



mitsubishi S6B3-PTA

Click on the headlines below to get redirected to the respective sections in this document.

[Technical data](#)

[Elastic data](#)

[Exhaust Noise data](#)

[Fuel consumption](#)

Power House AB

Talattagatan 10, SE-426 76 Västra Frölunda, Sweden

Tel: +46 31 762 56 00, info@powerhouse.se

www.powerhouse.se



**MITSUBISHI DIESEL ENGINE
TECHNICAL INFORMATION**

ITEM NO.	T0211-0001E Rev.2 (1/4)
DATE	January, 2014

Specification Sheets of S6B3-PTA Engine

Specification Sheets of S6B3-PTA Engine are enclosed herein.

Revision	First Edition : September, 2007 (T13-0301-E Jun.'99)	Engine Engineering Department High Speed Engine Designing Section		
	Rev.1 : Mar., 2013			
	Rev.2 : Jan., 2014	Approved by	Checked by	Drawn by

GENERAL ENGINE DATA

Type	4-Cycle, Water Cooled	
Aspiration	Turbo-Charged, After Cooler (Jacket water to Cooler)	
Cylinder Arrangement	Inline	
No. of Cylinders	6	
Bore mm(in.)	135	(5.31)
Stroke mm(in.)	170	(6.69)
Displacement liter(in ³)	14.60	(891)
Compression Ratio	14.2:1	
Dry Weight - Engine only - kg(lb)	1550	(3418)
Wet Weight - Engine only - kg(lb)	1625	(3583)

PERFORMANCE DATA

Steady State Speed Stability Band at any Constant Load		
Mechanical -%	±0.5	
Hydraulic (std.) or Electric Governor - %	±0.25 or better	
Maximum Overspeed Capacity - rpm	2350	
Moment of inertia of Rotating Components - kgf·m ² (lbf·ft ²)	29.19	(692.8)
(Includes Std. Flywheel)		
Cyclic Speed Variation with Flywheel at 1800rpm	1/201	
1500rpm	1/131	

ENGINE MOUNTING

Maximum Bending Moment at Rear Face of Flywheel Housing - kgf·m(lbf·ft)	200	(1447)
---	-----	--------

AIR INLET SYSTEM

Maximum Intake Air Restriction (Includes piping)		
With Clean Filter Element - mm H ₂ O (in. H ₂ O)	400	(15.7)
With Dirty Filter Element - mm H ₂ O (in. H ₂ O)	635	(25.0)

EXHAUST SYSTEM

Maximum Allowable Back Pressure - mm H ₂ O (in. H ₂ O)	600	(23.6)
--	-----	--------

LUBRICATION SYSTEM

Oil Pressure at Idle - kgf/cm ² (psi)	2~3	(29~43)
at Rated Speed - kgf/cm ² (psi)	5~6	(71~86)
Maximum Oil Temperature - °C(°F)	110	(230)
Oil Capacity of Standard Pan High - liter (U.S. gal)	40	(10.6)
Low - liter (U.S. gal)	20	(5.3)
Total System Capacity (Includes Oil Filter) - liter (U.S. gal)	50	(13.2)
Maximum Angle of Installation (Std. Pan) Front Down	7.5°	
(Engine Only) Front Up	11°	
Side to Side	21°	

COOLING SYSTEM

Coolant Capacity (Engine only) - liter (U.S. gal)	30	(7.9)
Maximum External Friction Head at Engine Outlet - kgf/cm ² (psi)	0.35	(5.0)
Maximum Static Head of Coolant above Crankshaft Center - m(ft)	10	(32.8)
Maximum Outlet Pressure of Engine Water Pump - kgf/cm ² (psi)	1.1	(15.7)
Standard Thermostat (modulating) Range - °C(°F)	65~85	(149~185)
Maximum Coolant Temperature at Engine Outlet - °C(°F)	98	(208)
Minimum Coolant Expansion Space - % of System Capacity	10	
Maximum Coolant Temperature at Intercooler Inlet, TK type - °C(°F)		
Maximum Air Restriction on Discharge Side of Radiator and Fan - mm H ₂ O (in. H ₂ O)	10	(0.4)

The specifications are subject to change without notice.

APPLICATION : GENERATOR

Pub. No. T0211-0001E Rev.2 2/4

FUEL SYSTEM

Fuel Injector	Bosch P Type × 1
Maximum Suction Head of Feed Pump - mm Hg (in. Hg)	75 (3.0)
Maximum Static Head of Return & Leak Pipe - mm Hg (in.Hg)	150 (5.9)

STARTING SYSTEM

Battery Charging Alternator - V-Ah	24-25
Starting Motor Capacity - V -kW	24-6.0
Maximum Allowable Resistance of Cranking Circuit - m Ω	2.5
Recommended Minimum Battery Capacity	
At 5°C(41°F) and above - Ah	200
Below 5°C(41°F) through - 5°C(23°F)	400

The specifications are subject to change without notice.

APPLICATION : GENERATOR

Pub. No. T0211-0001E Rev.2 3/4

S6B3-PTA

SPECIFICATION SHEET

ENGINE RATING

All data represent net performance with standard accessories such as air cleaner, inlet /exhaust manifolds, fuel oil system, L.O. pump, etc. under the condition of 100kPa(29.6inHg) barometric pressure, 77°F(25°C) ambient temperature and 30% relative humidity.

ITEM	UNIT	STAND-BY POWER			PRIME POWER			CONTINUOUS C		CONTINUOUS D	
		60Hz	50Hz	60Hz	60Hz	50Hz	60Hz	60Hz	50Hz	60Hz	50Hz
Engine Speed	rpm	1800	1500	1200	1800	1500	1200	1800	1500	1800	1500
No. of Cylinders		6									
Bore	mm (in.)	135 (5.31)									
Stroke	mm (in.)	170 (6.69)									
Displacement	liter (in. ³)	14.60 (891)									
Brake Horse power without Fan	HP (kW)	556 (415)	496 (370)	355 (265)	503 (375)	449 (335)	322 (240)	429 (320)	382 (285)	382 (285)	335 (250)
Brake Mean Effective Pressure without Fan	kgf/cm ² (psi)	19.3 (274)	20.7 (294)	18.5 (263)	17.5 (249)	18.7 (266)	16.8 (239)	14.9 (212)	15.9 (226)	13.3 (189)	14.0 (199)
Mean Piston Speed	m/s (ft/min)	10.2 (2008)	8.5 (1673)	6.8 (1339)	10.2 (2008)	8.5 (1673)	6.8 (1339)	10.2 (2008)	8.5 (1673)	10.2 (2008)	8.5 (1673)
Maximum Regenerative Power Absorption Capacity without Fan	HP (kW)	58 (43)	42 (31)	28 (21)	58 (43)	42 (31)	28 (21)	58 (43)	42 (31)	58 (43)	42 (31)
Intake Air flow	m ³ /min (CFM)	35 (1236)	30 (1059)	22 (777)	31 (1095)	28 (989)	20 (706)	27 (953)	23 (812)	24 (847)	20 (706)
Exhaust Gas Flow	m ³ /min (CFM)	91 (3213)	81 (2860)	58 (2048)	83 (2931)	73 (2578)	53 (1871)	71 (2507)	62 (2189)	63 (2225)	54 (1907)
Coolant Flow	liter/min (U.S. GPM)	500 (132)	430 (114)	333 (88)	500 (132)	430 (114)	333 (88)	500 (132)	430 (114)	500 (132)	430 (114)
Coolant Flow to Intercooler (TK only)	liter/min (U.S. GPM)	—	—	—	—	—	—	—	—	—	—
Cooling Air Flow (Std. Fan)	m ³ /min (CFM)	540 (19067)	450 (15890)	282 (9957)	540 (19067)	450 (15890)	282 (9957)	540 (19067)	450 (15890)	540 (19067)	450 (15890)
Fan Loss Horse Power (Std. Fan)	HP (kW)	20 (15)	15 (11)	10 (7)	20 (15)	15 (11)	10 (7)	20 (15)	15 (11)	20 (15)	15 (11)
Radiated Heat to Ambient	kcal/hr (BTU/min)	26031 (1722)	22918 (1516)	16512 (1092)	23549 (1557)	20746 (1372)	14977 (991)	20085 (1328)	17534 (1160)	17884 (1183)	15377 (1017)
Heat Rejection to Coolant	kcal/hr (BTU/min)	216923 (14347)	190985 (12631)	137598 (9101)	196245 (12979)	172887 (11435)	124807 (8255)	167374 (11070)	146115 (9664)	149037 (9857)	128138 (8475)
Heat Rejection to Inter Cooler (TK Version)	kcal/hr (BTU/min)	—	—	—	—	—	—	—	—	—	—
Heat Rejection to Exhaust	kcal/hr (BTU/min)	268102 (17732)	231885 (15337)	168573 (11149)	242546 (16042)	209912 (13883)	152903 (10113)	206863 (13682)	175783 (11626)	184200 (12183)	154156 (10196)
Noise Level (1 m height & distance) (excludes, Intake, Exhaust & Fan)	dB(A)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

The specifications are subject to change without notice.

APPLICATION : GENERATOR

Pub. No. T0211-0001E Rev.2 4/4



**MITSUBISHI DIESEL ENGINE
TECHNICAL INFORMATION**

ITEM NO.

T0307-0002E (1/2)

DATE

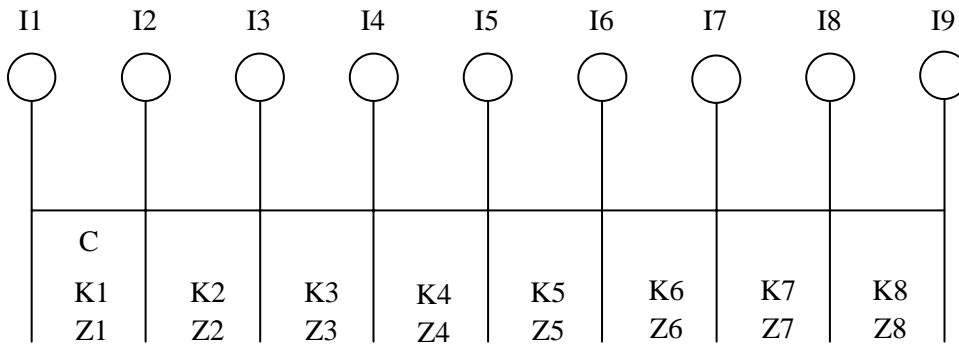
July, 2006

Elastic data of S6B3 Engine

Elastic data of S6B3 Engine are enclosed herein.

