

# Lightning Lap (LL) Polishing Recommendations

1/25/2010

<i>SYNTHETIC</i>	Lap 1	Lap 2	Lap 3	Lap 4	Lap 5	Alt. Finish	RPM
<b>CZ</b>	325 Copper	600 or LL-600	LL-3k	LL-AL		LL-200k	300-600
<b>CZ-2</b>	600 or LL-600	LL-3k	FAST- or LL-14k	LL-BEAST-100k			300-600
<b>CZ-3</b>	260	600	LL-8k	Trewax-LL-50k			
<b>GGG</b>	600 or LL-600	LL-3k	LL-14k	LL-AL		LL-200k	300-600
<b>Glass</b>	600 or LL-600	1200 or LL-1200	LL-3k	LL-CO			300-600
<b>Glass-2</b>	600 or LL-600	LL-3k	1200 or LL-1200	LL-CO			300-600
<b>Laser Glass</b>	600 or LL-600	LL-3k	LL-CO				300-600
<b>Leaded Glass</b>	600 or LL-600	LL-3k	LL-CO			FAST Lap	300-600
<b>Lithium Niobate</b>	600	3k, LL-3k	LL-AL			200k-FAST	300-600
<b>Rutile (Titania)</b>	600 or LL-600	LL-3k	LL-14k	LL-AL			300-600
<b>Syn, Emerald</b>	600 or LL-600	LL-3k	LL-14k	LL-AL			300-600
<b>Syn. Alexanderite</b>	600 or LL-600	LL-3k	LL-14k	LL-AL			300-600
<b>Syn. Corundum</b>	325 Copper	600 or LL-600	LL-3k	LL-50k	LL-AL	LL-BEAST- 200k	300-600
<b>Syn. Spinel</b>	325 Copper	600 or LL-600	LL-3k	LL-50k	LL-200k		800-2000
<b>YAG</b>	600 or LL-600	1200 or LL-1200	LL-3k	LL-AL			300-600
<b>YAG2</b>	Pav-260	Pav & Crown-600	1200	Trewax-LL-50k			1800+
<i><b>NATURAL</b></i>							800-2000
<b>Alexandrite</b>	Pav-260	Pav & Crown-600	1200	Trewax-LL-50k			1800+
<b>Andalusite</b>	600 or LL-600	LL-3k	LL-14k	LL-AL			300-600
<b>Basnaesite</b>	Pav-260	Pav & Crown-600	1200	Trewax-LL-50k			1800+
<b>Beryl</b>	Pav-260	Pav & Crown-600	1200	Trewax-LL-50k			1800+
<b>Beryl</b>	Copper-325	3k-Copper, or LL-3k	LL-CO				300-500
<b>Bytownite</b>	325-Copper	3k-Copper, or LL-3k	LL-CO				300-600
<b>Calcite</b>	1200	LL-50k w/extender					
<b>Corundum</b>	Pav-260	Pav & Crown-600	1200	Trewax-LL-50k			1800+
<b>Enstatite</b>	Pav-260	Pav & Crown-600	1200	Trewax-LL-50k			1800+
<b>Feldspar</b>	600 or LL-600	LL-3k	LL-14k	LL-CO			300-600
<b>Garnet-1</b>	Pav-260	Pav & Crown-600	1200	Trewax-LL-50k			1800+
<b>Garnet-2</b>	260	600 Nubond	LL-50k				300-600
<b>Garnet, Almandine</b>	600 or LL-600	LL-3k	LL-AL			LL-50k	300-600
<b>Garnet, Malaya</b>	600 or LL-600	LL-3k	LL-AL			LL-50k	300-600
<b>Garnet-ant hill</b>	600 or LL-600	LL-3k	LL-AL			LL-50k	300-600
<b>Garnet-rhodolite</b>	600 or LL-600	LL-3k	LL-AL			LL-50k	300-600
<b>Garnet-spessertine</b>	600 or LL-600	LL-3k	LL-AL			LL-50k	300-600
<b>Kunzite</b>	600 or LL-600	LL-3k	LL-14k	LL-CO		LL-50k	300-600
<b>Labradorite</b>	600 or LL-600	LL-3k	LL-14k	LL-CO			300-600
<b>Moldavite</b>	600 or LL-600	LL-3k	LL-CO				300-600
<b>Opal, Ethiopian</b>	600 or LL-600	LL-3k	LL-CO				300-600
<b>Opal, Mexican</b>	600 or LL-600	LL-3k	LL-CO				300-600
<b>Orthoclase</b>	600 or LL-600	LL-3k	LL-14k	LL-CO			300-600
<b>Peridot</b>	600 or LL-600	LL-3k	LL-14k	LL-AL			300-600

