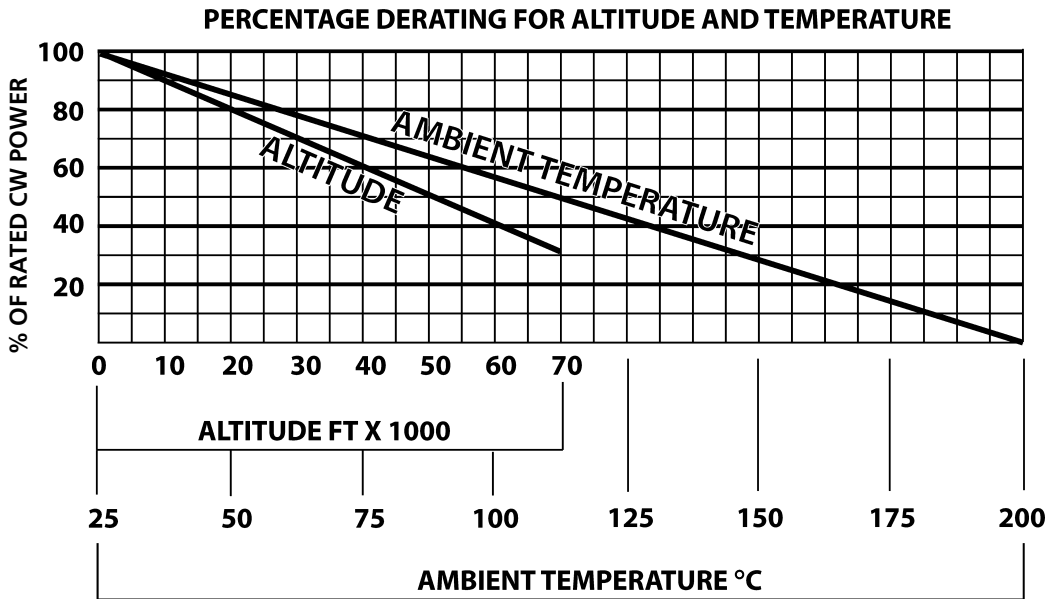


Coaxial Cable Derating for Altitude & Temperature



Example:

If cable in question is rated for **200 watts @ 25° C** at a given frequency, the capability at 40,000 feet altitude and 50° C is found as follows:

From charts, the derating for 40,000 feet altitude is 60% or 0.60, and for 50° C temperature is ≈87% or 0.87. Using the formula shown, the power handling capability is:

$$\text{Power Capability} = (200) \times (0.87) \times (0.60) = 105 \text{ Watts}$$

$$\text{CABLE POWER CAPABILITY} = (\text{RATED POWER}) \times (\text{AMBIENT DERATING}) \times (\text{ALTITUDE DERATING})$$