Revision	First Edition : July, 2006 (Refer to ELASTIC-S6B3-PTA Oct.,2003, S6B3.0(02-04-06))	Engine Engineering Department Large Engine Design Section		
		Approved by	Checked by	Drawn by



S6B3-PTA ELASTIC DATA

	Moment of inertia J kg.m ²	Damping coefficient Nm/rad/s	Spring const.x10 ⁷ Nm/rad	Tensile strength N/mm ²	Section modulus cm ³
I1	DAMPER	0.412	C=392.3	K1=0	Z1 =0.0
I2	PULLEY	0.363	—	K2=0.539	Z2 =135.0
I3	No.1 CRANK	0.211	—	K3=0.327	Z3 =135.0
I4	No.2 CRANK	0.137	—	K4=0.327	Z4 =135.0
I5	No.3 CRANK	0.211	—	K5=0.327	Z5 =135.0
I6	No.4 CRANK	0.211	—	K6=0.327	Z6 =135.0
I7	No.5 CRANK	0.137	—	K7=0.327	Z7 =135.0
I8	No.6 CRANK	0.211	—	K8=0.539	Z8 =135.0
I9	FLYWHEEL 18in 14in	5.41 2.23	—		

Hysteresis constant:194 No. of Cylinder: 6 Bore:135mm Stroke:170mm

Length of Con-Rod: 270mm Weight of Reciprocating Parts: 5.59 kg

Firing order:1-5-3-6-2-4

Firing interval:0-120-240-360-480-600

APPLICATION : LAND USE

The data is subject to change without notice.



MITSUBISHI HEAVY INDUSTRIES, LTD.
GENERAL MACHINERY & SPECIAL VEHICLE



**MITSUBISHI DIESEL ENGINE
TECHNICAL INFORMATION**

ITEM NO.

T0405-0003E (1/3)

DATE

Sep., 2006

Exhaust Noize Data of S6B3

Exhaust Noize Data of S6B3 is enclosed herein.

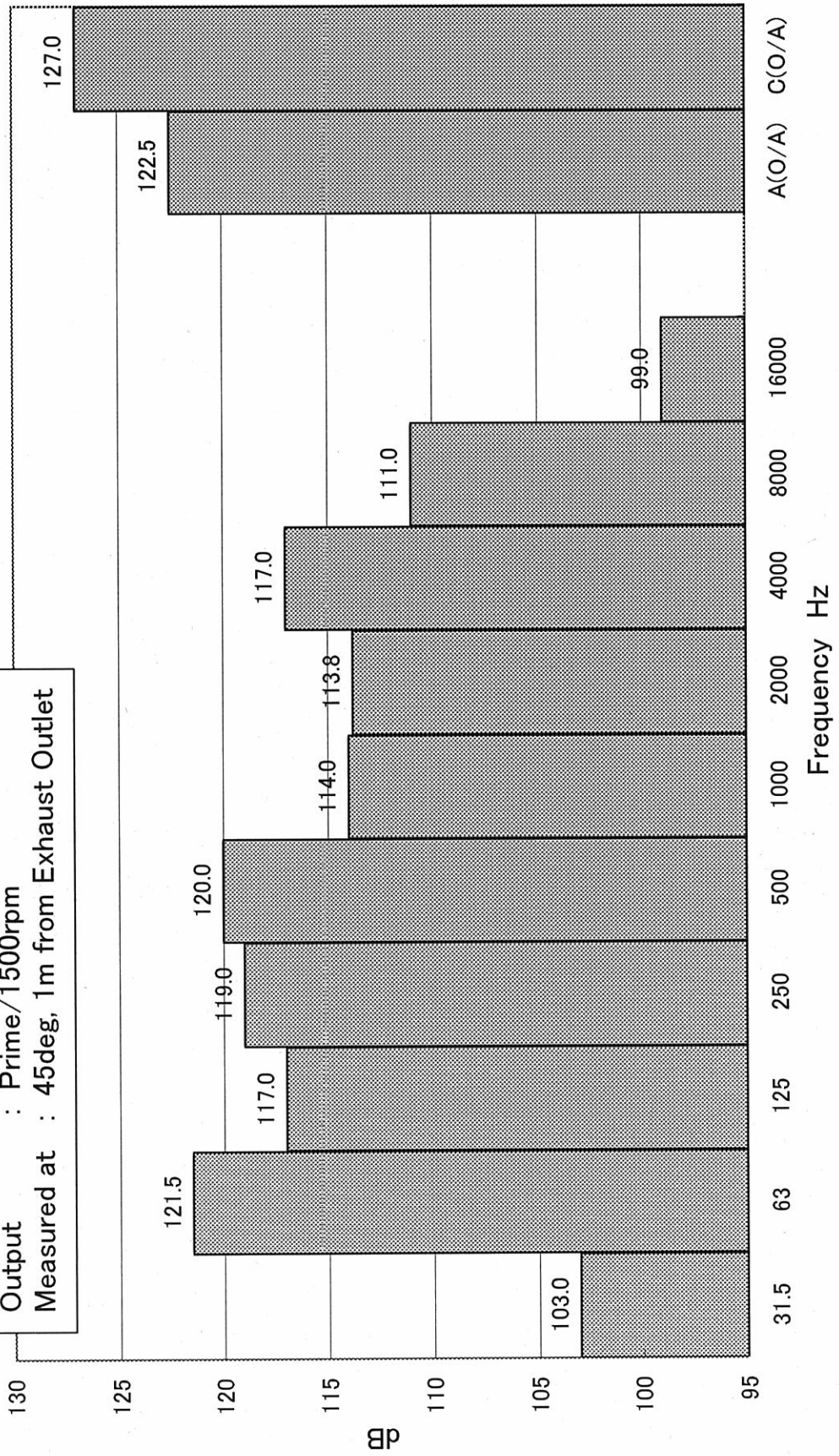
Revision	First Edition : Sep.,2006	Engine Engineering Department Large Engine Design Section		
		Approved by	Checked by	Drawn by

Exhaust Noise Analysis

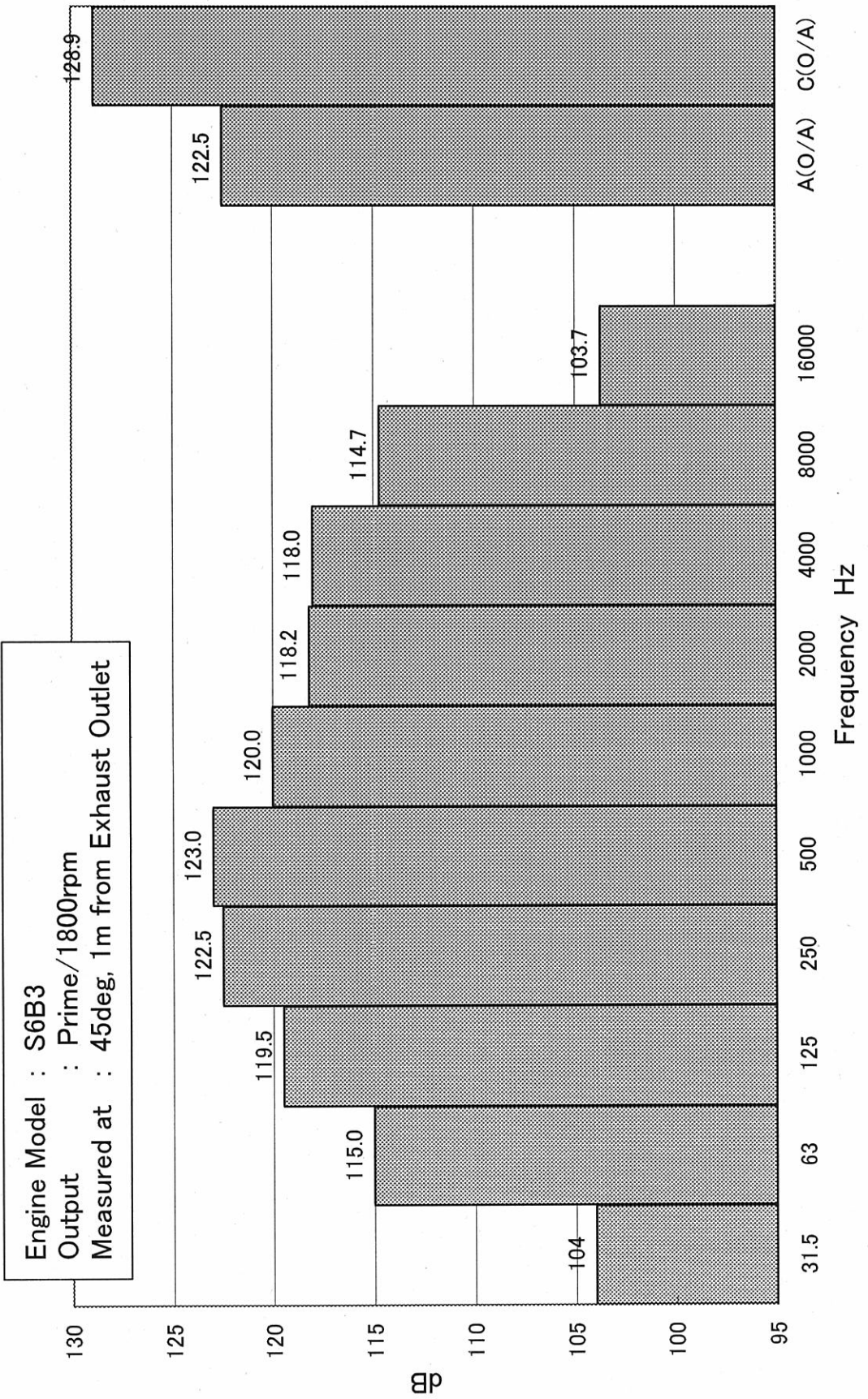
Engine Model : S6B3

Output : Prime/1500rpm

Measured at : 45deg. 1m from Exhaust Outlet



Exhaust Noise Analysis





**MITSUBISHI DIESEL ENGINE
TECHNICAL INFORMATION**

ITEM NO.

