# Certificate of Compliance

This certificate is issued for the following:

**Centrifugal Fire Pumps**
(Horizontal, End Suction Type)

WF-2.5x10 ESF, WF-3x10 ESF, WF-3x12 ESF, WF-4x10 ESF and WF-4x12 ESF
(see attached listing)

**Prepared for:**

Waterfall Pumps Manufacturing
Al Ttay, Warehouse No 1-5
Plot No 2840764
PO Box No: 446054, Dubai
United Arab Emirates

FM Approvals Class: 1319 (January 2018)

Approval Identification: PR451178

Approval Granted: July 6, 2020

To verify the product continues to be Approved please refer to www.approvalguide.com.

Said Approval is subject to satisfactory field performance, continuing Surveillance Audits, and strict conformity to the constructions as shown in the Approval Guide, an online resource of FM Approvals.

David B. Fuller
VP, Manager – Fire Protection
FM Approvals
1151 Boston-Providence Turnpike
Norwood, MA 02062

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| *Product* | *Rated Capacity, (gal/min)* | *Rated Capacity, ($dm^3$/min)* | *Rated Net Head at Rated Capacity, psi* | *Rated Net Head at Rated Capacity, kPa* | *Rated Speed, r/min* | *Suction Inlet, dia., in.* | *Discharge Outlet, dia., in.* | *Stage(s)* |
|---|---|---|---|---|---|---|---|---|
| WF-2.5x10 ESF | 50 | 190 | 78-130 | 540-895 | 2800 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 50 | 190 | 84-139 | 580-960 | 2900 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 50 | 190 | 87-144 | 600-995 | 2950 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 50 | 190 | 90-149 | 620-1025 | 3000 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 50 | 190 | 124-203 | 855-1400 | 3500 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 100 | 380 | 78-129 | 540-890 | 2800 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 100 | 380 | 84-139 | 580-960 | 2900 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 100 | 380 | 87-144 | 600-995 | 2950 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 100 | 380 | 90-149 | 620-1025 | 3000 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 100 | 380 | 124-203 | 855-1400 | 3500 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 150 | 580 | 78-129 | 540-890 | 2800 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 150 | 580 | 84-138 | 580-950 | 2900 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 150 | 580 | 87-143 | 600-985 | 2950 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 150 | 580 | 90-148 | 620-1020 | 3000 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 150 | 580 | 123-202 | 850-1395 | 3500 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 200 | 755 | 77-129 | 530-890 | 2800 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 200 | 755 | 83-138 | 570-950 | 2900 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 200 | 755 | 86-143 | 595-985 | 2950 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 200 | 755 | 89-148 | 615-1020 | 3000 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 200 | 755 | 123-202 | 850-1395 | 3500 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 250 | 945 | 76-128 | 525-885 | 2800 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 250 | 945 | 82-137 | 565-945 | 2900 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 250 | 945 | 85-142 | 585-980 | 2950 | 4 | 2.5 | 1 |
| WF-3x10 ESF | 250 | 945 | 88-131 | 605-905 | 2800 | 5 | 3 | 1 |
| WF-2.5x10 ESF | 250 | 945 | 88-147 | 605-1015 | 3000 | 4 | 2.5 | 1 |
| WF-3x10 ESF | 250 | 945 | 94-140 | 650-965 | 2900 | 5 | 3 | 1 |
| WF-3x10 ESF | 250 | 945 | 98-146 | 675-1005 | 2950 | 5 | 3 | 1 |
| WF-3x10 ESF | 250 | 945 | 100-151 | 690-1040 | 3000 | 5 | 3 | 1 |
| WF-3x10 ESF | 250 | 945 | 122-206 | 840-1420 | 3500 | 5 | 3 | 1 |
| WF-2.5x10 ESF | 250 | 945 | 123-202 | 850-1395 | 3500 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 300 | 1135 | 75-127 | 515-875 | 2800 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 300 | 1135 | 80-137 | 550-945 | 2900 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 300 | 1135 | 83-142 | 570-980 | 2950 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 300 | 1135 | 87-147 | 600-1015 | 3000 | 4 | 2.5 | 1 |
| WF-3x10 ESF | 300 | 1135 | 88-130 | 605-895 | 2800 | 5 | 3 | 1 |
| WF-3x10 ESF | 300 | 1135 | 94-140 | 650-965 | 2900 | 5 | 3 | 1 |
| WF-3x10 ESF | 300 | 1135 | 98-145 | 675-1000 | 2950 | 5 | 3 | 1 |
| WF-3x10 ESF | 300 | 1135 | 100-150 | 690-1035 | 3000 | 5 | 3 | 1 |
| WF-2.5x10 ESF | 300 | 1135 | 122-202 | 841-1395 | 3500 | 4 | 2.5 | 1 |

