

**TRxxxxx5**

TEST REPORT

Wellbeing & SDA

Engineering and R&D

Test Laboratory

**Blender Performance evaluation**

|  |  |  |  |
| --- | --- | --- | --- |
| **Product:**  Blender | **Project:**  xxxxx | **Lot:**  xxxxx | **Released:**  dd/mm/aaaa |
| **Requested by:**  llllll | **Performed by:**  Aline Pontes  Leticia Vitória | **Reviewed by**:  Name | **Approved by:**  Ronaldo Muno |

RESUME/CONCLUSION

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **FINAL RESULTS** | | | | | |
| **Test** | **Sample / Description** | | **Requirement** | **Measured** | **Result** |
| Performance | Power input | |  |  |  |
| Heating test | | Pass |  |  |
| Marking | | Pass |  |  |
| Rotation | | REF |  |  |
| Jar leakage | | No leakage |  |  |
| Jar overflow | | No overflow |  |  |
| Food blending | Carrots | Minimum | ≥ 80% - @ 4 mm |  |  |
| Medium | ≥ 95% - @ 4 mm |  |  |
| Maximum | ≥ 95% - @ 4 mm |  |  |
| Vegetables | Minimum | ≥ 85% - @ 4 mm |  |  |
| Medium | ≥ 90% - @ 4 mm |  |  |
| Maximum | ≥ 90% - @ 4 mm |  |  |
| Banana smoothie | Minimum | ≥ 90% - @ 2 mm |  |  |
| Medium | ≥ 90% - @ 2 mm |  |  |
| Ice crushing | 100 g | ≥ 95% |  |  |
| 200 g | ≥ 95% |  |  |
| Mayonnaise | Recipe whole egg | REF |  |  |
| Recipe egg yolk | REF |  |  |
| Cake dough | 950 g | REF |  |  |

REPORT

# OBJECTIVE:

Evaluate the samples 127 and 220 V of the model xxxxxx.

# REFERENCE DOCUMENTS:

* IP 152 - Blender performance Rev. 1 (https://electrolux.sharepoint.com/sites/SGI).
* IEC 60619 – Electrically operated food preparation appliances measuring methods ed. 2 (1993).

# SAMPLES DESCRIPTION:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | | Foto base frente | | Foto base costas | Foto base cima | Foto base baixo |
|  | | Produto inteiro frente com jarra blender | | Produto inteiro lado com jarra blender | Produto inteiro costas com jarra blender | Produto inteiro lado com jarra blender |
|  | | Jarra lado | | Jarra frente | Jarra cima | Jarra embaixo |
| Product | | Blender | | | | |
| Accessories | |  | | | | |
| Model | | xxxxx | | | | |
| Voltage | | 127 V / 60 Hz – 220 V / 60 Hz | | | | |
| Dimensions | | HxWxD 🡪 | | | | |
| Supplier | |  | | | | |
| Quantity | | 2 | | | | |
| Volume | | Blender jar: x l - Processor jar: x l | | | | |

# TEST RESULT:

## Power and Heating test

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sample | Load | Time of operation | Speed | Peak (W) | Mean (W) |
| 127 V | Carrots: 2/5 of jar volumeWater: 3/5 of jar volume | 60 s | Maximum |  |  |
| Carrots: 3/5 of jar volumeWater: 2/5 of jar volume | 10 s |  |  |
| 220 V | Carrots: 2/5 of jar volumeWater: 3/5 of jar volume | 60 s |  |  |
| Carrots: 3/5 of jar volumeWater: 2/5 of jar volume | 10 s |  |  |

Table 1 – Power input

|  |  |
| --- | --- |
| Power 127 V | Power max 127 V |

Figure 1 – Power input for sample 127 V

|  |  |
| --- | --- |
| Power 220 V | Power max 220 V |

Figure 2 – Power input for sample XXXX

* The heating test were done on nominal voltage. The motor has **class F** of insulation and tolerance of **115 K** of rising temperature.
* The usable volume reference for the heating test was **1,75 liters**.
* Both samples of motor were **REPROVED/APPROVED**.
* 3 thermocouples were placed on different positions on the motor windings, but the graph shows just the bigger temperature.

