

Leisure Marine and Small Engine Lubricants Section

NMMA FC-W 115-HP General Performance Engine Test

SPECIFICATIONS NMMA FC-W

OBJECTIVE

This procedure evaluates the general performance of a four-stroke cycle water-cooled marine engine lubricant when subjected to fuel dilution levels above 7% during the course of operation.

TEST FIXTURE

This test method used a standard Yamaha 115-HP four-stroke cycle water-cooled, spark ignition outboard engine. A trimmed propeller provides the load to obtain a specified engine speed at WOT. The complete engine is mounted in a 10,000-gallon test tank.

TEST PARAMETERS

The test is 110 hours and is comprised of three primary segments: a ten-hour cyclic break-in, ninety hours of cyclic endurance testing, and ten hours of steady-state wide-open throttle.

Engine rpm at WOT	6000
Coolant In temperature	60°F
Torque, Nm	130°F
Fuel flow lbs/hr	60

TEST PARTS EVALUATED

Cam lobes, cam caps, cam journals, cam bearings, piston rings, pistons, connection rod bearings, cylinder bores, main bearings, and crank journal are evaluated at the end of the test.

PASS/FAIL CRITERIA

The components must not have excessive wear or any damage such as scuffing, spalling, scoring, ring wiping, and in general, must be comparable to or better than the results of the most recent reference test.