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| *Product* | *Rated Capacity, (gal/min)* | *Rated Capacity, (dm³/min)* | *Rated Net Head at Rated Capacity, psi* | *Rated Net Head at Rated Capacity, kPa* | *Rated Speed, r/min* | *Suction Inlet, dia., in.* | *Discharge Outlet, dia., in.* | *Stage(s)* |
|---|---|---|---|---|---|---|---|---|
| WF-3x12 ESF | 300 | 1135 | 122-198 | 840-1365 | 2800 | 5 | 3 | 1 |
| WF-3x10 ESF | 300 | 1135 | 122-205 | 840-1415 | 3500 | 5 | 3 | 1 |
| WF-3x12 ESF | 300 | 1135 | 132-213 | 910-1470 | 2900 | 5 | 3 | 1 |
| WF-3x12 ESF | 300 | 1135 | 136-220 | 940-1515 | 2950 | 5 | 3 | 1 |
| WF-3x12 ESF | 300 | 1135 | 141-228 | 970-1570 | 3000 | 5 | 3 | 1 |
| WF-3x12 ESF | 300 | 1135 | 194-313 | 1340-2160 | 3500 | 5 | 3 | 1 |
| WF-2.5x10 ESF | 400 | 1515 | 71-122 | 490-840 | 2800 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 400 | 1515 | 77-131 | 530-905 | 2900 | 4 | 2.5 | 1 |
| WF-2.5x10 ESF | 400 | 1515 | 80-136 | 550-940 | 2950 | 4 | 2.5 | 1 |
| WF-4x10 ESF | 400 | 1515 | 82-124 | 565-855 | 2800 | 5 | 4 | 1 |
| WF-2.5x10 ESF | 400 | 1515 | 83-140 | 570-965 | 3000 | 4 | 2.5 | 1 |
| WF-3x10 ESF | 400 | 1515 | 85-126 | 585-870 | 2800 | 5 | 3 | 1 |
| WF-4x10 ESF | 400 | 1515 | 88-133 | 605-915 | 2900 | 5 | 4 | 1 |
| WF-4x10 ESF | 400 | 1515 | 91-138 | 625-950 | 2950 | 5 | 4 | 1 |
| WF-3x10 ESF | 400 | 1515 | 91-140 | 625-965 | 2900 | 5 | 3 | 1 |
| WF-4x10 ESF | 400 | 1515 | 94-142 | 650-980 | 3000 | 5 | 4 | 1 |
| WF-3x10 ESF | 400 | 1515 | 94-145 | 650-1000 | 2950 | 5 | 3 | 1 |
| WF-3x10 ESF | 400 | 1515 | 97-150 | 670-1035 | 3000 | 5 | 3 | 1 |
| WF-2.5x10 ESF | 400 | 1515 | 118 | 815 | 3500 | 4 | 2.5 | 1 |
| WF-3x12 ESF | 400 | 1515 | 120-196 | 825-1350 | 2800 | 5 | 3 | 1 |
| WF-3x10 ESF | 400 | 1515 | 122-204 | 840-1405 | 3500 | 5 | 3 | 1 |
| WF-3x12 ESF | 400 | 1515 | 129-210 | 890-1450 | 2900 | 5 | 3 | 1 |
| WF-4x10 ESF | 400 | 1515 | 132-197 | 910-1360 | 3500 | 5 | 4 | 1 |
| WF-3x12 ESF | 400 | 1515 | 134-218 | 925-1505 | 2950 | 5 | 3 | 1 |
| WF-3x12 ESF | 400 | 1515 | 139-225 | 960-1550 | 3000 | 5 | 3 | 1 |
| WF-3x12 ESF | 400 | 1515 | 192-311 | 1325-2145 | 3500 | 5 | 3 | 1 |
| WF-4x10 ESF | 450 | 1705 | 82-124 | 565-855 | 2800 | 5 | 4 | 1 |
| WF-3x10 ESF | 450 | 1705 | 85-125 | 585-860 | 2800 | 5 | 3 | 1 |
| WF-4x10 ESF | 450 | 1705 | 88-133 | 605-915 | 2900 | 5 | 4 | 1 |
| WF-3x10 ESF | 450 | 1705 | 91-134 | 625-925 | 2900 | 5 | 3 | 1 |
| WF-4x10 ESF | 450 | 1705 | 91-138 | 625-950 | 2950 | 5 | 4 | 1 |
| WF-3x10 ESF | 450 | 1705 | 94-139 | 650-960 | 2950 | 5 | 3 | 1 |
| WF-4x10 ESF | 450 | 1705 | 94-142 | 650-980 | 3000 | 5 | 4 | 1 |
| WF-3x10 ESF | 450 | 1705 | 97-145 | 670-1000 | 3000 | 5 | 3 | 1 |
| WF-3x12 ESF | 450 | 1705 | 118-195 | 815-1345 | 2800 | 5 | 3 | 1 |
| WF-3x10 ESF | 450 | 1705 | 122-203 | 840-1400 | 3500 | 5 | 3 | 1 |
| WF-3x12 ESF | 450 | 1705 | 127-209 | 875-1440 | 2900 | 5 | 3 | 1 |
| WF-3x12 ESF | 450 | 1705 | 131-216 | 905-1490 | 2950 | 5 | 3 | 1 |
| WF-4x10 ESF | 450 | 1705 | 132-197 | 910-1360 | 3500 | 5 | 4 | 1 |




