

## Reference values for holmium oxide other than 1 nm – Tech Information

When dealing with reference values (nm) that aren't explicitly listed as bandwidths, you have a couple of options:

1. **Interpolation:** You can interpolate between the provided values. This means estimating the value based on the known data points. It's a useful approach when you need a precise value within the given range.
2. **Next Value Approximation:** Alternatively, you can use the next higher value as an approximation. Since the official values typically vary only in the third or fourth significant figure, this slight difference won't be detectable given the instrument's accuracy of 1-2 nm.

*If your reference value (nm) isn't specifically listed as a bandwidth, you can interpolate between both values or use the next value higher as an approximation. The difference is minimal, as the official values only vary in the third or fourth significant figure. Given the instrument's accuracy of 1-2 nm, these variations won't be detectable.*

Table 1. SRM 2034 Certified Wavelengths (nm) of Minimum Transmittance and Uncertainties<sup>(a)</sup> for 14 Bands at Six Spectral Bandwidths, Referenced to Air

Band No.	0.1 nm	0.3 nm	0.5 nm	1 nm	2 nm	3 nm
1	240.97 ± 0.05	240.98 ± 0.05	241.02 ± 0.05	241.12 ± 0.05	241.12 ± 0.05	241.04 ± 0.05
2	249.78 ± 0.05	249.79 ± 0.05	249.81 ± 0.05	249.89 ± 0.05	250.03 ± 0.05	250.07 ± 0.05
3	278.15 ± 0.05	278.15 ± 0.05	278.15 ± 0.05	278.13 ± 0.05	278.10 ± 0.05	278.05 ± 0.05
4	287.03 ± 0.05	287.04 ± 0.05	287.08 ± 0.05	287.22 ± 0.05	287.52 ± 0.05	287.57 ± 0.05
5	333.48 ± 0.04	333.47 ± 0.05	333.47 ± 0.05	333.48 ± 0.05	333.47 ± 0.05	333.47 ± 0.05
6	345.46 ± 0.05	345.45 ± 0.05	345.43 ± 0.05	345.38 ± 0.05	345.42 ± 0.05	345.53 ± 0.05
7	361.27 ± 0.05	361.27 ± 0.05	361.27 ± 0.05	361.25 ± 0.05	361.12 ± 0.05	361.11 ± 0.05
8	385.36 ± 0.05	385.39 ± 0.04	385.45 ± 0.04	385.61 ± 0.04	385.80 ± 0.04	386.00 ± 0.04
9	416.02 ± 0.05	416.04 ± 0.05	416.07 ± 0.05	416.25 ± 0.05	416.57 ± 0.05	416.89 ± 0.05
10	----- <sup>(b)</sup>	----- <sup>(b)</sup>	----- <sup>(b)</sup>	451.45 ± 0.05	451.32 ± 0.04	451.36 ± 0.04
11	467.78 ± 0.04	467.79 ± 0.04	467.80 ± 0.04	467.82 ± 0.04	467.90 ± 0.04	468.11 ± 0.04
12	485.20 ± 0.04	485.21 ± 0.04	485.21 ± 0.04	485.23 ± 0.04	485.25 ± 0.04	485.21 ± 0.04
13	536.42 ± 0.04	536.43 ± 0.04	536.45 ± 0.04	536.56 ± 0.04	536.86 ± 0.04	537.21 ± 0.04
14	640.41 ± 0.04	640.41 ± 0.04	640.43 ± 0.04	640.50 ± 0.04	640.79 ± 0.04	641.15 ± 0.04

<sup>(a)</sup> The uncertainties represent  $U_{95}$ , the expanded uncertainty calculated in accordance with reference 1.

<sup>(b)</sup> The wavelengths for the three narrowest spectral bandwidths for Band No. 10 are not given because this band resolves into two transmittance minima for spectral bandwidths of nominally less than 1 nm.

<sup>a</sup> For information only. Cell = 1.0 cm; Ref = H<sub>2</sub>O

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