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Pollucite	260-1200pav	600/1200crown	LL-AL				100-200
Quartz-1	600 or LL-600	LL-3k	LL-14k	LL-CO			300-600
Quartz-2	600 or LL-600	3k-Copper, or LL-3k	LL-8k	LL-14k			300-600
Quartz-3	Pav-260	Pav & Crown-600	1200	Trewax-LL-50k			1800+
Quartz-4	260	600	1200 Nubond	LL-CO			150-250
Rutile	600 or LL-600	LL-3k	LL-14k	LL-AL			300-600
Sapphire	600 or LL-600	LL-3k	LL-14k	LL-50k	LL-AL	LL-BEAST-50K	800-2000
Scapolite	600 or LL-600	LL-3k	LL-14k	LL-CO			300-600
Scapolite2	Pav-260	Pav & Crown-600	1200	Trewax-LL-50k			1800+
Sphene	1200	LL-50k w/extender					Slow
Sphene	1200-steel	LL-Tin Oxide					Slow
Spinel	600 or LL-600	LL-3k	LL-14k	LL-AL		LL-BEAST-50K	300-600
Spinel2	Pav-260	Pav & Crown-600	1200	Trewax-LL-50k			1800+
Spodumene	600 or LL-600	LL-3k	LL-14k	LL-CO			300-600
Sunstone	600 or LL-600	LL-3k	LL-14k	LL-CO			300-600
Sunstone-2	180	1200, or LL-1200	Pink-Nubond	LL-CO			300-600
Tanzanite	600 or LL-600	LL-3k	LL-14k	LL-CO			300-600
Tanzanite2	Pav-260	Pav & Crown-600	1200	Trewax-LL-50k			1800+
Tanzanite-3	600	LL-3k	LL-14k	LL-AL			300-600
Topaz	600 or LL-600	LL-3k	LL-14k	LL-CO	LL-50k	LL-200k	300-600
Tourmaline	600 or LL-600	LL-3k	LL-14k	LL-AL			300-600
Tourmaline2	Pav-260	Pav & Crown-600	1200	Trewax-LL-50k			1800+
Zincite	600 or LL-600	LL-3k	LL-14k	LL-AL		LL-50k	300-600
Zircon	600 or LL-600	LL-3k	LL-14k	LL-AL		LL-BEAST-50K	300-600
Zircon-2	260	600	LL-8k	LL-50k			300-600

## **LIGHTNING LAP SPEEDS:**

While LL-lapping speeds vary from 300-1500+ rpm, most cutting & polishing can be done on the LL within the 300-600 rpm range. Harder stones such as corundum can be polished at much faster speeds, along with sufficient use of water coolant to prevent heat buildup in the stone.

Some of the best diamond polishing methods on the LL involves using friction-reducing Mineral Oil (baby oil), and Carnauba wax compounds, such as TREWAX, a wood floor paste wax, MOTHER's Carnauba, and ICE car finish wax, found in many hardware and auto stores. And another great diamond paste product is called The BEAST polish, an imported product available exclusively from Lightning Lap. Please refer to the LL-Instruction Sheet.

When polishing with the above amendments, a water drip should be used. The LL comes pre-treated, one-side with a high quality, 99.9% optical-grade cerium oxide coating. Use with just water. But a slurry of same quality oxide may be used as well. Apply slurry with a brush, or spray on the lap. Oxides can be applied while the LL is turning, or stationary.

For gem materials that require Aluminum Oxide as a final polish, we recommend using a slurry mix of distilled water, Woolite-as a surfactant, and 0.3 micron Aluminum oxide, or Linde A applied with a brush or spray on the Natural side of the LL.