Summary of PEMF and EMF testing of ThermoGem Amethyst Tourmaline Jade PEMF Photon mats

ThermoGem Amethyst Tourmaline Jade PEMF Photon mats, belts, and vests feature Pulsed Electromagnetic Fields System. The PEMF function allows to adjust frequencies manually with a dial in the range between 1 and 30 Hz, with a 1 Hz increment. Also, you can select 1 of 13 programs of different length from 1 to 12 hours automatically changing frequencies as per set algorithms.

The mini mat has three PEMF coils, midsize mat comes with six coils, professional one with eight coils, and the single-size mat has ten PEMF coils positioned across two parallel lines extending from the feet zone to the logo area of the mat.

PEMF for different frequencies over one coil

Researched by C.D. Lytle, PhD, in February 2020

ThermoGem Amethyst Tourmaline Jade PEMF Photon Compact Mat 22"x48".

Mat settings: PEMF On, Heat and Photo Off

Controller: H-60PVA, 50 Gauss pulses at 0-30Hz (variable)

Magnetometer: EMF Tester PCE-EMF823. Although the quoted range is 30-300 Hz, a careful independent comparison indicated the PCE-EMF823 was accurate down to at least 8Hz.

Range used: 0 - 20000 mGauss

Magnetometer was laid horizontally on mat to reduce effect of uneven surface, sensor was 5/8” (1.6 cm) above mat surface.* Distance from PEMF coil to mat surface is unknown.

PEMF for different frequency settings at one coil*

PEMF Frequency` (Hz)	Meter reading (mGauss)
30	6620
25	6675
20	6405
15	6245
12	6095
8	6185
6	6230
4	5925
2	6040
1	6005

*Meter was placed on the center line of the mat and 8.25 inches from the top of the heated portion.

Observations:

1. **Measured values were essentially constant for the different frequencies and roughly 12.5 % of the 50 Gauss rated intensity.**
2. **Measured values varied little while the frequency changed over a factor of 30.**

Profile of PEMF along center line of mat

ThermoGem Amethyst Tourmaline Jade PEMF Photon Compact Mat 22"x48".

Mat settings: PEMF On, Heat and Photo Off

Controller: H-60PVA, 50 Gauss pulses at 30Hz

Magnetometer: PCE-EMF823. Range used: 0 - 20000 mGauss

Magnetometer was laid horizontally on mat to reduce effect of uneven surface, sensor was 5/8" above mat surface. Measurements over the peaks were also made with the meter held vertically with sensor directly against the mat surface.

PEMF measurements made along center line, distances measured from top edge of heated area

Meter position	5/8" above mat	Mat surface
Distance from top (inch)	PEMF level (mGauss)	
3	315	
5.5	1435	
8.25*	6310	8040
11	1585	
13.5	740	
16	1725	
18.75*	6020	7680
21.5	1325	
24	735	
26.75	1625	
29.25*	5350	7605
32	1550	
34.5	260	

* Denotes PEMF peaks, presumably over PEMF coils, evenly spaced along centerline of mat

Observations:

1. **Measurements over coils on mat surface was 7.6-8 Gauss (~15% of rated 50 Gauss coils).**
2. **PEMF intensity dropped more than 70% within 2.75 inches along center line.**

Profile of PEMF across mat, perpendicular to centerline

ThermoGem Amethyst Tourmaline Jade PEMF Photon Compact Mat 22"x48".

Mat settings: PEMF On, Heat and Photo Off

Controller: H-60PVA, 50 Gauss pulses at 30Hz

Magnetometer: PCE-EMF823. Range used: 0 - 20000 mGauss

Magnetometer was laid horizontally on mat to reduce effect of uneven surface, sensor was 5/8" above mat surface.

PEMF measurements made along line parallel to crystal tubes

Distance from left side of mat (inches)	PEMF (mGauss)
1.75	585
3.75	1205
5.75	2595
7.75*	5955
9.75	3210
11.75	1930
13.75	600

*measurement associated with apparent coil

Observations:

1. **PEMF intensity drop off was 50% by 2 inches, 74% at 4 inches.**

PEMF measured at different heights over one coil

ThermoGem Amethyst Tourmaline Jade PEMF Photon Compact Mat 22"x48".

Mat settings: PEMF On, Heat and Photo Off

Controller: H-60PVA, 50 Gauss pulses at 30Hz

Magnetometer: PCE-EMF823. Range used: 0 - 20000 mGauss

Magnetometer was held horizontally on or above mat surface.

PEMF measurements above PEMF coil*

Height above mat surface Inches	PEMF mGauss	Intensity drop off %
1.	6340	
2.	2255	64
3.	1140	82
4.	610	90
5.	415	93
6	220	97

* measured at 8.25 inches from top of mat over first coil

Observation:

1. PEMF intensity drop off measured above the mat was greater than that measured along the mat surface.

Distribution of 100 mGauss PEMF above mat

ThermoGem Amethyst Tourmaline Jade PEMF Photon Compact Mat 22"x48".

Mat settings: PEMF On, Heat and Photo Off

Controller: H-60PVA, 50 Gauss pulses at 30Hz

Magnetometer: Trifield EMF Meter 100XE, range used: 0 - 100 mGauss

Position above mat for 100 mGauss reading

Distance from top of mat (inches)	Distance from side of mat (inches)	Height above mat that read 100 mGauss (inches)
2.75	3.5	15
	12	15
8.25	3.5	18
	7.75*	17
	12	16
13.5	3.5	18
	12	16
24.25	3.5	17
	12	16
29.5	3.5	16
	7.75*	16
	12	16
34.5	3.5	14
	7.75	14
	12	14

Conclusion:

1. **There is a 'cloud' of 100 mGauss PEMF over at least half of the mat extending at least 14 inches above the mat.**

Effectiveness of EMI (Electro-Magnetic Interception)

ThermoGem Amethyst Tourmaline Jade PEMF Photon Compact Mat 22"x48".

Mat settings: Heat On or Off, PEMF and Photo Off

Controller: H-60PVA, 50 Gauss pulses at 30Hz

Magnetometer: Trifield EMF Meter 100XE, Range used: 0.2-3 mGauss

Magnetometer was laid horizontally on mat to reduce effect of uneven surface.

Position on mat for EMF reading above 0.2 mGauss*

Distance from top of mat (inches)	Distance from left side of mat (inches)	EMF reading (mGauss) Heat ON	Heat OFF
8	8.5	0.9	0.9
18.5	8.5	0.8	0.8
29.25	8	0.6	0.6
29	5	3.1	<0.2

*** No readings over the mat were at or above 0.2 mGauss, the limit of detectability of the meter, except at the noted locations.**

Observations:

1. **Four locations were located.**
2. **Three locations were over the PEMF coils and were detectable with or without the heat functioning.**
3. **The remaining location was only detectable when the heat was ON. It was near the third PEMF coil but closer to the left side of the mat.**
4. **The 'hot spots' relate to the safety sensors or bimetal switches functioning.**

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