The Effect of VSWR on Transmitted Power

VSWR	Return Loss (dB)	Trans. Loss (dB)	Volt. Refl. Coeff.	Power Tans. (%)	Power Refl. (%)	VSWR	Return Loss (dB)	Trans. Loss (dB)	Volt. Refl. Coeff.	Power Tans. (%)	Power Refl. (%)	VSWR	Return Loss (dB)	Trans. Loss (dB)	Volt. Refl. Coeff.	Power Tans. (%)	Power Refl. (%)
1.00	∞	.000	.00	100.00	.0	1.34	16.8	.093	.15	97.9	2.1	1.98	9.7	.497	.33	89.2	10.8
1.01	46.1	.000	.00	100.00	.0	1.36	16.3	.102	.15	97.7	2.3	2.00	9.5	.512	.33	88.9	11.1
1.02	40.1	.000	.01	100.00	.0	1.38	15.9	.112	.16	97.5	2.5	2.50	7.4	.881	.43	81.6	18.4
1.03	36.6	.001	.01	100.00	.0	1.40	15.6	.122	.17	97.2	2.8	3.00	6.0	1.249	.50	75.0	25.0
1.04	34.2	.002	.02	100.00	.0	1.42	15.2	.133	.17	97.0	3.0	3.50	5.1	1.603	.56	69.1	30.9
1.05	32.3	.003	.02	99.9	.1	1.44	14.9	.144	.18	96.7	3.3	4.00	4.4	1.938	.60	64.0	36.0
1.06	30.4	.004	.03	99.9	.1	1.46	14.6	.155	.19	96.5	3.5	4.50	3.9	2.255	.64	59.5	40.5
1.07	29.4	.005	.03	99.9	.1	1.48	14.3	.166	.19	96.3	3.7	5.00	3.5	2.553	.67	55.6	44.4
1.08	28.3	.006	.04	99.9	.1	1.50	14.0	.177	.20	96.0	4.0	5.50	3.2	2.834	.69	52.1	47.9
1.09	27.3	.008	.04	99.8	.2	1.52	13.7	.189	.21	95.7	4.3	6.00	2.9	3.100	.71	49.0	51.0
1.10	26.4	.010	.05	99.8	.2	1.54	13.4	.201	.21	95.5	4.5	6.50	2.7	3.351	.73	46.2	53.8
1.11	25.7	.012	.05	99.7	.3	1.56	13.2	.213	.22	95.2	4.8	7.00	2.5	3.590	.75	43.7	56.2
1.12	24.9	.014	.06	99.7	.3	1.58	13.0	.225	.22	94.9	5.1	7.50	2.3	3.817	.76	41.5	58.5
1.13	24.3	.016	.06	99.6	.4	1.60	12.7	.238	.23	94.7	5.3	8.00	2.2	4.033	.78	39.5	60.5
1.14	23.7	.019	.07	99.6	.4	1.62	12.5	.250	.24	94.4	5.6	8.50	2.1	4.240	.79	37.7	62.3
1.15	23.1	.021	.07	99.5	.5	1.64	12.3	.263	.24	94.1	5.9	9.00	1.9	4.437	.80	36.0	64.0
1.16	22.6	.024	.07	99.5	.5	1.66	12.1	.276	.25	93.8	6.2	9.50	1.8	4.626	.81	34.5	65.5
1.17	22.1	.027	.08	99.4	.6	1.68	11.9	.289	.25	93.6	6.4	10.00	1.7	4.807	.82	33.1	66.9
1.18	21.7	.030	.08	99.3	.7	1.70	11.7	.302	.26	93.3	6.7	11.00	1.6	5.149	.83	30.6	69.4
1.19	21.2	.033	.09	99.2	.8	1.72	11.5	.315	.26	93.0	7.0	12.00	1.5	5.466	.85	28.4	71.6
1.20	20.8	.036	.09	99.2	.8	1.74	11.4	.329	.27	92.7	7.3	13.00	1.3	5.762	.86	26.5	73.5
1.21	20.4	.039	.10	99.1	.9	1.76	11.2	.342	.28	92.4	7.6	14.00	1.2	6.042	.87	24.9	75.1
1.22	20.1	.043	.10	99.0	1.0	1.78	11.0	.356	.28	92.1	7.9	15.00	1.2	6.301	.88	23.4	76.6
1.23	19.7	.046	.10	98.9	1.1	1.80	10.9	.370	.29	91.8	8.2	16.00	1.1	6.547	.88	22.1	77.9
1.24	19.4	.050	.11	98.9	1.1	1.82	10.7	.384	.29	91.5	8.5	17.00	1.0	6.780	.89	21.0	79.0
1.25	19.1	.054	.11	98.8	1.2	1.84	10.6	.398	.30	91.3	8.7	18.00	1.0	7.002	.89	19.9	80.1
1.26	18.8	.058	.12	98.7	1.3	1.86	10.4	.412	.30	91.0	9.0	19.00	.9	7.212	.90	19.0	81.0
1.27	18.5	.062	.12	98.6	1.4	1.88	10.3	.426	.31	90.7	9.3	20.00	.9	7.413	.90	18.1	81.9
1.28	18.2	.066	.12	98.5	1.5	1.90	10.2	.440	.31	90.4	9.6	25.00	.7	8.299	.92	14.8	85.2
1.29	17.9	.070	.13	98.4	1.6	1.92	10.0	.454	.32	90.1	9.9	30.00	.6	9.035	.94	12.5	87.5
1.30	17.7	.075	.13	98.3	1.7	1.94	9.9	.468	.32	89.8	10.2						
1.32	17.2	.083	.14	98.1	1.9	1.96	9.8	.483	.32	89.5	10.5						