T33-0100-E

DATE

Jun. 1999

FUEL CONSUMPTION

(SB, SA, SH, SR SERIES ENGINES FOR GENERATOR DRIVE)

ENGINE MODEL	ENGINE rpm	REMARKS
S6B-PTA, PTK	1500	W/Fan, W/O Fan
	1800	
S6B3-PTA, PTK	1200	W/Fan, W/O Fan
	1500	
S6A3-PTA, PTK	1200	W/Fan, W/O Fan
	1500	
S12A2-PTA, PTK	1200	W/Fan, W/O Fan
	1500	
S12H-PTA	1500	W/Fan, W/O Fan
	1800	
S6R-PTA, PTK	1200	W/Fan, W/O Fan
	1500	
S6R2-PTA, PTK	1000	W/Fan, W/O Fan
	1200	
S12R-PTA, PTK	1200	W/Fan, W/O Fan
	1500	
S12R-PTA2, PTK2	1500	W/Fan, W/O Fan
	1800	
S16R-PTA, PTK	1200	W/Fan, W/O Fan
	1500	
S16R-PTA2, PTK2	1500	W/Fan, W/O Fan
	1800	
S6A3-PTAA	1500	W/Fan
	1800	
S6R2-PTAA	1500	W/Fan
S12R-PTAA2	1500	W/Fan
	1800	
S16R-PTAA2	1500	W/Fan
	1800	

First Edition : Jun. 1999

Engine Engineering Department
Large Engine Design Section

Revision

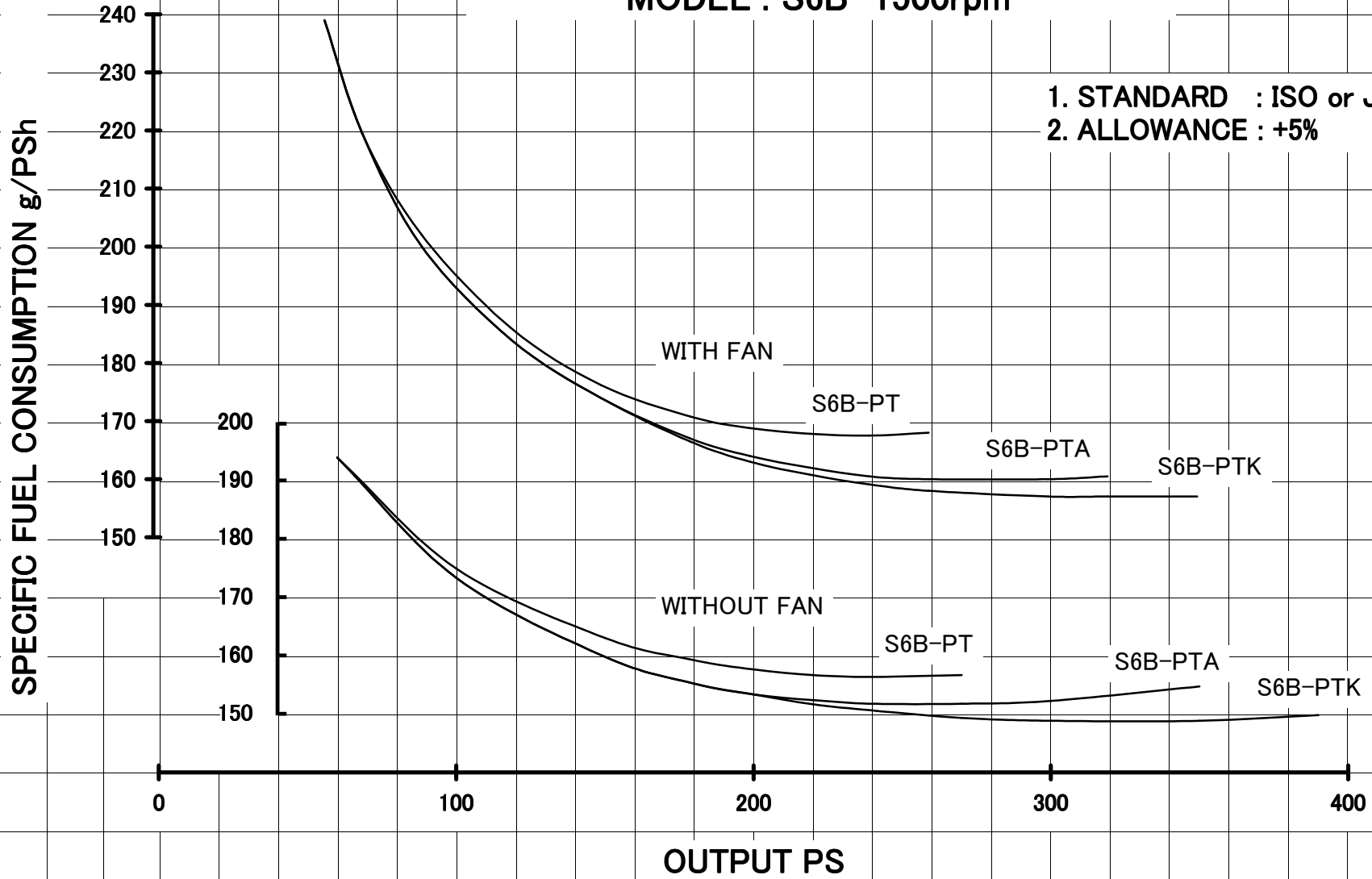
Approved by

Checked by

Drawn by

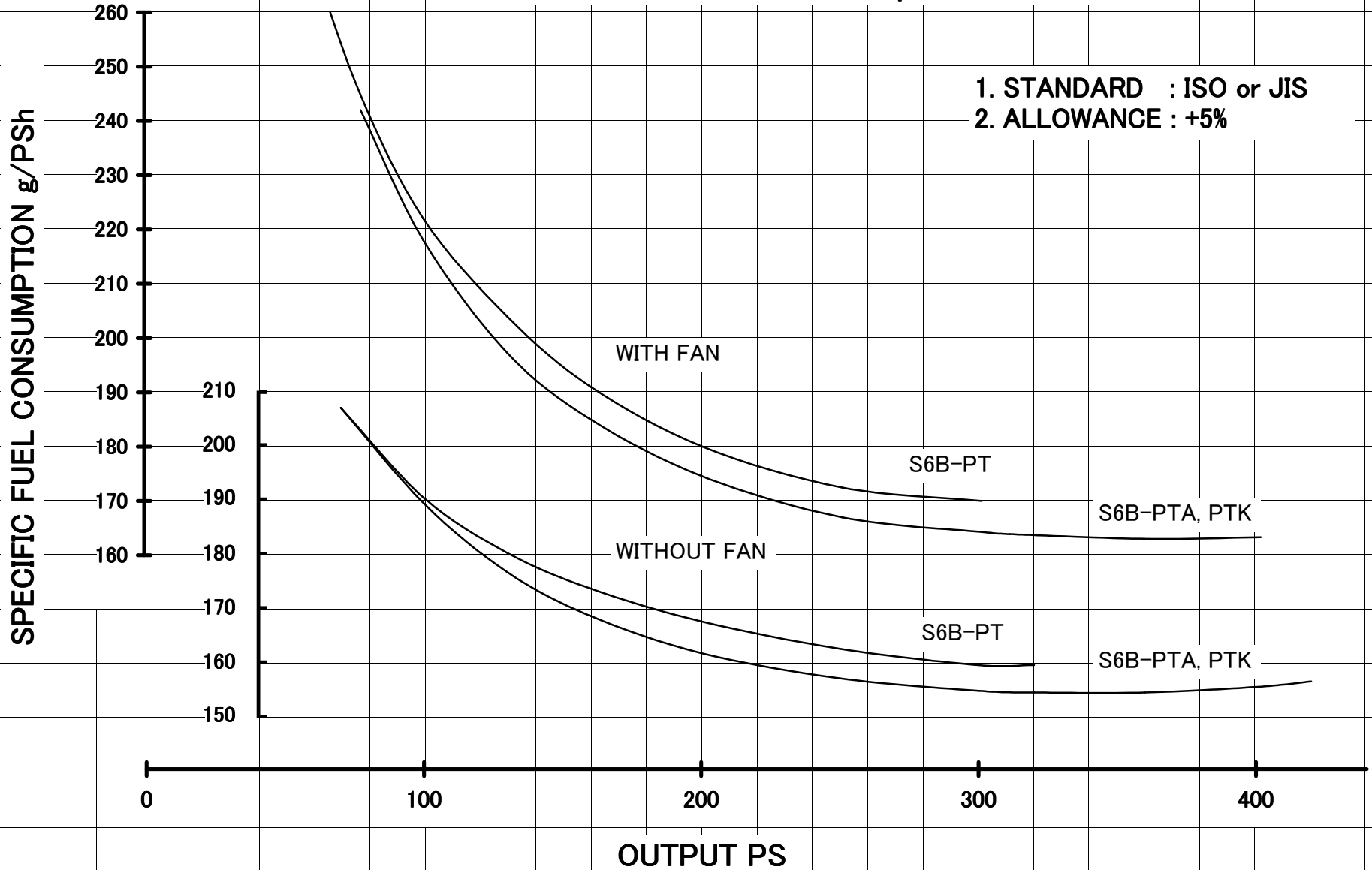
SPECIFIC FUEL CONSUMPTION MODEL : S6B 1500rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%



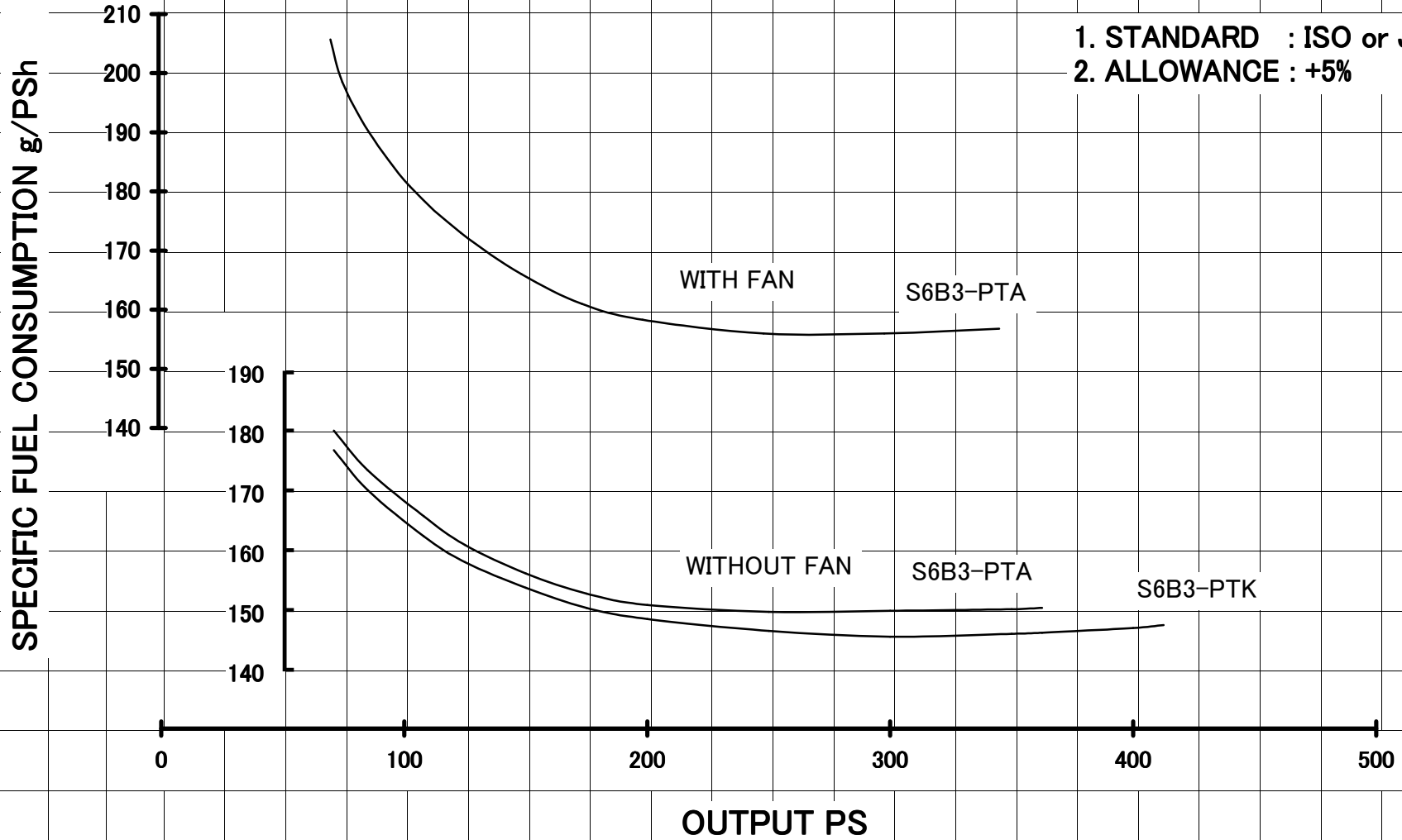
SPECIFIC FUEL CONSUMPTION MODEL : S6B 1800rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%



