

## Draft 2 Version 3.0 Light Commercial HVAC Comment Matrix

Topic	Comment	Response
Support of EPA alignment with CEE Tiers	Two stakeholders support EPA's alignment with CEE Tiers	EPA appreciates the comments submitted regarding alignment with CEE Tiers
Align COP at 47°F with CEE Tier 1 for 135,000-240,000 Btu/h HP	Two stakeholders recommend aligning COP at 47°F with CEE Tier 1 for Large Heat Pumps	Upon further reflection, EPA is aligning COP at 47°F for large heat pumps with CEE. COP at 47°F of 3.2 is less than the current Version 2.2 requirement, but market influence of shared specifications is more important than a slight decrease in one of four metrics.
Keep IEER levels, but eliminate full-load metric and COP at 17°F for VRF	Two stakeholders recommend keeping the IEER levels proposed for VRF in Draft 2, but eliminating EER and COP at 17°F criteria.	EER requirements are useful for utilities looking to address peak performance. COP at 17°F requirements were cited to offer no additional burden during the Draft 1 comment period, but EPA appreciates being made aware that COP at 17°F is an optional requirement in the AHRI Directory. There is a large percentage of VRF models that are capable of meeting all VRF requirements posed in Draft 2, and all VRF models in scope currently have a reported COP at 17°F metric in the AHRI Directory. However, in recognition that there may be some capacities where meeting all metrics is difficult given the small number of VRF models, EPA proposes eliminating COP at 17°F requirements for VRF. As VRF gains market share, EPA anticipates including COP at 17°F requirements for VRF in future specification versions.
Align VRF levels with CEE Tier 1	One stakeholder recommends maintaining all performance metrics (IEER, EER, COP at 47°F, COP at 17°F), but align VRF levels with CEE Tier 1 for VRF. One stakeholder recommends aligning with CEE Tier 1 for VRF, but only requiring IEER and COP at 47°F.	EPA strives to coordinate with CEE, as applicable, to increase the market power of both specifications. However, CEE Tier 1 does not provide adequate differentiation of highly efficient VRF products compared to less efficient VRF products, especially when considering IEER (part load operation). In addition, with CEE set to update their specification soon, the value of alignment in this relatively fast moving product group is dubious. Regarding COP47 however, EPA has decided to reduce the proposed value from 3.3 to 3.2 for the same reason as with large heat pumps.
Support COP at 17°F as a performance requirement and harmonize COP at 17°F with CEE	One stakeholder supports EPA's decision to include both COP at 47°F and COP at 17°F as performance requirements and harmonize with the CEE Commercial Large Unitary Heat Pump Specification	EPA appreciates the comments regarding the benefits of requiring COP at 17°F as a performance requirement. Upon further reflection, EPA agrees that the small reduction in one of several metrics (from the proposed value of 3.3 to 3.2 for COP47) is justified by the increased market power of coordinated requirements.
More stringent IEER requirements for Heat Pumps and Large VRF	One stakeholder suggests aligning IEER criteria for the ≥65,000 Btu/h and <135,000 Btu/h Heat Pump category with CEE Tier 2. The same stakeholder suggests that IEER for the ≥135,000 Btu/h and <240,000 Btu/h Heat Pump category be 0.8 less than that of comparable-sized air conditioners instead of 1.2 as it is now. The same stakeholder suggests IEER criteria for ≥135,000 and <240,000 Btu/h VRF increase to 16.9 for units without heat recovery and 16.7 for units with heat recovery.	EPA appreciate the technical basis for these recommendations, but the Draft 2 proposal was based on market dynamics, which are important to the success of the specification. As such, EPA is retaining the Draft 2 proposed levels.
Approve sampling approach	Two stakeholders support EPA's sampling approach proposal in Draft 2 and one stakeholder offered to work with EPA to craft the modified approach.	EPA appreciates the comments submitted regarding the proposed sampling approach.