

Rampart Radiation Scatter Report

A comprehensive analysis of the combined effect of the Rampart M1128 V2.0, L148 Table Mounted Shield & Multi-Purpose Shield (MPS) on radiation scatter in the cardiac catheterization lab as compared to conventional shielding methods such as lead-lined table drapes, overhead acrylic shielding, and lead aprons.

PROTOCOL

This test aims to evaluate the effectiveness of simultaneously using the Rampart M1128 V2.0, L148, and MPS shielding products on a phantom model to provide radiation protection for staff in cardiac catheterization laboratories. This shielding combination was compared against conventional radiation protective devices such as lead-lined table drapes, overhead acrylic shields, and 0.5mm lead aprons. A RaySafe 452 survey meter with Air Kerma plate was used for precise measurement of radiation attenuation.

CONCLUSIONS

- The combination of Rampart shielding showed overall reduced occupational radiation exposure rates compared to conventional shielding methods, including the use of 0.5mm lead aprons.
- The areas where the Rampart shielding most significantly outperforms conventional shielding include operator position 1 and the head height for all three operator positions.
- The effectiveness of the Rampart shielding at all heights and positions is exceptional and optimal in positions closer to the M1128 V2.0.
- Conventional shielding does not effectively protect all body parts from radiation exposure, such as the head and arms, particularly the left arm. This is another area where Rampart shielding is far more effective than conventional shielding.



SOURCE:

Lancer Smith / Nova Lumina LLC (2023): Rampart Radiation Scatter Report. TR-007-DHF-001/DHF-002 (M1128 V2, L148-MPS, L148-TMS) Rev A

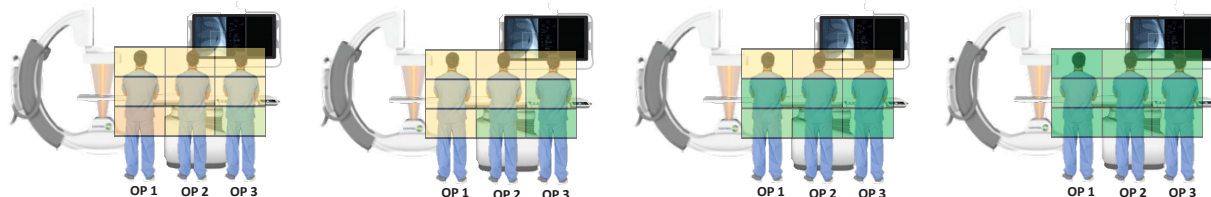
Scan this QR code to find the complete report on the RAMPART website.

DATA

In AP C-Arm Configuration: The use of Rampart M1128 V2.0, L148 and MPS significantly reduces whole body radiation exposure for operators 1-3 when compared to conventional table drapes, overhead acrylic shielding, and lead aprons.

C-Arm Configuration: AP

Height	mrem/hr	Conventional table drapes and overhead acrylic shield (no lead aprons)	Conventional table drapes and overhead acrylic shield (lead apron worn and EDE conversion factor applied)	Conventional table drapes and overhead acrylic shield (with 0.5mm lead apron)	Rampart M1128 V2.0, L148 and MPS (no lead apron)
OP 1	Head	0.4889	0.4889	0.4889	0.0165
	Chest	2.3280	0.6984	0.0903	0.0989
	Waist	4.3165	1.2950	0.1674	0.0175
OP 2	Head	1.4647	1.4647	1.4647	0.1319
	Chest	1.9303	0.5791	0.0748	0.0272
	Waist	0.7954	0.2386	0.0308	0.0194
OP 3	Head	0.7527	0.7527	0.7527	0.1261
	Chest	0.6955	0.2086	0.0270	0.0272
	Waist	0.3182	0.0954	0.0123	0.0223



In Cranial 30° LAO 30° C-Arm Configuration: At more extreme angles the use of Rampart M1128 V2.0, L148 and MPS continues to significantly reduce whole body radiation exposure for operators 1-3 when compared to conventional table drapes, overhead acrylic shielding, and lead aprons.

C-Arm Configuration: Cranial 30° LAO 30°

Height	mrem/hr	Conventional table drapes and overhead acrylic shield (no lead aprons)	Conventional table drapes and overhead acrylic shield (lead apron worn and EDE conversion factor applied)	Conventional table drapes and overhead acrylic shield (with 0.5mm lead apron)	Rampart M1128 V2.0, L148 and MPS (no lead apron)
OP 1	Head	5.1119	5.1119	5.1119	0.1688
	Chest	20.3700	6.1110	0.7897	0.1484
	Waist	11.4460	3.4338	0.4438	0.0107
OP 2	Head	7.3623	7.3623	7.3623	0.3434
	Chest	9.7970	2.9391	0.3798	0.1581
	Waist	3.8024	1.1407	0.1474	0.1232
OP 3	Head	3.8800	3.8800	3.8800	0.1979
	Chest	4.0740	1.2222	0.1579	0.1688
	Waist	2.2213	0.6664	0.0861	0.1067

