

# PRESIDIUM<sup>®</sup>

REFRACTIVE INDEX CHART FOR  
PRESIDIUM REFRACTIVE INDEX METER II

### **What is Refractive Index (R.I.)?**

Light travels at different speeds through different types of gemstones due to structure of the stone. This affects the amount of light refraction and causes the bending of light. The slower the light's speed in the material; the greater the bending effect. The refractive index of the gemstone can be defined as the ratio between the speed of light in vacuum versus the speed of light in gemstone.

### **What do the numbers**

### **in the brackets on this chart mean?**

The numbers in the brackets indicate the tolerance level for readings derived from the product. These slight fluctuations indicating a tolerance level are necessary due to the optical sensor and electronic components in the product.

**Please note that the gemstone tested on this product must have a flat surface and should not be an opaque gemstone.**

<b>Family</b>	<b>Name of Stones</b>	<b>Refractive Index Reading</b>
	Moissanite	2.648 - 2.691
	Diamond	2.415 ( $\pm 0.005$ )
Titanium	Strontium Titanite	2.160 - 2.880
Titanium	Rutile	2.160 - 2.880
	Cubic Zirconia	2.150 - 2.180
Garnet	G.G.G. (Gadolinium Gallium Garnet)	1.970 - 2.030
	High Zircon	1.920(-0.011) - 2.010
	Sphene	1.840 - 2.110
Garnet	Y.A.G. (Yttrium Aluminium Garnet)	1.833(-0.014, +0.010)
Garnet	Spessartite	1.81 (-0.041, +0.020)
Garnet	Almandite/ Almandine	1.790 (-0.040, +0.049)
Corundum	Ruby	1.757 (-0.016) - 1.790
Corundum	Sapphire	1.757 (-0.016) - 1.790
Corundum	Synthetic Sapphire	1.757 (-0.016) - 1.790
Chrysoberyl	Alexandrite	1.740 (-0.005) - 1.763 (+0.009)
Garnet	Pyrope	1.740 (-0.020, +0.027)
Garnet	Rhodolite	1.720 - 1.760 (+0.009)
Garnet	Grossularite (Hessonite)	1.740 (-0.020, +0.027)
	Kyanite	1.710 - 1.734 (+0.019)

<b>Family</b>	<b>Name of Stones</b>	<b>Refractive Index Reading</b>
Spinel	Spinel	1.702 - 1.762
Spinel	Synthetic Spinel	1.702 - 1.762
Garnet	Garnet	1.696 - 2.030
Garnet	Grossularite	1.734 (-0.038, +0.012)
Vesuvianite	Idocrase	1.700 (-0.012) - 1.723 (+0.011)
Zoisite	Tanzanite	1.690(-0.024) - 1.700 (+0.025)
Spodumene	Kunzite	1.660 (-0.014) - 1.681 (+0.012)
	Diopside	1.660 (-0.018) - 1.730
Peridot	Peridot	1.635 - 1.703 (+0.013)
Peridot	Sinhalite	1.635 - 1.703 (+0.001)
	Tourmaline	1.603 (-0.001) - 1.666
	Topaz	1.600 - 1.643 (+0.005)
	Apatite	1.620 (-0.039) - 1.650
Beryl	Synthetic Emerald (Hydro)	1.560 - 1.565 (+0.053)
Beryl	Synthetic Emerald (Flux)	1.560 - 1.563
	Iolite	1.552 - 1.580 (+0.037)
Beryl	Emerald	1.560 (-0.008) - 1.602 (+0.010)
Feldspar	Labradorite	1.550 - 1.570 (+0.039)

<b>Family</b>	<b>Name of Stones</b>	<b>Refractive Index Reading</b>
Quartz	Ametrine	1.544 - 1.553
Beryl	Aquamarine	1.560 (-0.016) - 1.600 (+0.010)
	Scapolite	1.536 - 1.579
Feldspar	Aveturine	1.532 - 1.542
Quartz	Agate	1.530 - 1.540
Quartz	Chrysoprase	1.530 - 1.544
Quartz	Chalcedony	1.530 (-0.005) - 1.553 (+0.039)
Quartz	Amazonite	1.518 - 1.530
Quartz	Oligoclase	1.518 - 1.585
Quartz	Microline	1.514 - 1.539
Quartz	Quartz	1.513 - 1.600
Quartz	Amethyst	1.544 (-0.031) - 1.553 (+0.047)
Quartz	Citrine	1.540 (-0.027) - 1.553 (+0.047)
	Amber	1.540 (-0.037, +0.010)
Feldspar	Feldspar	1.490 - 1.609
Feldspar	Orthoclase	1.518 (-0.028) - 1.530 (+0.011)
	Lapis Lazuli (Lazurite)	1.550 (-0.040) - 1.550
	Fluorite	1.432 ( $\pm$ 0.002)

### **Important Note**

All testers have been calibrated during the manufacturing process and requires no further adjustment or user intervention. Self-calibration should not be attempted and is not advised.

To minimize any risks associated, users should contact Presidium at [service@presidium.com.sg](mailto:service@presidium.com.sg) or its service center for assistance.

In the event that users require the manufacturer to re-calibrate the unit, users will have to bear the associated to and fro freight cost for shipping of the unit to the Presidium service center.

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