



ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: Trent XWB-97
UNIQUE ID NUMBER: 18RR080
COMBUSTOR: Phase5 Tiled
ENGINE TYPE: TF

BYPASS RATIO: 8.0
PRESSURE RATIO (π_{00}): 48.6
RATED THRUST (F_{00}) (kN): 436.7

REGULATORY DATA

| CHARACTERISTIC VALUE: | HC | CO | NO _x | SMOKE NUMBER |
|--|-----|------|-----------------|--------------|
| D _p /F ₀₀ (g/kN) or SN | 1.6 | 28.4 | 75.5 | 14.3 |
| AS % OF ORIGINAL LIMIT | 8.1 | 24.1 | 55.1 | 90.7 |
| AS % OF CAEP/2 LIMIT (NO _x) | | | 68.8 | |
| AS % OF CAEP/4 LIMIT (NO _x) | | | 72.5 | |
| AS % OF CAEP/6 LIMIT (NO _x) | | | 78.6 | |
| AS % OF CAEP/8 LIMIT (NO _x) | | | 86.5 | |

DATA STATUS

- PRE-REGULATION
x CERTIFICATION
- REVISED (SEE REMARKS)

TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES
x DEDICATED ENGINES TO PRODUCTION STANDARD
- OTHER (SEE REMARKS)

EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE
(ANNEX 16 VOLUME II)

CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)
x OUT OF PRODUCTION (DATE: 31/07/2020)
- OUT OF SERVICE (DATE: -)

MEASURED DATA

| MODE | POWER SETTING (%F ₀₀) | TIME (minutes) | FUEL FLOW (kg/s) | HC | CO | NO _x | SMOKE NUMBER |
|--|-----------------------------------|----------------|------------------|-----------|-------------|-----------------|--------------|
| TAKE-OFF | 100 | 0.7 | 3.507 | 0.00 | 0.50 | 56.91 | 10.7 |
| CLIMB OUT | 85 | 2.2 | 2.805 | 0.00 | 0.67 | 40.17 | 8.7 |
| APPROACH | 30 | 4.0 | 0.907 | 0.00 | 0.53 | 12.69 | 6.3 |
| IDLE | 7 | 26.0 | 0.325 | 0.89 | 19.09 | 4.81 | 1.3 |
| LTO TOTAL FUEL (kg) or EMISSIONS (g) | | | 1242 | 451 | 10117 | 28456 | - |
| NUMBER OF ENGINES | | | | 1 | 1 | 1 | 1 |
| NUMBER OF TESTS | | | | 3 | 3 | 3 | 3 |
| AVERAGE D _p /F ₀₀ (g/kN) or AVERAGE SN (MAX) | | | | 1.0 | 23.2 | 65.2 | 11.1 |
| SIGMA (D _p /F ₀₀ in g/kN, or SN) | | | | 0.1 | 0.5 | 0.2 | 0.3 |
| RANGE (D _p /F ₀₀ in g/kN, or SN) | | | | 0.97-1.09 | 22.72-23.67 | 65.03-65.34 | 10.8-11.4 |

ACCESSORY LOADS

POWER EXTRACTION 0 (kW)
STAGE BLEED 0 (% CORE FLOW)

AT - POWER SETTINGS
AT - POWER SETTINGS

ATMOSPHERIC CONDITIONS

| | |
|----------------------|-----------------|
| BAROMETER (kPa) | 99.6-101.5 |
| TEMPERATURE (K) | 277.8-284.9 |
| ABS HUMIDITY (kg/kg) | 0.00258-0.00494 |

FUEL

| | |
|----------|-------|
| SPEC | |
| H/C | 1.91 |
| AROM (%) | 17.65 |

MANUFACTURER: Rolls-Royce plc
TEST ORGANIZATION: Rolls-Royce
TEST LOCATION: Derby
TEST DATES: 15/04/2016-18/04/2016

NO_x REGULATION PARAGRAPH

| | |
|---|-------------------|
| | 2.3.2 c) (CAEP/4) |
| | 2.3.2 d) (CAEP/6) |
| x | 2.3.2 e) (CAEP/8) |

REMARKS

1. Data from Certification Report EDNS01000420230 Iss 1
2. Certification in accordance with Part III, Chapter 2, of Amendment 8 of ICAO Annex 16 Vol. II.
3. NO_x levels in accordance with Part III, Chapter 2, 2.3.2 e) (CAEP/8)

Compliance with Fuel Venting requirements:

x ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)