



ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: Trent 1000-CE3
UNIQUE ID NUMBER: 02P23RR127
COMBUSTOR: Phase5 Tiled
ENGINE TYPE: TF

BYPASS RATIO: 9.0
PRESSURE RATIO (π_{co}): 46.0
RATED THRUST (F_{oo}) (kN): 334.7

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO _x	SMOKE NUMBER
D _p /F _{oo} (g/kN) or SN	0.0	9.0	68.2	16.4
AS % OF ORIGINAL LIMIT	0.0	7.6	51.6	96.4
AS % OF CAEP/2 LIMIT (NO _x)			64.6	
AS % OF CAEP/4 LIMIT (NO _x)			68.9	
AS % OF CAEP/6 LIMIT (NO _x)			74.9	
AS % OF CAEP/8 LIMIT (NO _x)			83.0	

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)

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

MEASURED DATA

MODE	POWER	TIME	FUEL FLOW	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
	SETTING (%F _{oo})	(minutes)	(kg/s)	HC	CO	NO _x	
TAKE-OFF	100	0.7	2.556	0.00	0.42	55.28	8.2
CLIMB OUT	85	2.2	2.090	0.00	0.42	41.46	11.4
APPROACH	30	4.0	0.687	0.00	0.61	14.26	9.3
IDLE	7	26.0	0.256	0.00	6.51	5.79	1.9
LTO TOTAL FUEL (kg) or EMISSIONS (g)			947	0	2860	22034	-
NUMBER OF ENGINES				8	8	8	8
NUMBER OF TESTS				18	18	18	18
AVERAGE D _p /F _{oo} (g/kN) or AVERAGE SN (MAX)				0.0	8.5	65.8	14.7
SIGMA (D _p /F _{oo} in g/kN, or SN)				0.0	1.7	0.8	2.0
RANGE (D _p /F _{oo} in g/kN, or SN)				0.0	5.47-10.65	64.73-66.95	11.4-16.7

ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS
STAGE BLEED 0 (% CORE FLOW) AT - POWER SETTINGS

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	98.9-102.1
TEMPERATURE (K)	280.4-303.5
ABS HUMIDITY (kg/kg)	0.00308-0.01917

FUEL

SPEC	
H/C	1.92
AROM (%)	16.89

MANUFACTURER: Rolls-Royce plc
TEST ORGANIZATION: Rolls-Royce plc
TEST LOCATION: Derby
TEST DATES: 24/09/2009-28/08/2019

NO_x REGULATION PARAGRAPH

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

REMARKS

- Representative of Trent 1000-TEN engines
- EDNS01000935986

Compliance with Fuel Venting requirements:

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