



ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: Trent 1000-A
UNIQUE ID NUMBER: 11RR049
COMBUSTOR: Phase5 Tiled
ENGINE TYPE: TF

BYPASS RATIO: 9.5
PRESSURE RATIO (π_{00}): 41.0
RATED THRUST (F_{00}) (kN): 310.8

REGULATORY DATA

** DATA SUPERSEDED **

SEE FOLLOWING UID FOR REVISED DATA:

12RR055

CHARACTERISTIC VALUE:	HC	CO	NO _x	SMOKE NUMBER
D _p /F ₀₀ (g/kN) or SN	0.1	12.2	59.1	5.8
AS % OF ORIGINAL LIMIT	0.4	10.3	48.4	33.1
AS % OF CAEP/2 LIMIT (NO _x)			60.5	
AS % OF CAEP/4 LIMIT (NO _x)			66.4	
AS % OF CAEP/6 LIMIT (NO _x)			72.9	
AS % OF CAEP/8 LIMIT (NO _x)			82.0	

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 ₀₀)	TIME (minutes)	FUEL FLOW (kg/s)	HC	CO	NO _x	SMOKE NUMBER
TAKE-OFF	100	0.7	2.282	0.00	0.53	46.67	3.3
CLIMB OUT	85	2.2	1.877	0.00	0.45	35.87	4.1
APPROACH	30	4.0	0.625	0.00	0.77	13.29	2.9
IDLE	7	26.0	0.237	0.06	8.73	5.40	0.6
LTO TOTAL FUEL (kg) or EMISSIONS (g)			74	21	3499	17350	-
NUMBER OF ENGINES				3	3	3	3
NUMBER OF TESTS				5	5	5	5
AVERAGE D _p /F ₀₀ (g/kN) or AVERAGE SN (MAX)				0.1	11.3	55.8	5.2
SIGMA (D _p /F ₀₀ in g/kN, or SN)				0.1	3.2	0.9	2.0
RANGE (D _p /F ₀₀ in g/kN, or SN)				0-0.1	6.9-14.1	54.9-56.9	3-8.2

ACCESSORY LOADS

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

AT - POWER SETTINGS
AT - POWER SETTINGS

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	98.9-102.1
TEMPERATURE (K)	284.1-290.3
ABS HUMIDITY (kg/kg)	0.00432-0.00721

FUEL

SPEC	
H/C	1.89
AROM (%)	16.7

MANUFACTURER: Rolls-Royce plc
TEST ORGANIZATION: Rolls-Royce
TEST LOCATION: Derby
TEST DATES: 24/09/2009-09/06/2011

NO_x REGULATION PARAGRAPH

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

REMARKS

1. Representative of Package B engines

Compliance with Fuel Venting requirements:

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