



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: AE3007A3  
UNIQUE ID NUMBER: 01P06AL034  
COMBUSTOR: Type 3 (reduced emissions)  
ENGINE TYPE: MTF  
BYPASS RATIO: 4.7  
PRESSURE RATIO ( $\pi_{00}$ ): 17.2  
RATED THRUST ( $F_{00}$ ) (kN): 33.0

### REGULATORY DATA

| CHARACTERISTIC VALUE:                        | HC   | CO    | NO <sub>x</sub> | SMOKE NUMBER |
|--|------|-------|-----------------|--------------|
| D <sub>p</sub> /F <sub>00</sub> (g/kN) or SN | 13.5 | 115.7 | 43.3            | 0.0          |
| AS % OF ORIGINAL LIMIT                       | 68.8 | 98.0  | 58.1            | 0.0          |
| AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )      |      |       | 72.7            |              |
| AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )      |      |       | 74.3            |              |
| AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )      |      |       | 75.1            |              |
| AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )      |      |       | 80.0            |              |

For non-volatile particulate matter (nvPM) emissions, please refer to the ICAO Engine nvPM Emissions Data Sheet.

### 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: - )  
- OUT OF SERVICE (DATE: - )

### MEASURED DATA

| MODE   | POWER SETTING (%F <sub>00</sub> ) | TIME (minutes) | FUEL FLOW (kg/s) | HC   | CO    | NO <sub>x</sub> | SMOKE NUMBER |
|--|-----------------------------------|----------------|------------------|------|-------|-----------------|--------------|
| TAKE-OFF   | 100                               | 0.7            | 0.358            | 0.03 | 0.50  | 15.40           | 0.0          |
| CLIMB OUT  | 85                                | 2.2            | 0.300            | 0.03 | 0.50  | 13.48           | 0.0          |
| APPROACH   | 30                                | 4.0            | 0.108            | 0.03 | 7.65  | 6.93            | 0.0          |
| IDLE   | 7                                 | 26.0           | 0.045            | 4.10 | 41.29 | 4.12            | 0.0          |
| LTO TOTAL FUEL (kg) or EMISSIONS (g)                               |                                   |                | 150              | 289  | 3111  | 1232            | -            |
| NUMBER OF ENGINES  |                                   |                |                  | 1    | 1     | 1               | 1            |
| NUMBER OF TESTS  |                                   |                |                  | 3    | 3     | 3               | 3            |
| AVERAGE D <sub>p</sub> /F <sub>00</sub> (g/kN) or AVERAGE SN (MAX) |                                   |                |                  | 8.8  | 94.3  | 37.3            | 0.0          |
| SIGMA (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)             |                                   |                |                  |      |       |                 |              |
| RANGE (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)             |                                   |                |                  |      |       |                 |              |

### ACCESSORY LOADS

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

AT - POWER SETTINGS  
AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

|                      |             |
|----------------------|-------------|
| BAROMETER (kPa)      | 98.9-99     |
| TEMPERATURE (K)      | 291-301     |
| ABS HUMIDITY (kg/kg) | 0.009-0.012 |

### FUEL

|          |       |
|----------|-------|
| SPEC     | Jet A |
| H/C      | 1.9   |
| AROM (%) | 16-20 |

MANUFACTURER: Rolls-Royce Corporation  
TEST ORGANIZATION: Rolls-Royce Corporation  
TEST LOCATION: Indianapolis, Indiana  
TEST DATES: 09/06/2001-11/06/2001

### NO<sub>x</sub> REGULATION PARAGRAPH

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

### REMARKS

- For effectivity see Rolls-Royce Notice to Operators No. AE3007A-076
- Data in this form for AE3007A3 engine fitted with reduced emissions combustor & PAB fuel nozzles
- Results based on Rolls-Royce report EDR 19587

Compliance with Fuel Venting requirements:

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