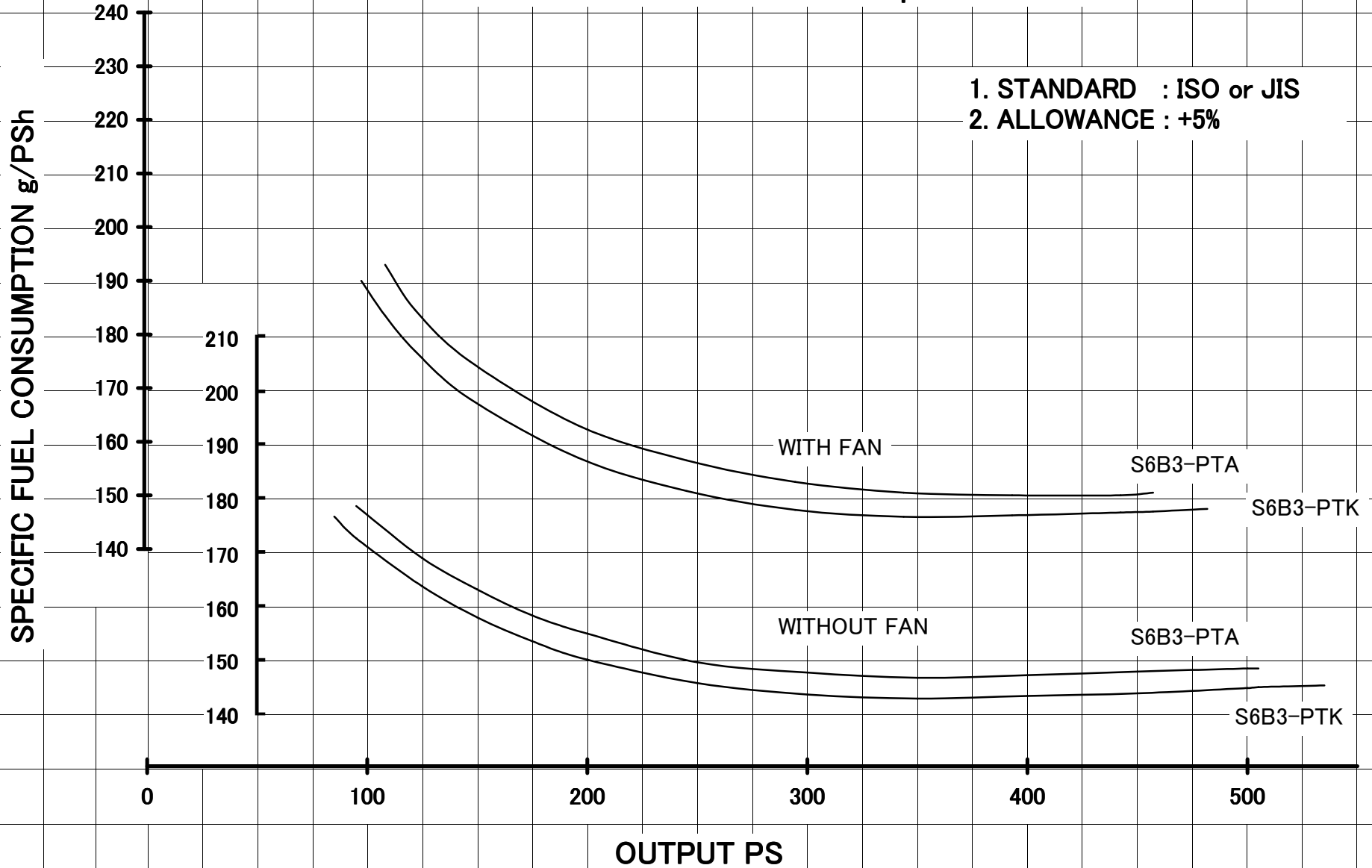
SPECIFIC FUEL CONSUMPTION MODEL : S6B3 1200rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%



SPECIFIC FUEL CONSUMPTION MODEL : S6B3 1500rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

