



**United
Technologies**

Climate | Controls | Security

Carrier Cassette – 2018 Portfolio Product Changes and Improvements

6th February, 2018

BEE LABELLING – PROGRAM UPDATE

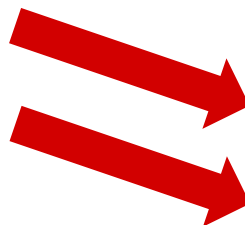


1st Jan 2016 – 31st Dec 2017

| Star Rating | EER (W/W) | |
|-------------|-----------|---------|
| | Minimum | Maximum |
| 5 Star***** | 3.50 | |
| 4 Star**** | 3.30 | 3.49 |
| 3 Star*** | 3.10 | 3.29 |
| 2 Star** | 2.90 | 3.09 |
| 1 Star* | 2.70 | 2.89 |

1st Jan 2018 – 31st Dec 2019

| Star Rating | ISEER | |
|-------------|---------|---------|
| | Minimum | Maximum |
| 5 Star***** | 4.50 | |
| 4 Star**** | 4.00 | 4.50 |
| 3 Star*** | 3.50 | 3.99 |
| 2 Star** | 3.30 | 3.49 |
| 1 Star* | 3.10 | 3.29 |



Bureau of Energy Efficiency (BEE) has come out with new regulation of star labelling of products w.e.f. 1st Jan 2018, wherein labelling standards for fixed speed AC's have been made more stringent.

If the same unit from 2017 is re-labelled in 2018, there will be a drop of 2 stars in efficiency rating

Carrier Cassettes have been re-engineered to either retain or improve star labelling in 2018-19

CASSETTE – PORTFOLIO UPDATE



2017

2018

| | | | | | |
|-------|---|-----|-------|-----|-------|
| 1.5TR | | R22 | - | R22 | R410A |
| | | - | R410A | R22 | - |
| 2.0TR | | R22 | - | R22 | R410A |
| | | - | R410A | R22 | - |
| 3.0TR | - | R22 | R410A | R22 | R410A |
| 4.0TR | - | R22 | R410A | R22 | R410A |

CASSETTE – PORTFOLIO UPDATE

2017



| Capacity (TR) | 1.5 | 2.0 |
|---------------|-------|-------|
| R22 Unit | Green | Green |
| R410A Unit | Green | |

Small Chassis

Old Grille



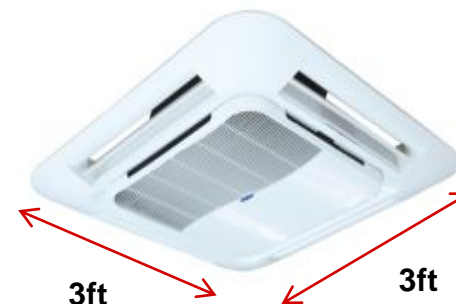
| Capacity (TR) | 2.0 | 3.0 | 4.0 |
|---------------|-------|-------|-------|
| R22 Unit | | Green | Green |
| R410A Unit | Green | Green | Green |

Large Chassis

Grille Options Old/ New



2018



| Capacity (TR) | 1.5 | 2.0 | 3.0 | 4.0 |
|---------------|-------|-------|-------|-------|
| R22 Unit | Green | Green | Green | Green |
| R410A Unit | Green | Green | Green | Green |

Large Chassis

New Grille

Lower Noise

Uniform chassis and grille for complete range*

*Old grille to be discontinued w.e.f. Jan 2018
No change in ODU dimensions

CASSETTE – IMPROVED EFFICIENCY



**2017
Efficiency - ISEER**

**2018
Efficiency - ISEER**

| | | | |
|----------------|-------|--|---|
| R22 Range | 1.5TR |  3.00 |  3.40  13% |
| | |  3.60  20% | |
| | 2.0TR |  3.00 |  3.38  13% |
| | |  3.60  20% | |
| R410A Range | 1.5TR |  3.15 |  3.40  8% |
| | 2.0TR |  3.15 |  3.38  7% |










Improved efficiency to ensure reduced energy bills

CASSETTE – IMPROVED AIRFLOW



**2017
Airflow - CFM**

**2018
Airflow - CFM**

| | | | | |
|----------------|-------|--|--|--|
| R22 Range | 1.5TR |  440 |  590 |  34% |
| | 2.0TR |  570 |   730 |  28% |
| R410A Range | 1.5TR |  440 |  590 |  34% |


















Higher CFM eliminates earlier airflow gap, and helps achieve better cooling effect & lower noise*

CASSETTE – IMPROVED TONNAGE



**2017
Actual Cap. - TR**

**2018
Actual Cap. - TR**

| | | | |
|----------------|-------|---|--|
| R22 Range | 1.5TR |  1.5TR |  1.5TR |
| | |  1.6TR  4% | |
| | 2.0TR |  1.9TR |  2.0TR  7% |
| | |  2.1TR  10% | |
| R410A Range | 1.5TR |  1.45TR |  1.5TR  3% |
| | 2.0TR |  1.8TR |  1.9TR  4% |




Improved tonnage has filled the earlier capacity gap

CASSETTE – OTHER CHANGES

Interconnecting Tubes

| | 2017 | 2018 |
|-------|------|------|
| 1.5TR | ✓ | ✗ |
| 2.0TR | ✓ | ✗ |
| 3.0TR | ✗ | ✗ |
| 4.0TR | ✗ | ✗ |



Interconnecting tubes removed uniformly from factory scope for all models

High Efficiency Components

2017



2018



- *Introduction of new high efficiency compressors*
- *New improved condenser coils with multi pass circuiting*