

NEW STANDARD OF CARE

OPTIMIZED DOSING WITH ULTRABRIEF ECT - ENSURING EFFICACY WHILE MARKEDLY REDUCING COGNITIVE SIDE EFFECTS

These landmark Ultrabrief ECT parameters were introduced in the Fall of 2003 by MECTA and have had a major impact on the field.^{1,2} Controlled research at Columbia University has shown that the 0.3 ms ultrabrief pulse width sharply reduces seizure threshold, allowing treatments to be given at much lower electrical dosage than had been previously possible. Most critically, when compared to standard brief pulse stimulation, use of ultrabrief parameters results in a profound reduction in cognitive side effects. In many domains, this advantage for ultrabrief stimulation is as large or larger than the difference between bilateral and right unilateral ECT in their cognitive effects. Definitive research published in 2008 confirms that right unilateral ECT given at 6 times initial seizure threshold with a 0.3 ms pulse width is equivalent in efficacy to the therapeutic effects using a robust form of bilateral ECT (1.5 ms

pulse width and 2.5 times seizure threshold).³ Right unilateral ultrabrief ECT is a clear advance for the field as patients show rapid improvement with little sign of cognitive deficit. The SPECTRUMS offer the only ultrabrief parameter set that allows for ultrabrief pulse stimulation across nearly the full output range of the device.

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In the new OPTIMIZED DOSING Parameter Sets the 0.3 ms pulse width is used with a fixed current at 800 mA **NEW!** and in the FULL SPECTRUM DOSING Parameter Sets, the 0.3 ms pulse width can be utilized with a range of current from 500 mA to 900 mA, as titration in the current domain may ultimately prove superior in refining stimulus properties.^{2,4 *} **NEW!** All four SPECTRUM units can be upgraded to include this new form of stimulation as a menu selection.

1. Lisanby SH, Sackeim HA. New developments in convulsive therapy. *Epilepsy & Behavior*. 2001;2:S68-73.
2. Sackeim HA. The convulsant and anticonvulsant properties of electroconvulsive therapy: towards a focal form of brain stimulation. *Clinical Neuroscience Research*. 2004;4:39-57.
3. Sackeim HA, Prudic J, Nobler MS, Fitzsimons L, Lisanby SH, Payne N, Berman RM, Brakemeier EL, Perera TP, Devanand DP. Effects of pulse width and electrode placement on the efficacy and cognitive effects of electroconvulsive therapy. *Brain Stimulation*. 2008;1:71-83.
4. Peterchev AV, Rosa M, Deng Z, Prudic J, Lisanby S. Electroconvulsive therapy stimulus parameters: rethinking dosage. *Journal of ECT*. 2010;3:159-174.
5. Sackeim HA. Electroconvulsive therapy in late life depression. In Salzman, C. (Ed.), *Clinical Geriatric Psychopharmacology*. 2004;4:385-422.

Contact a MECTA representative in your area for pricing and upgrade information and also to order the most accurate and up to date Titration and Pre-Selected Dosing Tables, taking into account gender, age, and electrode placement (up to sixteen tables)⁵. **NEW! Order a new MECTA Instruction Manual containing the instructions for using these new OPTIMIZED and FULL SPECTRUM DOSING Parameter Sets.**



ECT PARAMETERS / 200 JOULE SYSTEMS

Q Models

	OPTIMIZED DOSING Parameter Sets			FULL SPECTRUM DOSING Parameter Set	
	0.3	0.5	1.0**	Set 4**	NEW!
Four Parameter Sets:					
Pulse Width	0.3-0.75 ms	0.5-0.75 ms	1.0 ms	0.3-1.0 ms	
Stimulus Duration	0.5-8.0 sec	0.5-8.0 sec	0.5-8.0 sec	0.5-8.0 sec	NEW!
Frequency	20-120 Hz	20-120 Hz	20-90 Hz	20-120 Hz	
Stimulus Current	800 mA	800 mA	800 mA	500-900 mA	NEW!
Charge	4.0-1152 mC	8.0-1152 mC	16-1152 mC	3.0-1152 mC	
Energy @ 220 ohm patient impedance	0.8-202.8 joules	1.4-202.8 joules	2.8-202.8 joules	0.3-202.8 joules	

M Models

	OPTIMIZED DOSING Parameter Sets			
	0.3	0.5	1.0**	NEW!
Three Parameter Sets:				
Pulse Width	0.3-0.75 ms	0.5-0.75 ms	1.0 ms	
Stimulus Duration	1.19-8.0 sec	0.71-8.0 sec	0.35-8.0 sec	NEW!
Frequency	20-120 Hz	20-120 Hz	20-90 Hz	
Stimulus Current	800 mA	800 mA	800 mA	NEW!
Charge	11-1152 mC	11-1152 mC	11-1152 mC	
Energy @ 220 ohm patient impedance	2.0-202.8 joules	2.0-202.8 joules	2.0-202.8 joules	

*Patent Pending

**EEG Data Analysis enabled for use with 1.0 OPTIMIZED DOSING Parameter Sets and Historical Parameters in the FULL SPECTRUM DOSING Parameter Set.