Operation: 3 minutes on and 1 minute off each cycle.

|  |  |
| --- | --- |
|  |  |

Figure 3 – Power input behavior during the heating test

|  |  |
| --- | --- |
|  |  |

Figure 4 – Temperature on motor windings during the heating test

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sample | Max Temperature (°C) | Ambient Temperature (°C) | Rise (K) | Rise Allowed (K) | Result |
| 127 V |  |  |  |  | **Fail Pass** |
| 220 V |  |  |  |  | **Fail Pass** |

Table 2 – Heating test

## Marking test

|  |  |  |  |
| --- | --- | --- | --- |
| Sample | Test | Time application | Remark |
|  | Water and Hexane | 15 s |  |
|  | Oleic acid | 15 s |  |
|  | Filamentous tape | - |  |

Table 3 –Marking test

## Blade rotation

|  |  |  |
| --- | --- | --- |
| Sample | Speed | Rotation |
|  |  |  |
|  |  |  |
|  |  |  |

Table 4 –Rotation test

## Leakage of water

|  |  |  |
| --- | --- | --- |
| Sample | Operation | Leakage? (Y/N) |
|  | Full of water, lid closed, 60 seconds |  |
| Jar without operation for 24 hours |  |

Table 5 –Leakage test

## Food blending

### Carrots

Operation: 60 second’s maximum speed.

|  |  |  |
| --- | --- | --- |
| Capacity | Weight | Quantities in accordance with the volume |
| Minimum | Carrots (15 mm each) | 50 g |
| Water | 75 g |
| Medium | Carrots (15 mm each) |  |
| Water |  |
| Maximum | Carrots (15 mm each) |  |
| Water |  |

Table 6 – Carrots load

|  |  |  |  |
| --- | --- | --- | --- |
| 127 V | Minimum | Medium | Maximum |
| Carrots mass (g) |  |  |  |
| Water mass (g) |  |  |  |
| Mass retained on sieve 2 mm (g) |  |  |  |
| Mass retained on sieve 4 mm (g) |  |  |  |
| Performance 2 mm |  |  |  |
| Performance 4 mm |  |  |  |
| Picture 2 mm | {{Carrots\_min\_2mm\_127V}} | {{Carrots\_med\_2mm\_127V}} | {{Carrots\_max\_2mm\_127V}} |
| Picture 4 mm | {{Carrots\_min\_4 mm\_127V}} | {{Carrots\_med\_4mm\_127V}} | {{Carrots\_max\_4mm\_127V}} |

Table 7 – Carrots test

|  |  |  |  |
| --- | --- | --- | --- |
| Sample 2 | Minimum | Medium | Maximum |
| Carrots mass (g) |  |  |  |
| Water mass (g) |  |  |  |
| Mass retained on sieve 2 mm (g) |  |  |  |
| Mass retained on sieve 4 mm (g) |  |  |  |
| Performance 2 mm |  |  |  |
| Performance 4 mm |  |  |  |
| Picture 2 mm | {{Carrots\_min\_2mm\_220V}} | {{Carrots\_med\_2mm\_220V}} | {{Carrots\_max\_2mm\_220V}} |
| Picture 4 mm | {{Carrots\_min\_4 mm\_220V}} | {{Carrots\_med\_4mm\_220V}} | {{Carrots\_max\_4mm\_220V}} |

Table 8 – Carrots test

### Vegetables

Operation: 30 seconds

|  |  |  |
| --- | --- | --- |
| Capacity | Weight | Quantities in accordance with the volume |
| Minimum | Carrots (15 mm each) | 20 g |
| Potato (10 g each) | 20 g |
| Onion (10 g each) | 20 g |
| Parsley | 0,5 g |
| Water | 40 g |
| Medium | Carrots (15 mm) |  |
| Potato (10 g) |  |
| Onion (10 g) |  |
| Parsley |  |
| Water |  |
| Maximum | Carrots (15 mm each) |  |
| Potato (10 g each) |  |
| Onion (10 g each) |  |
| Parsley |  |
| Water |  |

Table 9 – Vegetables load

|  |  |  |  |
| --- | --- | --- | --- |
| Sample 1 | Minimum | Medium | Maximum |
| Vegetables mass (g) |  |  |  |
| Water mass (g) |  |  |  |
| Mass retained on sieve 2 mm (g) |  |  |  |
| Mass retained on sieve 4 mm (g) |  |  |  |
| Performance 2 mm |  |  |  |
| Performance 4 mm |  |  |  |
| Picture 2 mm | {{Vegetables\_min\_2mm\_127V}} | {{Vegetables\_med\_2mm\_127V}} | {{Vegetables\_max\_2mm\_127V}} |
| Picture 4 mm | {{Vegetables\_min\_4 mm\_127V}} | {{Vegetables\_med\_4mm\_127V}} | {{Vegetables\_max\_4mm\_127V}} |

Table 10 – Vegetables test

|  |  |  |  |
| --- | --- | --- | --- |
| Sample 2 | Minimum | Medium | Maximum |
| Vegetables mass (g) |  |  |  |
| Water mass (g) |  |  |  |
| Mass retained on sieve 2 mm (g) |  |  |  |
| Mass retained on sieve 4 mm (g) |  |  |  |
| Performance 2 mm |  |  |  |
| Performance 4 mm |  |  |  |
| Picture 2 mm | {{Vegetables\_min\_2mm\_220V}} | {{Vegetables\_med\_2mm\_220V}} | {{Vegetables\_max\_2mm\_220V}} |
| Picture 4 mm | {{Vegetables\_min\_4 mm\_220V}} | {{Vegetables\_med\_4mm\_220V}} | {{Vegetables\_max\_4mm\_220V}} |

