NEW Mandatory Energy Labelling Scheme (MELS) & Minimum Energy Performance Standards (MEPS) for 3-Phase Variable Refrigerant Flow (VRF) Air-Conditioners

With effect from 1 April 2021, all 3-phase VRF air conditioners sold in Singapore shall be registered with NEA and meet the minimum energy performance standards and carry Energy Labels. Please refer to the table below for more details.

Types of Air-conditioners Covered	3-Phase variable refrigerant flow (VRF) air-conditioners of all cooling capacities (base cooling units).
Requirements	3-Phase VRF air-conditioners are rated based on: 1) Minimum Energy Performance Standards (MEPS) level at Integrated Energy Efficiency Ratio (IEER[1]) of 4.35; and 2) The number of ticks (1-tick to 5-tick, with 5-tick being the most efficient) determined for the VRF air-conditioner model.
Registration	Importers and manufacturers (suppliers) of 3-Phase VRF air-conditioners that are covered under these requirements must register themselves and their VRF air-conditioner models with NEA. Please refer to the following links for more information on the registration process: 1) Registration of suppliers 2) Registration of 3-Phase VRF air-conditioners (ELS online portal)
Registration Fees	New registration: $85 per VRF air-conditioner model Renewal: $55 per VRF air-conditioner model Each registration is valid for 3 years.
Test standards	3-phase VRF (base cooling units) shall be tested according to: 1) ISO 15042:2017 (Air enthalpy Method, Calorimeter Method) Test condition: T1 - Standard cooling capacity rating conditions for moderate climates to determine the efficiency at 100%, 75%, 50% and 25% cooling load. Only cassette type indoor units and minimum 2 number of indoor units are to be used during test. Any test report from one of the following laboratories is accepted: 1) Manufacturers' in-house test laboratories; 2) Test laboratories that have been accredited by the Singapore Accreditation Council (SAC) to carry out the test in accordance with the applicable test standards; or 3) Overseas test laboratories that have been accredited by their local accreditation bodies and have signed a Mutual Recognition Arrangement with SAC to carry out the test in accordance with the applicable test standards. Test Report must be prepared in NEA format for registration. The test report templates can be downloaded **here** (Please select applicable test report template for 3-Phase VRF air-conditioners).

Display of Energy Label	A registered supplier is required to display the following information. a) Energy label to be displayed on the three-phase VRF outdoor/condensing units. b) Energy label to be displayed in all locally circulated publicity materials (digital & non-digital) such as local websites, newspapers advertisements and promotional flyers.

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Annex A

1 The Energy Label and rating system for VRF air-conditioners are as shown in Diagram 1 and Table 1.

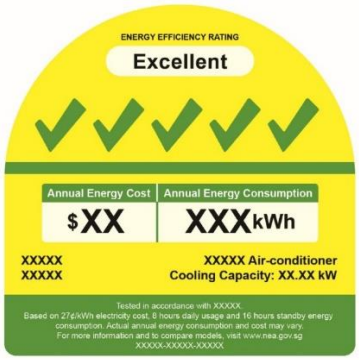

Diagram 1: Example of Energy label for VRF Air-conditioner

Tick rating	VRF efficiency, IEER[1]
5 - tick	IEER 6.15 and above
4 - tick	IEER 5.70 to < IEER 6.15
3 - tick	IEER 5.25 to < IEER 5.70
2 - tick	IEER 4.80 to < IEER 5.25
1 - tick	IEER 4.35 to < IEER 4.80

Table 1: Energy rating system for VRF air-conditioners

[1] IEER is defined as (0.020*COP 100%) + (0.617* COP 75%) + (0.238* COP 50%) + (0.125* COP 25%), where Coefficient of Performance (COP) is defined as ratio of cooling capacity to effective power consumption at a given set of rating conditions.