

PRESIDIUM[®]

REFLECTIVE INDEX REFERENCE CHART FOR
PRESIDIUM DUO TESTER II (PDT II)

How does your Presidium tester work to get R.I. values?

Reflective indices developed by Presidium can be matched in this table to the corresponding common Refractive Index values to get the R.I value of the gemstone.

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.

Gemstone	Reflective Index on PDTII/PRM	Refractive Index
Fluorite	16 - 18	1,434 - 1,434
Opal	17 - 19	1,450 - 1,450
Glass	17 - 54	1,440 - 1,900
Plastic	18 - 38	1,460 - 1,700
Sodalite	19 - 21	1,483 - 1,483
Lapis-lazuli	20 - 23	1,500 - 1,500
Moldavite	20 - 23	1,500 - 1,500
Obsidian	20 - 23	1,500 - 1,500
Calcite	20 - 35	1,486 - 1,658
Coral	20 - 35	1,486 - 1,658
Albite Feldspar	22 - 25	1,525 - 1,536
Microline Feldspar	22 - 25	1,522 - 1,530
Orthoclase Feldspar (Moonstone)	22 - 25	1,518 - 1,526
Chalcedony	23 - 25	1,535 - 1,539
Amber	23 - 26	1,540 - 1,540
Ivory	23 - 26	1,540 - 1,540
Oligoclase Feldspar	23 - 26	1,539 - 1,547
Lolite	23 - 27	1,542 - 1,551
Quartz	23 - 27	1,544 - 1,553
Labradorite Feldspar	24 - 28	1,559 - 1,568
Scapolite	24 - 28	1,550 - 1,572
Synthetic Emerald (Flux)	25 - 27	1,561 - 1,564
Serpentine	25 - 28	1,560 - 1,570
Synthetic Emerald (Hydro)	25 - 28	1,568 - 1,573
Beryl	26 - 29	1,577 - 1,583

Gemstone	Reflective Index on PDTII/PRM	Refractive Index
Emerald	26 - 29	1,580 - 1,580
Verdite	26 - 29	1,580 - 1,580
Brazilianite	27 - 32	1,602 - 1,621
Rhodochrosite	27 - 48	1,597 - 1,817
Actinolite	28 - 33	1,614 - 1,642
Nephrite	28 - 33	1,606 - 1,632
Turquoise	28 - 34	1,610 - 1,650
Topaz (Blue, White)	29 - 32	1,619 - 1,627
Danburite	29 - 33	1,630 - 1,636
Tourmaline	29 - 34	1,624 - 1,644
Andalusite	30 - 33	1,634 - 1,643
Apatite	30 - 34	1,642 - 1,646
Synthetic Spinel	30 - 36	1,730 - 1,730
Peridot	31 - 37	1,654 - 1,690
Diopase	31 - 39	1,655 - 1,708
Jet	32 - 35	1,660 - 1,660
Jadeite	32 - 36	1,660 - 1,680
Kornerupine	32 - 36	1,667 - 1,680
Spodumene (Kunzite)	32 - 36	1,660 - 1,676
Sinhalite	32 - 39	1,668 - 1,707
Malachite	32 - 55	1,660 - 1,910
Diopside	33 - 38	1,675 - 1,701
Zoisite (Tanzanite)	34 - 38	1,691 - 1,704
Sapphire	34 - 40	1,670 - 1,770
Synthetic Corundum	34 - 40	1,762 - 1,770

Gemstone	Reflective Index on PDTII/PRM	Refractive Index
Corundum	34 - 43	1,762 - 1,770
Idocrase	35 - 39	1,713 - 1,718
Spinel	36 - 39	1,718 - 1,718
TL Grossularite Garnet	36 - 40	1,720 - 1,720
Kyanite	36 - 41	1,716 - 1,731
Rhodonite	37 - 41	1,730 - 1,740
TP Grossularite Garnet (Hessonite)	37 - 41	1,740 - 1,740
Chrysoberyl (Alexandrite)	38 - 42	1,746 - 1,755
Pyrope Garnet	38 - 42	1,746 - 1,746
Rhodolite Garnet	39 - 43	1,760 - 1,760
Benitoite	39 - 47	1,757 - 1,804
Almandite Garnet	41 - 45	1,790 - 1,790
Y.A.G.	41 - 46	1,833 - 1,833
Spessartite Garnet	43 - 47	1,810 - 1,810
Zircon (Low)	43 - 47	1,810 - 1,815
Andradite Garnet (Demantoid)	47 - 52	1,875 - 1,875
Zircon (High)	47 - 54	1,925 - 1,984
Sphene	49 - 66	1,900 - 2,034
G.G.G.	52 - 57	2,030 - 2,030
Cubic Ziconia Oxide	65 - 72	2,177 - 2,177
Strontium Titanate	73 - 85	2,409 - 2,409
Diamond	87 - 96	2,417 - 2,417
Synthetic Moissanite	100 - 116	2,650 - 2,650
Synthetic Rutile	102 - 134	2,616 - 2,903
Hematite	124 - 157	2,940 - 3,220

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 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.

Presidium Instruments

Unit 7, 207 Henderson Road Singapore 159550

www.presidium.com.sg