

Air Temperature Methodology

(Last rev. 18/05/2022)

Air temperature and relative humidity are measured electronically using combination sensors housed in naturally aspirated radiation shields*

*(From the manufacturer: the naturally aspirated 6 and 10-plate radiation shields' louvered construction allows air to pass freely through the shield, keeping the probe at or near ambient temperature. The shields' white color reflects solar radiation.)

Since 1990's, different sensors have been used. From 1995 to 2001 the Viasala HMP35C was used (see Temp_Hum_Probe_Model_hmp35c.pdf). From 2001 to 2010 the Viasala HMP45C was used (see Figure 1 and Temp_Hum_Probe_Model_hmp45c.pdf). Since 2010 the CS215 sensor has been in use (see Figure 2 and Temp_Hum_Probe_Model_cs215.pdf).

Air temperature and relative humidity are sampled every 10 seconds. The average, minimum and maximum values are recorded at the end of every 15-minute interval.

Sensor elements are replaced every year according to the manufacture's recommendations.

The original Temperature/humidity sensors were located at a height of ~25m.

The original crane was dismantled in 2021 and a new crane, located approximately 10m away, was put into operation in January of 2022. The new crane is taller (~70m) compared to the original crane (~60m). The new Temp/hum sensor is located at the top of the crane, and it is a certainty that the change in location will result in very different values. The 25m and CraneTop data are treated as separate data series.

Unfortunately, there are no overlapping data between the old and new locations that could be used to derive a correlation between them.

Figure 1



PNM tower showing met. station approximately at the middle of the tower