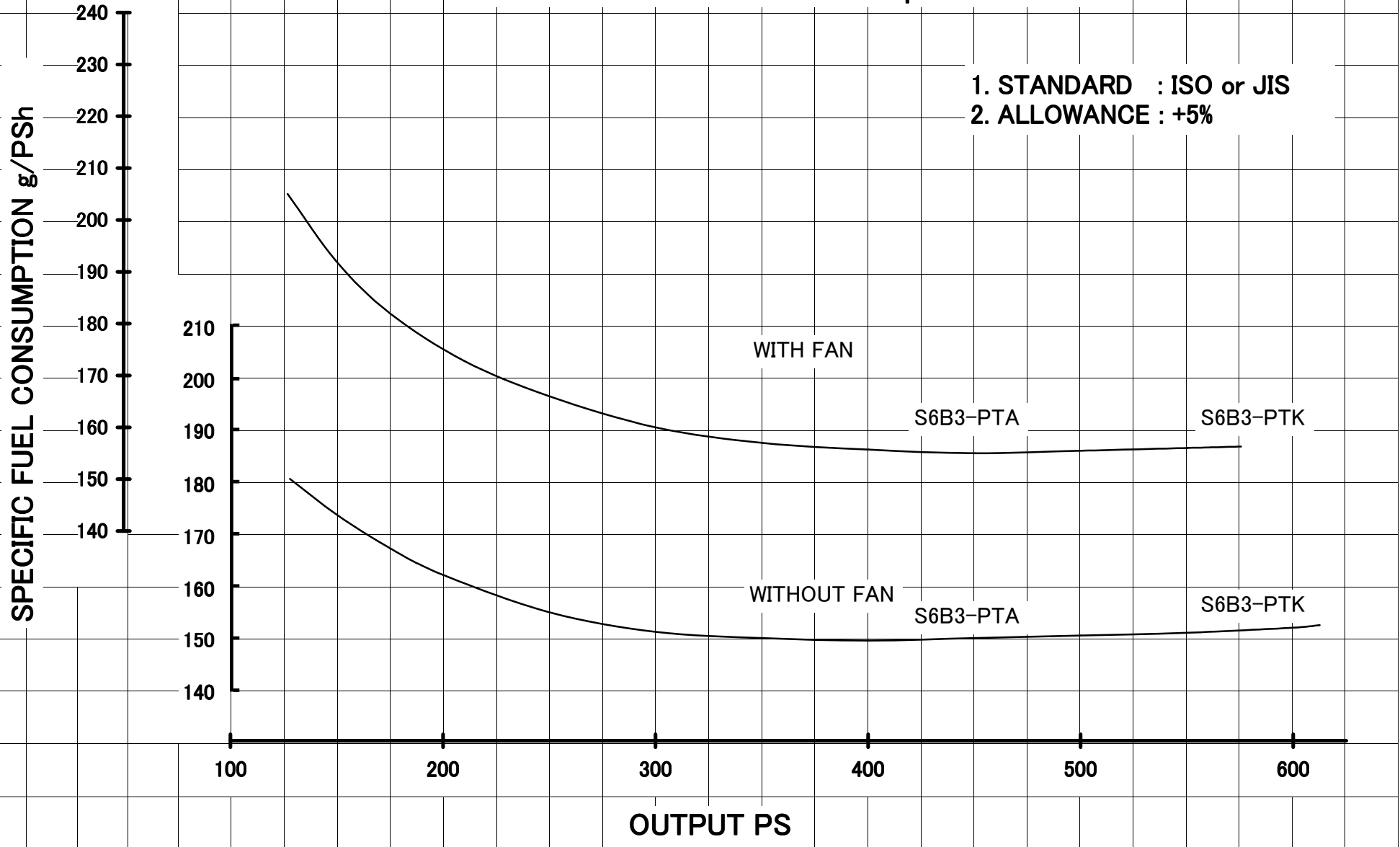


SPECIFIC FUEL CONSUMPTION

MODEL : S6B3 1800rpm

1. STANDARD : ISO or JIS

2. ALLOWANCE : +5%



SPECIFIC FUEL CONSUMPTION

MODEL : S6A3 1200rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

SPECIFIC FUEL CONSUMPTION g/PS_h

210
200
190
180
170
160
150
140

190
180
170
160
150
140

WITH FAN

WITHOUT FAN

S6BA3-PTA

S6A3-PTK

0

100

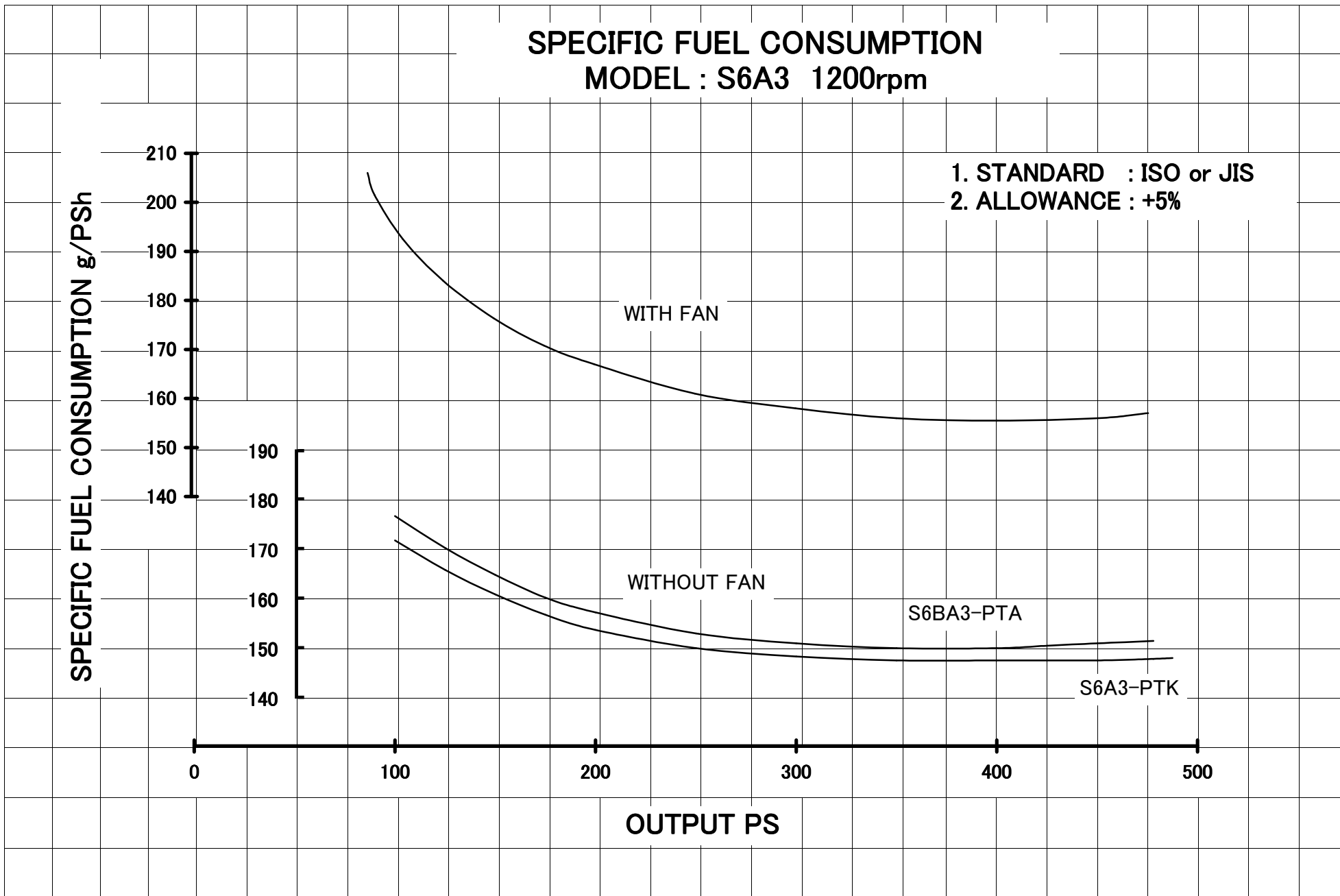
200

300

400

500

OUTPUT PS



SPECIFIC FUEL CONSUMPTION MODEL : S6A3 1500rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

SPECIFIC FUEL CONSUMPTION g/PS_h

220
210
200
190
180
170
160
150
140

210
200
190
180
170
160
150
140

WITH FAN

S6A3-PTA

S6A3-PTK

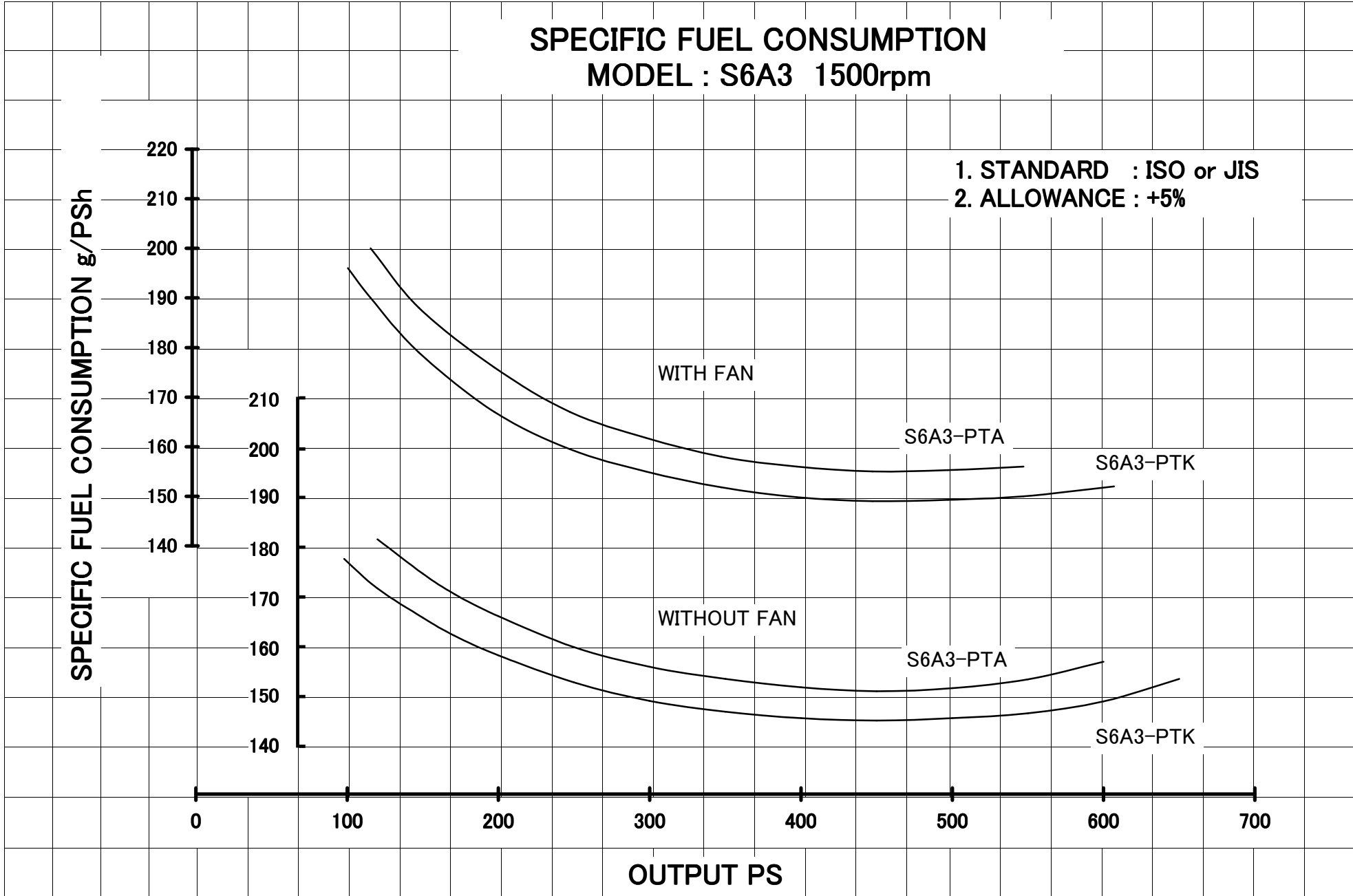
WITHOUT FAN

S6A3-PTA

S6A3-PTK

0 100 200 300 400 500 600 700

OUTPUT PS



SPECIFIC FUEL CONSUMPTION

MODEL : S6A3 1800rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

SPECIFIC FUEL CONSUMPTION g/PS_h

230
220
210
200
190
180
170
160
150

210
200
190
180
170
160
150

WITH FAN

S6A3-PTA

S6A3-PTK

WITHOUT FAN

S6A3-PTA

S6A3-PTK

0

100

200

300

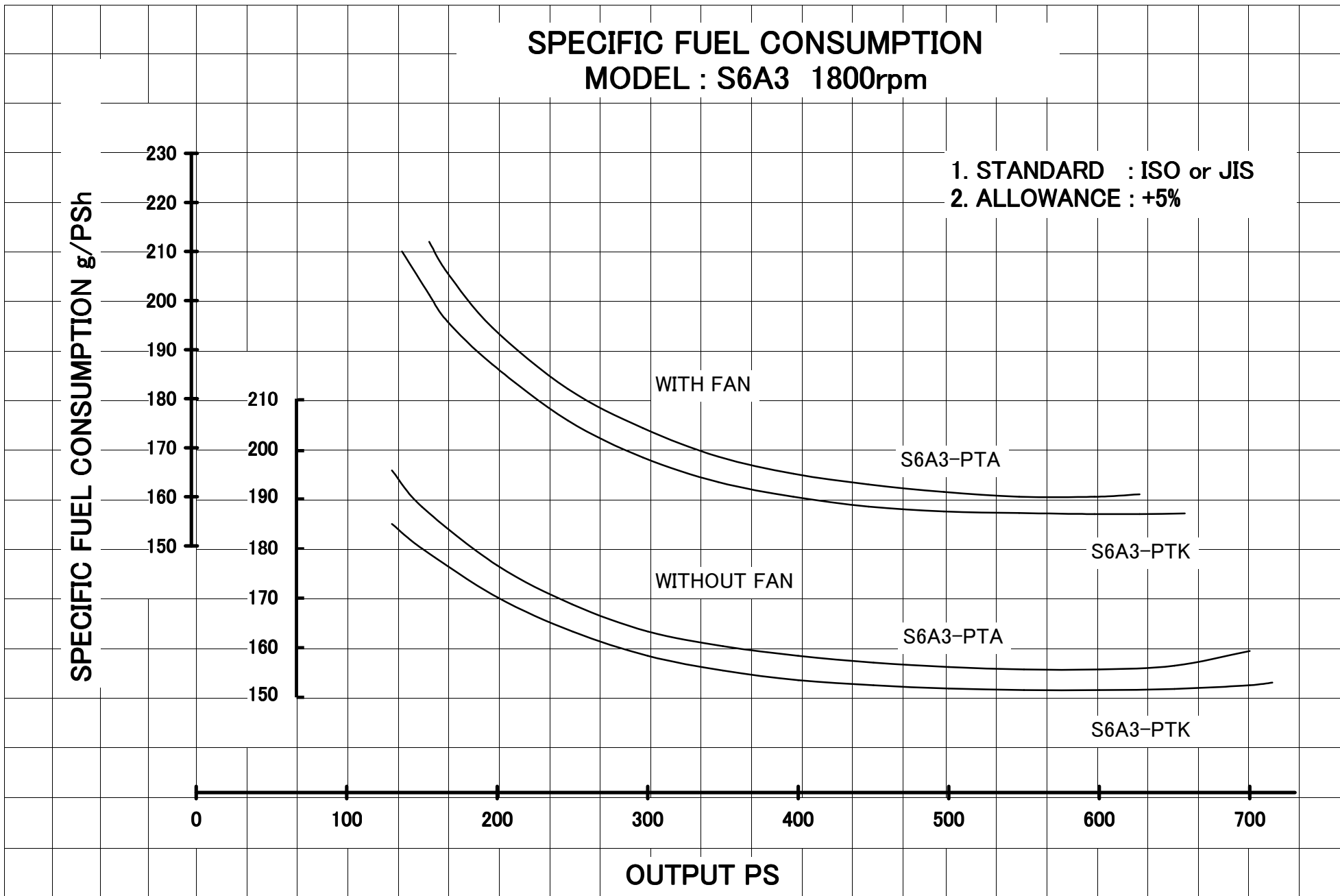
400

500

600

700

OUTPUT PS



SPECIFIC FUEL CONSUMPTION MODEL : S12A2 1200rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

