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**AMTIR-4 Supplemental Datasheet Notes for use with
Zemax Optic Studio Software and Synopsis Code-V Optical Design Software**

The following information is provided for optical design engineers using AMTIR-4 glass. The coefficients provided are based on the use of the Sellmeier-1 equation for Room Temperature at time of index measurement, whereby, the value "1" found in the (n_{λ}^2-1) term is actually the original Sellmeier Type-1 variable " K_0 " term. (i.e., K_0 is forced to be equal to 1 to accommodate OS software requirements.)

$$(n_{\lambda}^2-1) = K_1 * (\lambda^2/(\lambda^2-L_1)) + K_2 * (\lambda^2/(\lambda^2-L_2)) + K_3 * (\lambda^2/(\lambda^2-L_3))$$

Zemax Optic Studio Sellmeier-1 Coefficients		Statistics of Fit	
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K_1	-12.1870831080	S1	0.00000
L_1	0.1410057393	S2	788.9875
K_2	18.9234209548	S3	788.9875
L_2	0.1279600479	R2	1.00000
K_3	0.8706406978	V2	0.00005
L_3	1480.74401797		
K_0	1.0000000000		

AMTIR-2 RT 20 °C Measured Index Data vs Sellmeier-1 Calculated Data

Wavelength (λ , μm)	Index Measured	Index Using Coefficients	Index Difference
1.0000	2.91759	2.91753	-0.00006
2.0000	2.81288	2.81319	0.00031
3.0000	2.79450	2.79463	0.00013
4.0000	2.78769	2.78766	-0.00003
5.0000	2.78385	2.78381	-0.00004
6.0000	2.78119	2.78105	-0.00014
7.0000	2.77882	2.77865	-0.00017
8.0000	2.77641	2.77633	-0.00008
9.0000	2.77397	2.77392	-0.00005
10.0000	2.77135	2.77134	-0.00001
11.0000	2.76849	2.76852	0.00003
12.0000	2.76536	2.76540	0.00004
13.0000	2.76187	2.76194	0.00007

AMTIR-2 Thermal Optical Coefficient Data

$$\Delta n_\lambda = ((n_\lambda^2 - 1)/(2n_\lambda)) \times [D_0 \Delta T + D_1(\Delta T)^2 + D_2(\Delta T)^3 + ((E_0 \Delta T + E_1(\Delta T)^2)/(\lambda^2 - S_{TK}(\lambda_{TK})^2))]$$

Zemax Optic Studio Sellmeier-1 Thermal Coefficients		Statistics of Fit	
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D₀	3.18309267E-05	S1	0.0000E+00
D₁	7.35799785E-09	S2	7.5083E-05
D₂	2.61916015E-10	S3	7.5083E-05
E₀	1.21511025E-04	R2	1.0000E+00
E₁	-1.91244488E-07	V2	0.0000E+00
S_{KT}	1.00000000E+00		
λ_{KT}	1.52567154E+01		

Δn/ΔT Comparison of Measured Data 5th Order Polynomial Fit to Zemax Optic Studio Equation Fit using Thermal Coefficients

λ (um)	Temp (°C, ref.)	Index (n, ref.)	Temp (°C, Final)	ΔT (°C)	Δn Calculated	Δn/ΔT Optic Studio	Δn/ΔT Meas. Data Fit	Δn/ΔT Difference
1	20	2.91753	80	60	0.002529	4.21E-05	4.85E-05	-0.000006
2	20	2.81319	80	60	0.002414	4.02E-05	4.49E-05	-0.000005
3	20	2.79463	80	60	0.002392	3.99E-05	4.21E-05	-0.000002
4	20	2.78766	80	60	0.002383	3.97E-05	3.98E-05	0.000000
5	20	2.78381	80	60	0.002377	3.96E-05	3.82E-05	0.000001
6	20	2.78105	80	60	0.002372	3.95E-05	3.70E-05	0.000002
7	20	2.77865	80	60	0.002367	3.94E-05	3.64E-05	0.000003
8	20	2.77633	80	60	0.002360	3.93E-05	3.60E-05	0.000003
9	20	2.77392	80	60	0.002352	3.92E-05	3.60E-05	0.000003
10	20	2.77134	80	60	0.002342	3.90E-05	3.60E-05	0.000003
11	20	2.76852	80	60	0.002328	3.88E-05	3.61E-05	0.000003
12	20	2.76540	80	60	0.002306	3.84E-05	3.59E-05	0.000002
13	20	2.76194	80	60	0.002267	3.78E-05	3.55E-05	0.000002
14	20	2.75810	80	60	0.002172	3.62E-05	3.46E-05	0.000002

Graphical Presentation of AMTIR-2 Thermal Coefficient $\Delta n/\Delta T$ Data