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|---|---|---|---|---|---|---|---|---|
| WF-3x12 ESF | 450 | 1705 | 137-224 | 945-1545 | 3000 | 5 | 3 | 1 |
| WF-3x12 ESF | 450 | 1705 | 191-310 | 1315-2135 | 3500 | 5 | 3 | 1 |
| WF-4x10 ESF | 500 | 1895 | 81-124 | 560-855 | 2800 | 5 | 4 | 1 |
| WF-3x10 ESF | 500 | 1895 | 84-125 | 580-860 | 2800 | 5 | 3 | 1 |
| WF-4x10 ESF | 500 | 1895 | 87-133 | 600-915 | 2900 | 5 | 4 | 1 |
| WF-3x10 ESF | 500 | 1895 | 91-134 | 625-925 | 2900 | 5 | 3 | 1 |
| WF-4x10 ESF | 500 | 1895 | 91-138 | 625-950 | 2950 | 5 | 4 | 1 |
| WF-3x10 ESF | 500 | 1895 | 94-139 | 650-960 | 2950 | 5 | 3 | 1 |
| WF-4x10 ESF | 500 | 1895 | 94-142 | 650-980 | 3000 | 5 | 4 | 1 |
| WF-3x10 ESF | 500 | 1895 | 97-144 | 670-995 | 3000 | 5 | 3 | 1 |
| WF-3x12 ESF | 500 | 1895 | 115-193 | 795-1330 | 2800 | 5 | 3 | 1 |
| WF-4x12 ESF | 500 | 1895 | 119-192 | 820-1325 | 2800 | 5 | 4 | 1 |
| WF-3x10 ESF | 500 | 1895 | 120-201 | 825-1385 | 3500 | 5 | 3 | 1 |
| WF-3x12 ESF | 500 | 1895 | 124-207 | 855-1425 | 2900 | 5 | 3 | 1 |
| WF-4x12 ESF | 500 | 1895 | 129-206 | 890-1420 | 2900 | 5 | 4 | 1 |
| WF-3x12 ESF | 500 | 1895 | 129-215 | 890-1480 | 2950 | 5 | 3 | 1 |
| WF-4x10 ESF | 500 | 1895 | 131-197 | 910-1360 | 3500 | 5 | 4 | 1 |
| WF-4x12 ESF | 500 | 1895 | 133-213 | 915-1470 | 2950 | 5 | 4 | 1 |
| WF-3x12 ESF | 500 | 1895 | 134-222 | 925-1530 | 3000 | 5 | 3 | 1 |
| WF-4x12 ESF | 500 | 1895 | 137-221 | 945-1525 | 3000 | 5 | 4 | 1 |
| WF-3x12 ESF | 500 | 1895 | 190-309 | 1310-2130 | 3500 | 5 | 3 | 1 |
| WF-4x10 ESF | 750 | 2840 | 76-119 | 525-820 | 2800 | 5 | 4 | 1 |
