

|                |   |             |         |
|----------------|---|-------------|---------|
| <b>Title</b>   | UPS PERFORMANCE TYPE TEST REPORT                              |             |         |
| <b>Date</b>    | 06/02/2015  | Approved by | J Yates |
| <b>Subject</b> | UPS Input/Output characteristics - static conditions          |             |         |
| <b>Test</b>    | Input-Output characteristics, losses, efficiency (EN 62040-3) |             |         |



**Purpose** To measure the input and output UPS performance at differing load levels (0-25%-50%-75%-100%) in order to verify

- 1 Efficiency and losses
- 2 THDv
- 3 Output static stability
- 4 THDi and input pf

| <b>MHE 300 PERFORMANCE</b> |                    |                      |                  |               |       |       |       |              |                 |       |       |       |          |          |          |              |  |
|----------------------------|--------------------|----------------------|------------------|---------------|-------|-------|-------|--------------|-----------------|-------|-------|-------|----------|----------|----------|--------------|--|
| UPS kVA rating             |                    | 300                  |                  | UPS kW rating |       | 300   |       |              |                 |       |       |       |          |          |          |              |  |
| System                     |                    |                      | Input            |               |       |       |       |              | Output          |       |       |       |          |          |          |              |  |
| UPS Load %                 | System Losses (kW) | Overall Efficiency % | Volts ac (Ph/Ph) | Amps          | kVA   | kW    | THDi  | Power Factor | Volts ac (Ph/N) | Amps  | kVA   | kW    | THDv 1 % | THDv 2 % | THDv 3 % | Power Factor |  |
| 0                          | 3.1                | 0                    | 390.9            | 22.1          | 15.0  | 3.1   | 28.19 | 0.209        | 230.2           | 0.0   | 0.0   | 0.0   | 1.10     | 1.30     | 1.30     | 1.0          |  |
| 20.01                      | 4.2                | 93.4                 | 389.9            | 98.3          | 66.4  | 64.3  | 8.05  | 0.968        | 230.3           | 86.9  | 60.0  | 60.0  | 0.90     | 1.00     | 1.00     | 1.0          |  |
| 30.03                      | 5.1                | 94.7                 | 389.7            | 143.2         | 96.6  | 95.2  | 5.72  | 0.985        | 230.3           | 130.4 | 90.1  | 90.1  | 1.10     | 1.10     |          | 1.0          |  |
| 40.21                      | 6.1                | 95.2                 | 389.4            | 189.3         | 127.7 | 126.8 | 4.16  | 0.993        | 230.4           | 174.5 | 120.6 | 120.6 | 1.20     | 1.30     | 1.20     | 1.0          |  |
| 50.26                      | 7.4                | 95.4                 | 389.1            | 235.5         | 158.7 | 158.1 | 2.87  | 0.996        | 230.5           | 218.0 | 150.8 | 150.8 | 1.20     | 1.30     | 1.30     | 1.0          |  |
| 60.3                       | 8.8                | 95.4                 | 388.5            | 282.6         | 190.1 | 189.7 | 2.47  | 0.998        | 230.6           | 261.5 | 180.9 | 180.9 | 1.10     | 1.10     | 1.10     | 1.0          |  |
| 70.23                      | 10.4               | 95.3                 | 388.1            | 329.6         | 221.6 | 221.1 | 2.35  | 0.998        | 230.6           | 304.5 | 210.7 | 210.7 | 0.90     | 1.00     | 1.00     | 1.0          |  |
| 80.17                      | 12.3               | 95.1                 | 388.2            | 376.6         | 253.2 | 252.8 | 2.05  | 0.999        | 230.6           | 347.6 | 240.5 | 240.5 | 0.90     | 1.00     | 1.00     | 1.0          |  |
| 90.17                      | 14.4               | 95.0                 | 388.1            | 424.3         | 285.2 | 284.9 | 1.84  | 0.999        | 230.6           | 391.0 | 270.5 | 270.5 | 0.80     | 0.90     | 0.90     | 1.0          |  |
| 100.12                     | 16.8               | 94.7                 | 387.0            | 473.6         | 317.4 | 317.1 | 1.62  | 0.999        | 230.7           | 434.1 | 300.4 | 300.4 | 0.80     | 0.90     | 0.90     | 1.0          |  |