SPECIFIC FUEL CONSUMPTION g/PS_h

190
180
170
160
150

180
170
160
150

0

200

400

600

800

OUTPUT PS

WITH FAN

WITHOUT FAN

S12A2-PT

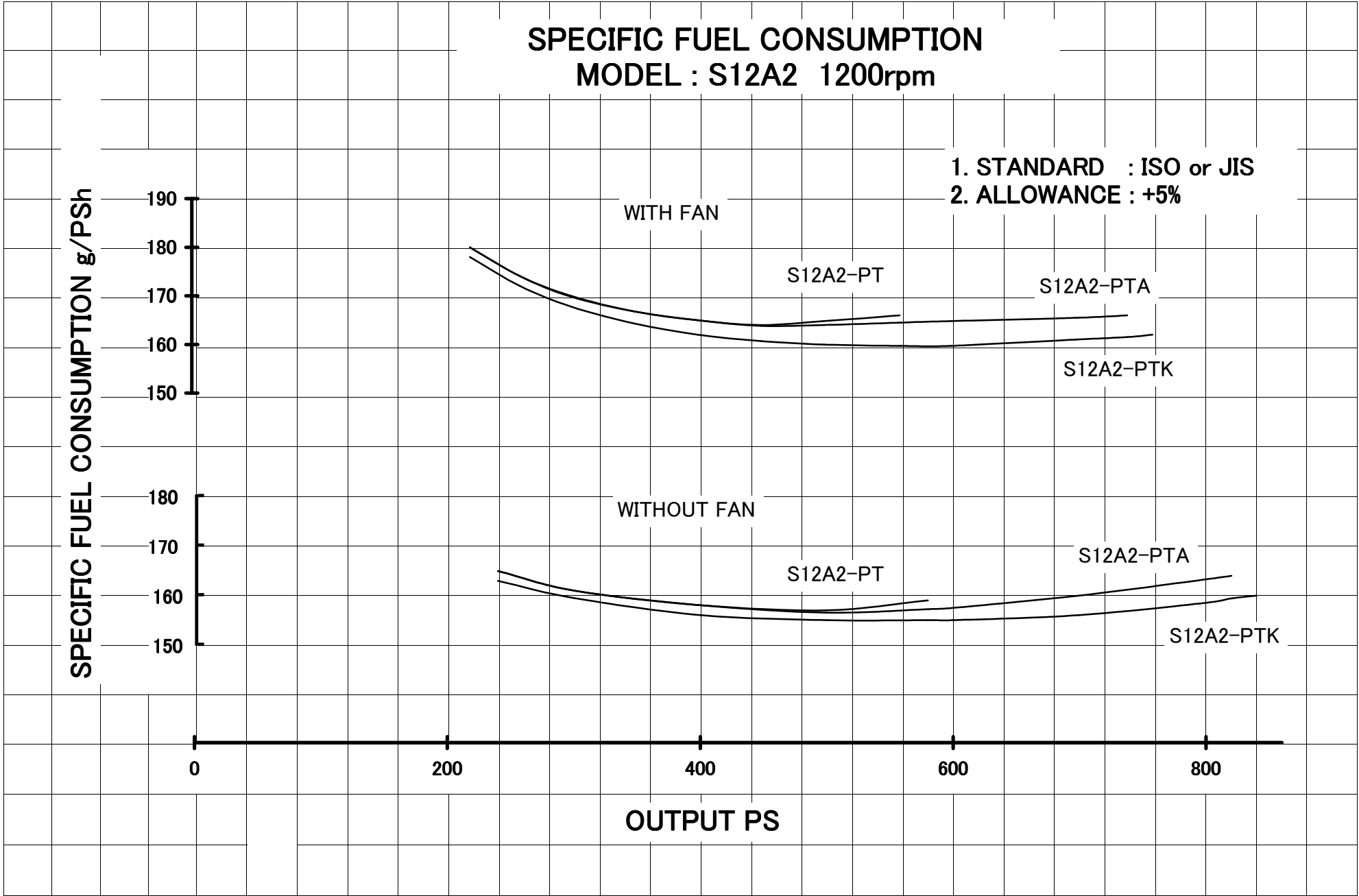
S12A2-PTA

S12A2-PTK

S12A2-PT

S12A2-PTA

S12A2-PTK



SPECIFIC FUEL CONSUMPTION MODEL : S12A2 1500rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