| WF-4x10 ESF | 750 | 2840 | 82-128 | 565-885 | 2900 | 5 | 4 | 1 |
| WF-4x10 ESF | 750 | 2840 | 86-133 | 595-915 | 2950 | 5 | 4 | 1 |
| WF-4x10 ESF | 750 | 2840 | 89-138 | 615-950 | 3000 | 5 | 4 | 1 |
| WF-4x12 ESF | 750 | 2840 | 109-186 | 750-1280 | 2800 | 5 | 4 | 1 |
| WF-4x12 ESF | 750 | 2840 | 118-201 | 815-1385 | 2900 | 5 | 4 | 1 |
| WF-4x12 ESF | 750 | 2840 | 123-208 | 850-1435 | 2950 | 5 | 4 | 1 |
| WF-4x10 ESF | 750 | 2840 | 125-192 | 860-1325 | 3500 | 5 | 4 | 1 |
| WF-4x12 ESF | 750 | 2840 | 128-215 | 885-1480 | 3000 | 5 | 4 | 1 |
| WF-3x12 ESF | 750 | 2840 | 139-197 | 960-1360 | 2950 | 5 | 3 | 1 |
| WF-3x12 ESF | 750 | 2840 | 145-204 | 1000-1405 | 3000 | 5 | 3 | 1 |
| WF-3x12 ESF | 750 | 2840 | 171-296 | 1180-2040 | 3500 | 5 | 3 | 1 |
| WF-3x12 ESF | 750 | 2840 | 190 | 1310 | 2900 | 5 | 3 | |
| WF-4x10 ESF | 1000 | 3785 | 108 | 745 | 2800 | 5 | 4 | 1 |
| WF-4x10 ESF | 1000 | 3785 | 116-184 | 800-1270 | 3500 | 5 | 4 | 1 |
| WF-4x10 ESF | 1000 | 3785 | 118 | 815 | 2900 | 5 | 4 | 1 |
| WF-4x10 ESF | 1000 | 3785 | 123 | 850 | 2950 | 5 | 4 | 1 |
| WF-4x10 ESF | 1000 | 3785 | 127 | 875 | 3000 | 5 | 4 | 1 |

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|---|---|---|---|---|---|---|---|---|
| WF-4x12 ESF | 1000 | 3785 | 129-196 | 890-1350 | 2950 | 5 | 4 | 1 |
| WF-4x12 ESF | 1000 | 3785 | 136-203 | 940-1400 | 3000 | 5 | 4 | 1 |
| WF-4x12 ESF | 1000 | 3785 | 173 | 1195 | 2800 | 5 | 4 | 1 |
| WF-4x12 ESF | 1000 | 3785 | 187 | 1290 | 2900 | 5 | 4 | 1 |

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