Table 11 – Vegetables test

### Banana smoothie

Operation: 30 seconds

|  |  |  |
| --- | --- | --- |
| Capacity | Weight | Jar prototype |
| Minimum | Banana (150 mm each) | 100 g |
| Milk | 200 g |
| Medium | Banana (150 mm each) | 200 g |
| Milk |  |

Table 12 – Banana smoothie load

|  |  |  |
| --- | --- | --- |
| Sample 1 | Minimum | Medium |
| Banana mass (g) |  |  |
| Milk mass (g) |  |  |
| Mass retained on sieve 1 mm (g) |  |  |
| Mass retained on sieve 2 mm (g) |  |  |
| Performance 1 mm |  |  |
| Performance 2 mm |  |  |
| Picture 1 mm | {{Banana\_min\_2mm\_127V}} | {{Banana\_med\_2mm\_127V}} |
| Picture 2 mm | {{Banana\_min\_4 mm\_127V}} | {{Banana\_med\_4mm\_127V}} |

Table 13 – Banana smoothie test

|  |  |  |
| --- | --- | --- |
| Sample 2 | Minimum | Medium |
| Banana mass (g) |  |  |
| Milk mass (g) |  |  |
| Mass retained on sieve 1 mm (g) |  |  |
| Mass retained on sieve 2 mm (g) |  |  |
| Performance 1 mm |  |  |
| Performance 2 mm |  |  |
| Picture 1 mm | {{Banana\_min\_2mm\_220V}} | {{Banana\_med\_2mm\_220V}} |
| Picture 2 mm | {{Banana\_min\_4 mm\_220V}} | {{Banana\_med\_4mm\_220V}} |

Table 14 – Banana smoothie test

### Ice crushing

Prepare mode

* Big ice cubes (30x30x30 mm)
* Small ice cubes (25x25x25 mm)
* Jar at room temperature (23 ± 2 °C)
* 100 g
* 200 g

Blender operation

* 3 seconds on and 2 seconds off 🡪 10 cycles 🡪 maximum speed

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 127 V | Big ice – 100 g | Big ice – 200 g | Small ice – 100 g | Small ice – 200 g |
| Total mass (Mt) (g) |  |  |  |  |
| Ice cubes not crushed (Mr) (g) |  |  |  |  |
| Performance |  |  |  |  |
| Picture | {{Big\_ice\_100g\_127V}} | {{Big\_ice\_200g\_127V}} | {{Small\_ice\_100g\_127V}} | {{Small\_ice\_200g\_127V}} |

Table 15 – Ice crushing

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 220 V | Big ice – 100 g | Big ice – 200 g | Small ice – 100 g | Small ice – 200 g |
| Total mass (Mt) (g) |  |  |  |  |
| Ice cubes not crushed (Mr) (g) |  |  |  |  |
| Performance |  |  |  |  |
| Picture | {{Big\_ice\_100g\_220V}} | {{Big\_ice\_200g\_220V}} | {{Small\_ice\_100g\_220V}} | {{Small\_ice\_200g\_220V}} |

Table 16 – Ice crushing

### Mayonnaise

|  |  |  |  |
| --- | --- | --- | --- |
| Sample | Load | Performance | |
| 127 V | 1 egg10 g oil10 g mustard10 g lemon juiceOil until turn a cream where the flow is.100 g/min | Speed max – 100 g oil – 1 minute 10 seconds | |
| {{Maionese\_jarra\_127V}} | {{Maionese\_pote\_127V}} |
| {{Maionese\_textura\_127V}} | |
| 220 V | 1 egg10 g oil10 g mustard10 g lemon juiceOil until turn a cream where the flow is.100 g/min | Speed max – 100 g oil – 1 minute 10 seconds | |
| {{Maionese\_jarra\_220V}} | {{Maionese\_pote\_220V}} |
| {{Maionese\_textura\_220V}} | |

Table 17 – Mayonnaise test

# EQUIPMENTS:

# W - 0068 - Scale 3100 g - Next calibration: 08/2024

# C - 13948 - Chronometer - Next calibration: 07/2024

# W - 0058 - SDA Heating Test - Next calibration: 08/2024

# ATTACHMENT:

# VERSION:

|  |  |  |
| --- | --- | --- |
| Version | Date | Remark |
| 1.0 | 17/03/2022 |  |