SPECIFIC FUEL CONSUMPTION g/PS_h

190
180
170
160
150

190
180
170
160
150
140

0

200

400

600

800

1000

OUTPUT PS

WITH FAN

S12A2-PT

S12A2-PTA

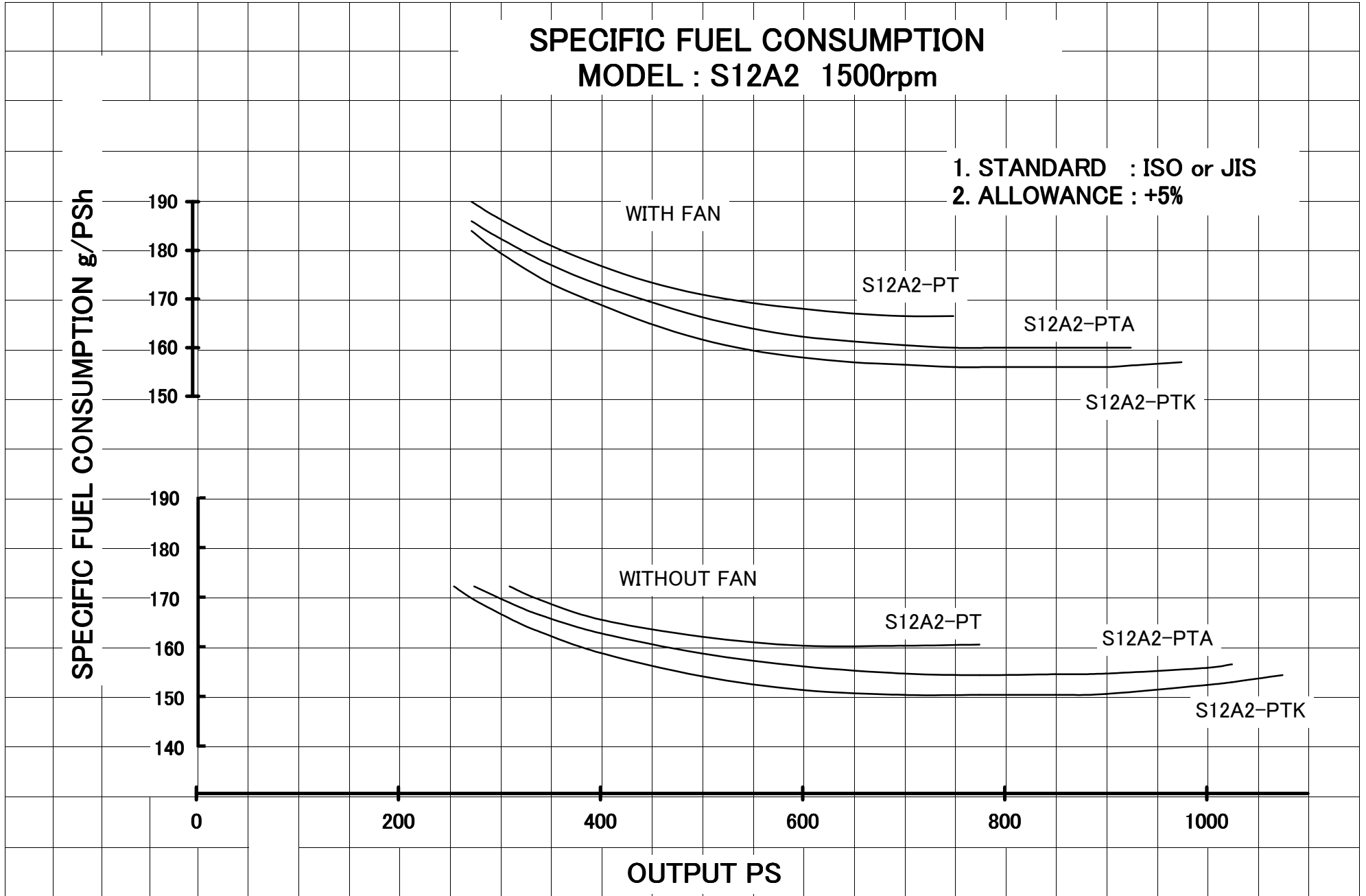
S12A2-PTK

WITHOUT FAN

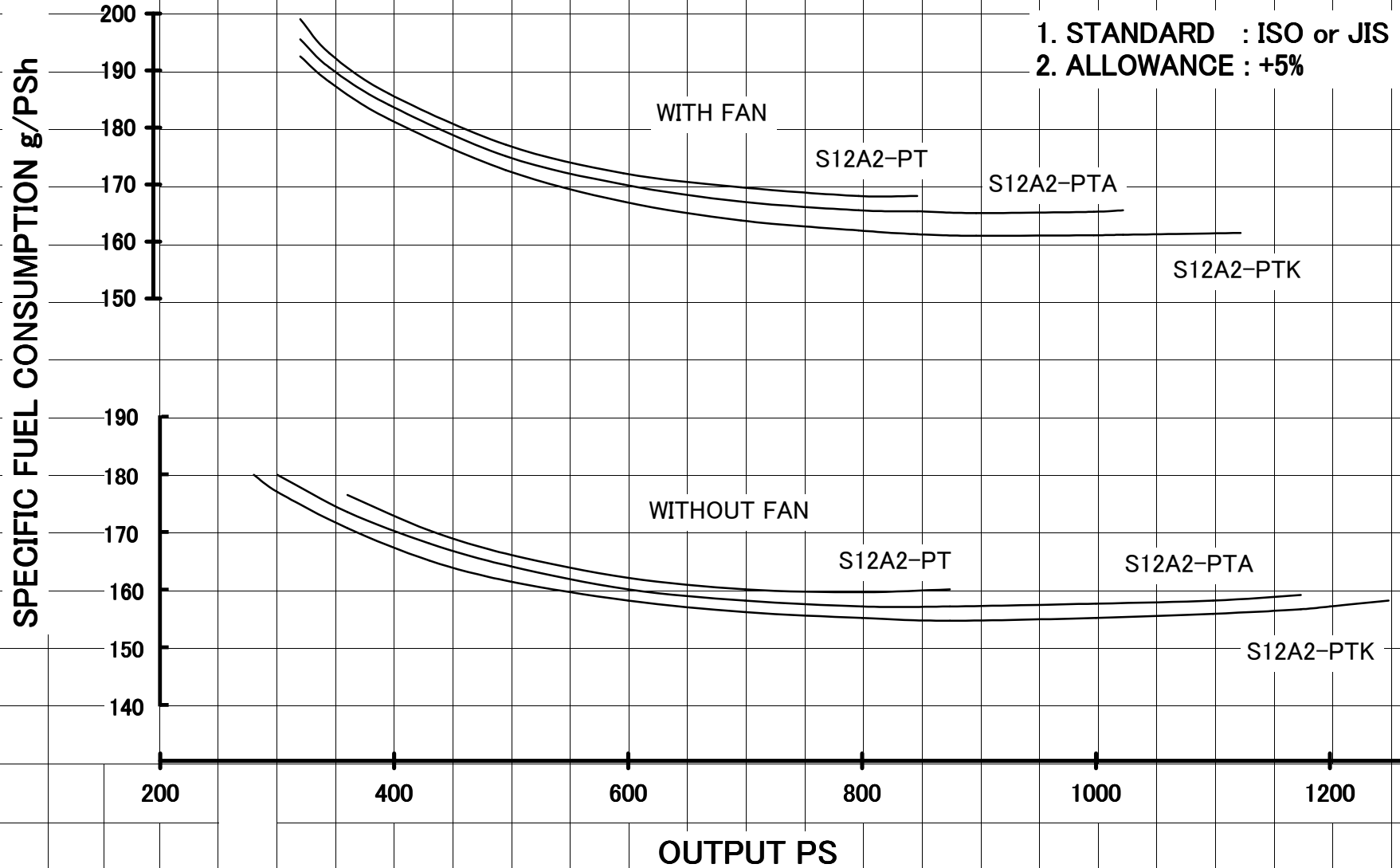
S12A2-PT

S12A2-PTA

S12A2-PTK

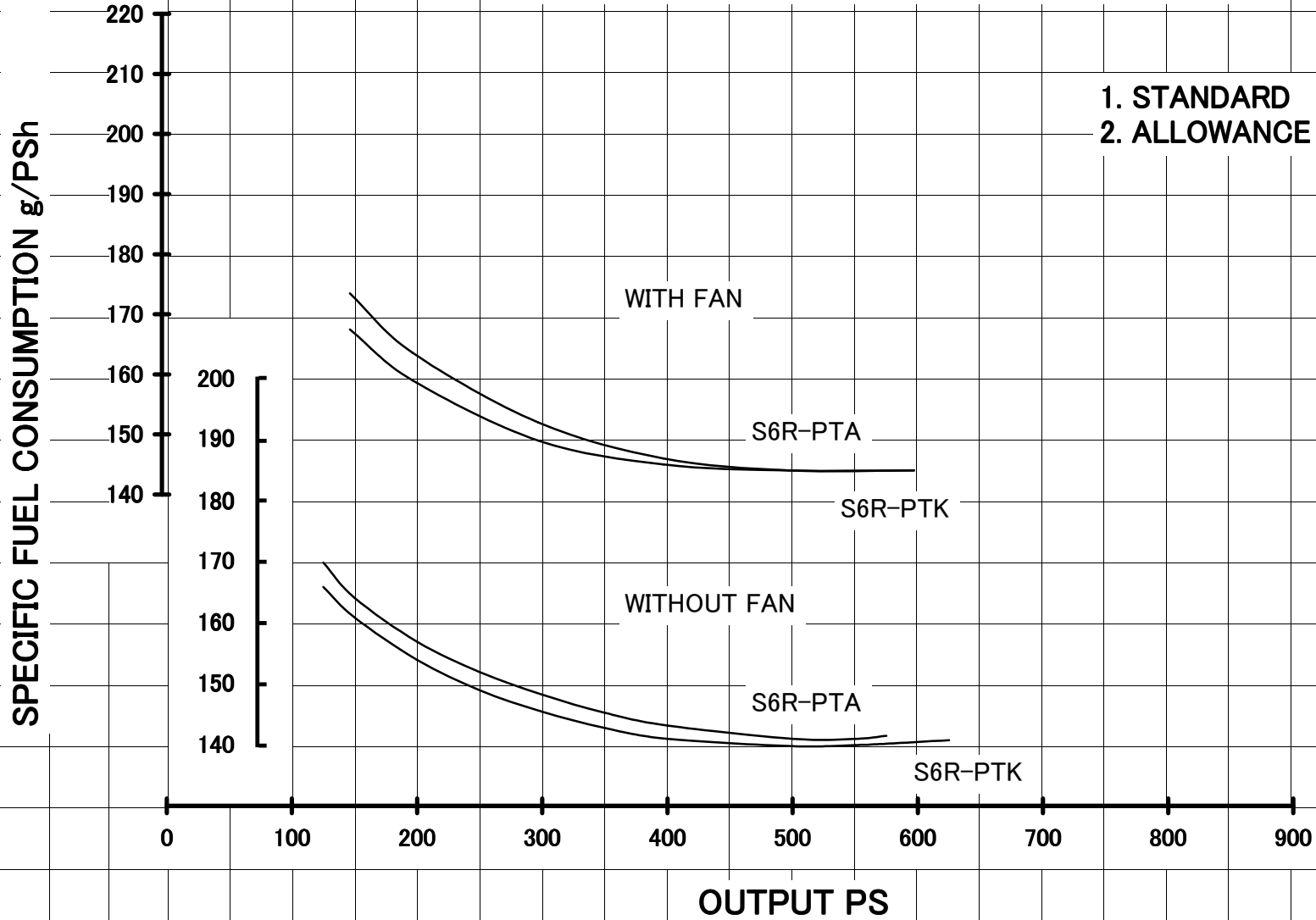


SPECIFIC FUEL CONSUMPTION MODEL : S12A2 1800rpm



SPECIFIC FUEL CONSUMPTION MODEL : S6R 1200rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

