



ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: RB211-524D4
UNIQUE ID NUMBER: 1RR008
COMBUSTOR: Phase 2
ENGINE TYPE: TF

BYPASS RATIO: 4.3
PRESSURE RATIO (π_{eo}): 30.2
RATED THRUST (F_{eo}) (kN): 231.3

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO _x	SMOKE NUMBER
D _p /F _{eo} (g/kN) or SN	5.3	22.2	100.3	15.8
AS % OF ORIGINAL LIMIT	27.0	18.8	99.9	84.2
AS % OF CAEP/2 LIMIT (NO _x)			124.8	
AS % OF CAEP/4 LIMIT (NO _x)			148.7	
AS % OF CAEP/6 LIMIT (NO _x)			168.9	
AS % OF CAEP/8 LIMIT (NO _x)			198.4	

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 _{eo})	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO _x	
TAKE-OFF	100	0.7	2.340	0.59	1.24	59.35	12.2
CLIMB OUT	85	2.2	1.910	0.26	0.34	43.01	9.2
APPROACH	30	4.0	0.650	0.70	1.56	10.63	1.8
IDLE	7	26.0	0.260	1.41	9.30	4.41	0.6
LTO TOTAL FUEL (kg) or EMISSIONS (g)			912	805	4223	20124	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				3	3	3	3
AVERAGE D _p /F _{eo} (g/kN) or AVERAGE SN (MAX)				3.4	18.1	86.5	12.3
SIGMA (D _p /F _{eo} in g/kN, or SN)				0.1	0.6	0.6	0.3
RANGE (D _p /F _{eo} in g/kN, or SN)				3.3-3.5	17.6-18.8	85.9-86.9	12.1-12.7

ACCESSORY LOADS

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

AT - POWER SETTINGS
AT - POWER SETTINGS

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	103
TEMPERATURE (K)	283-286
ABS HUMIDITY (kg/kg)	0.005

FUEL

SPEC	AVTUR
H/C	1.91
AROM (%)	20

MANUFACTURER: Rolls-Royce plc
TEST ORGANIZATION: Rolls-Royce Ltd
TEST LOCATION: SINFIN-Derby
TEST DATES: 01/09/1986-01/09/1986

REMARKS

1. Data from certification report CRR60515.
2. Phase 2 combustor.
3. Applicable to engines manufactured after Feb 87.
4. SN mode data scaled from 1RR004

Compliance with Fuel Venting requirements:

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