IAAI	0.850	mCi	1.27	U/mCi	2057.14	0.981	0.99260	1.114	-4.291	4.937	8.164	1.023	2.642	_____
8	IAAI	0.850	mCi	1.27	U/mCi	2057.14	0.981	0.99260	1.114	4.291	4.937	8.164	1.023	2.642	_____
9	IAAI	0.850	mCi	1.27	U/mCi	2057.14	0.981	0.99260	0.398	-4.474	2.583	7.620	1.029	3.051	_____
10	IAAI	0.850	mCi	1.27	U/mCi	2057.14	0.981	0.99260	0.398	4.474	2.583	7.620	1.029	3.051	_____
11	IAAI	1.701	mCi	1.27	U/mCi	2057.14	0.981	0.99260	0.144	-4.551	-0.000	7.417	1.031	6.456	_____
12	IAAI	1.701	mCi	1.27	U/mCi	2057.14	0.981	0.99260	0.144	4.551	0.000	7.417	1.031	6.456	_____
13	IAAI	1.701	mCi	1.27	U/mCi	2057.14	0.981	0.99260	0.353	-4.386	-2.532	7.585	1.029	6.162	_____
14	IAAI	1.701	mCi	1.27	U/mCi	2057.14	0.981	0.99260	0.353	4.386	-2.532	7.585	1.029	6.162	_____
15	IAAI	1.701	mCi	1.27	U/mCi	2057.14	0.981	0.99260	1.114	-4.291	-4.937	8.164	1.023	5.284	_____
16	IAAI	1.701	mCi	1.27	U/mCi	2057.14	0.981	0.99260	1.114	4.291	-4.937	8.164	1.023	5.284	_____
17	IAAI	1.701	mCi	1.27	U/mCi	2057.14	0.981	0.99260	2.405	-3.959	-7.142	8.923	1.014	4.386	_____
18	IAAI	1.701	mCi	1.27	U/mCi	2057.14	0.981	0.99260	2.405	3.959	-7.142	8.923	1.014	4.386	_____
19	IAAI	0.850	mCi	1.27	U/mCi	2057.14	0.981	0.99260	3.247	0.000	-9.064	9.472	1.008	1.933	_____
Dose delivered from this plaque (P#1) to:									QA_Point Dose = 70.480			QA_Check Dose = 73.380		_____	
												Point / Check = 0.960		_____	

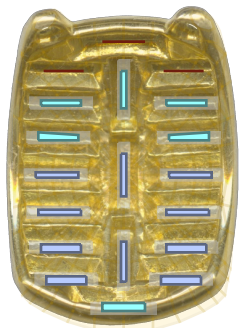
EP1719-24-e



# Plaque Simulator QA Check Geometry



EP1719-24-e





# Plaque Simulator Setup

Eye AP axis:	24.37 mm	(ratio of ant. semiaxes = 0.91)
Equatorial diameter:	24.00 mm	(cornea radius = 7.6 mm)
Limbus diameter:	12.00 mm	(angle from AP axis = 147.6°)
Lens center:	7.71 mm	(lens size = 10.0 x 4.0 mm)
Disc to pole chord:	3.83 mm	(from AP axis: azimuth = 20.0°, elevation = +1.5°)
Plaque:	1 (EP1719-24-e-p-f) (Rx)	
Center:	(3:44, 17.7 mm) 105.0°	