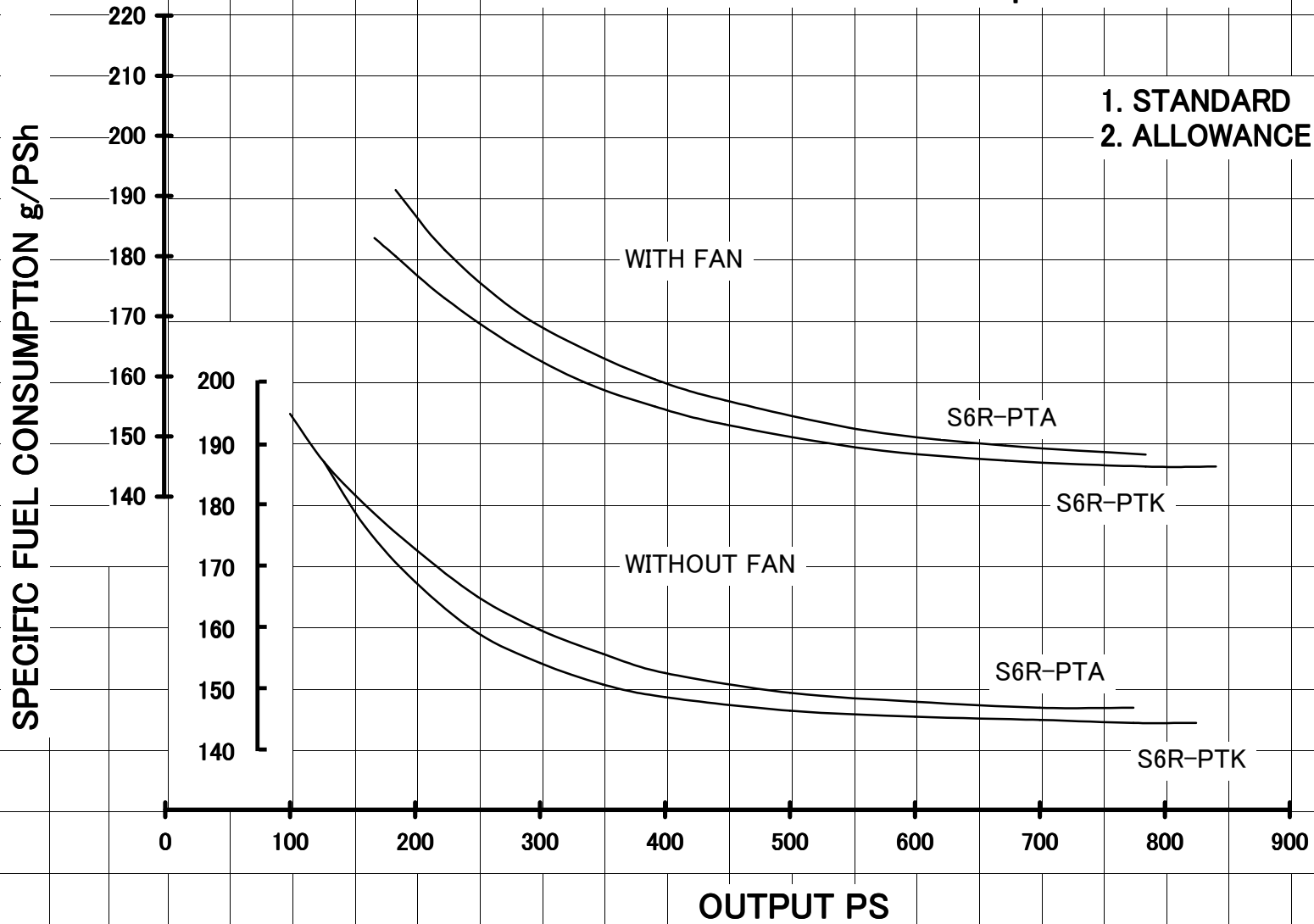


SPECIFIC FUEL CONSUMPTION

MODEL : S6R 1500rpm

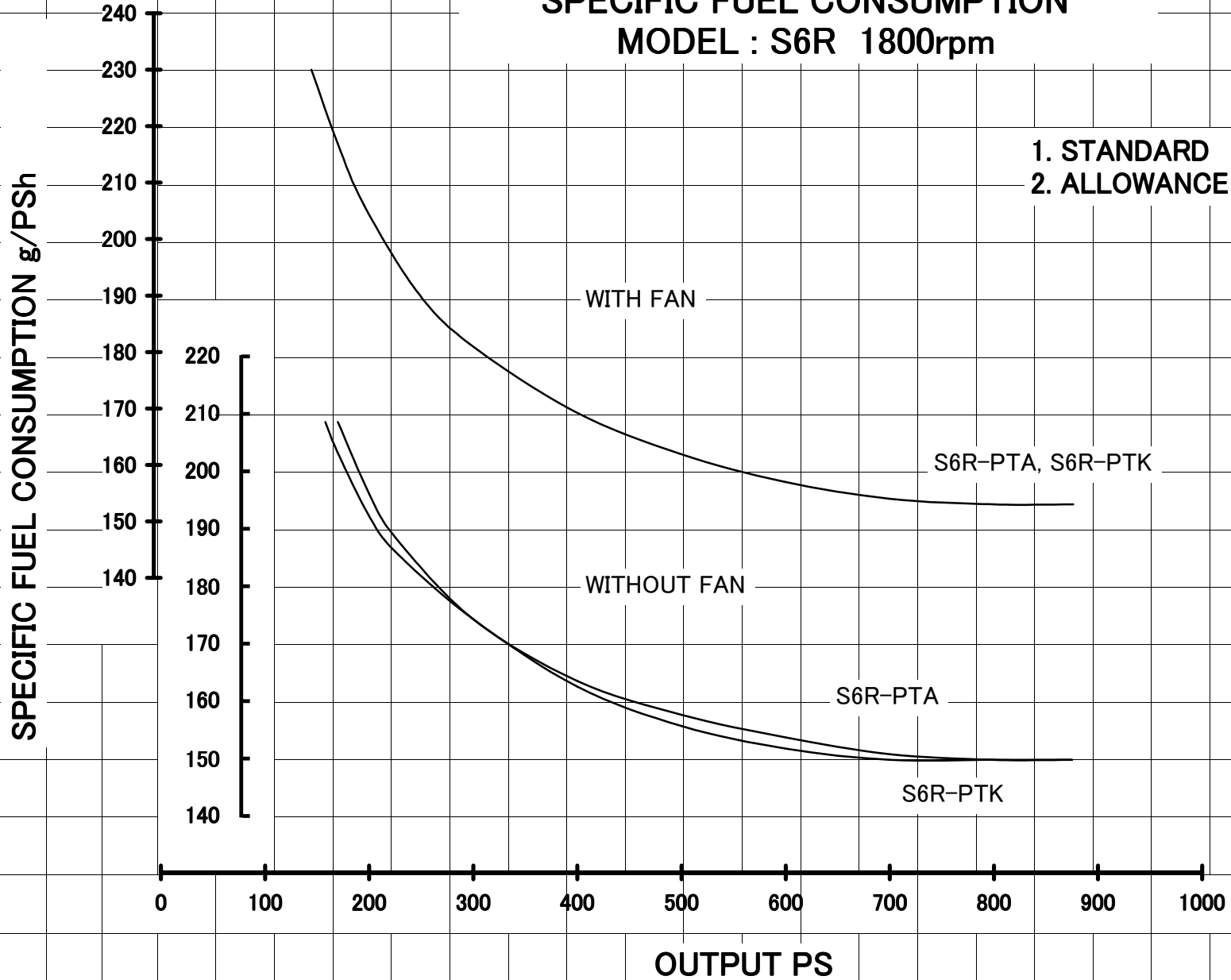
1. STANDARD : ISO or JIS

2. ALLOWANCE : +5%



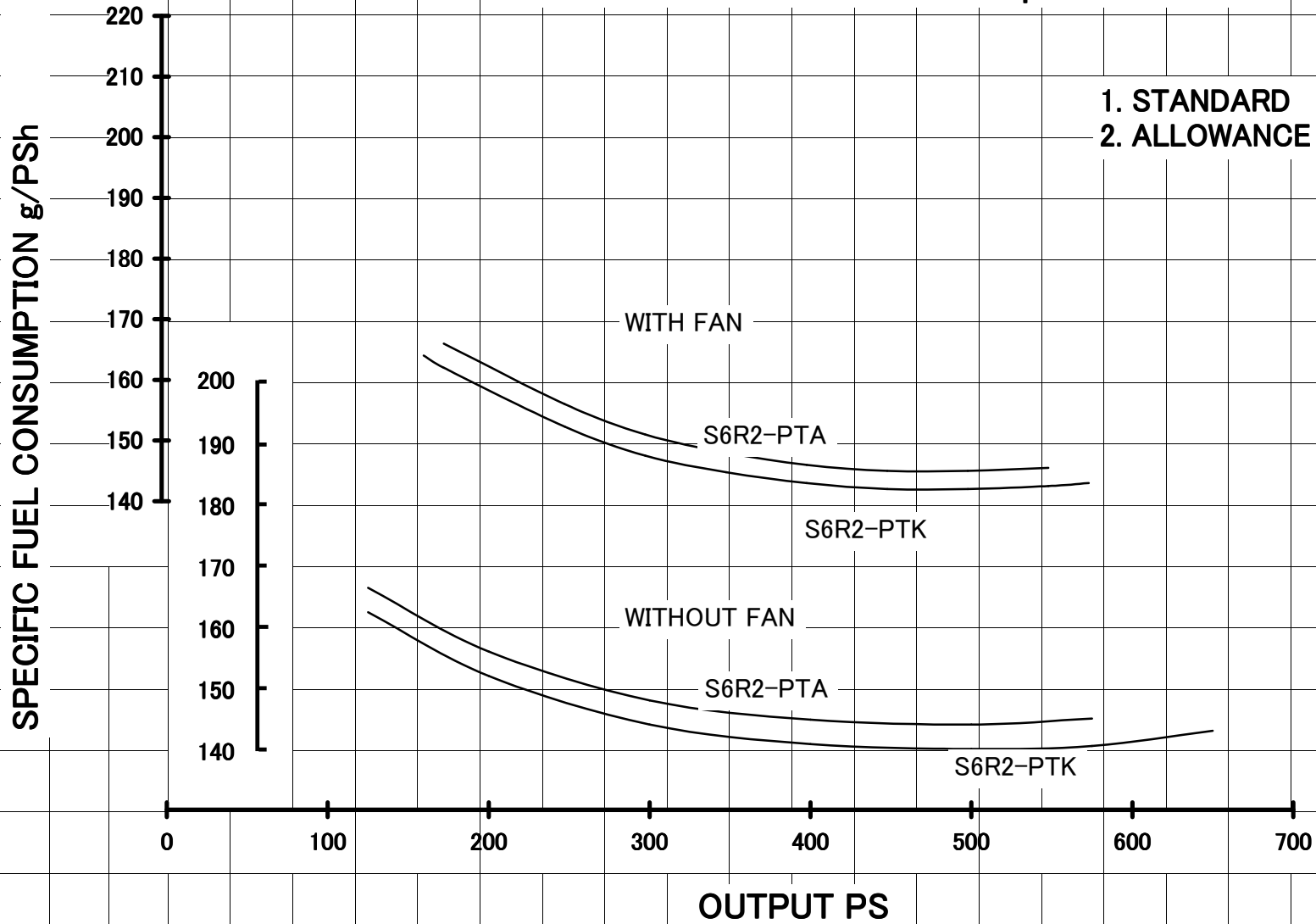
SPECIFIC FUEL CONSUMPTION MODEL : S6R 1800rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%



SPECIFIC FUEL CONSUMPTION MODEL : S6R2 1000rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

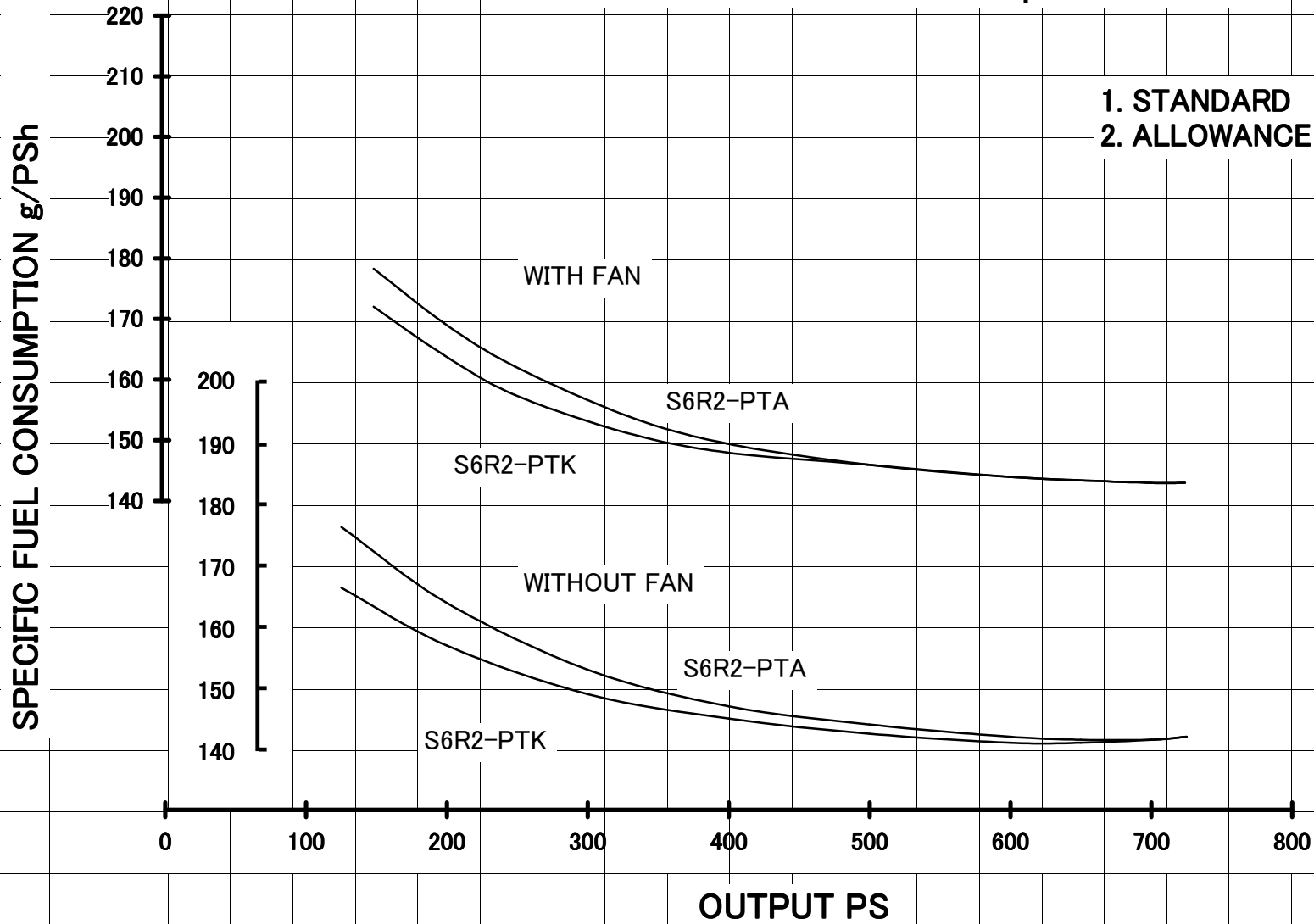


SPECIFIC FUEL CONSUMPTION

MODEL : S6R2 1200rpm

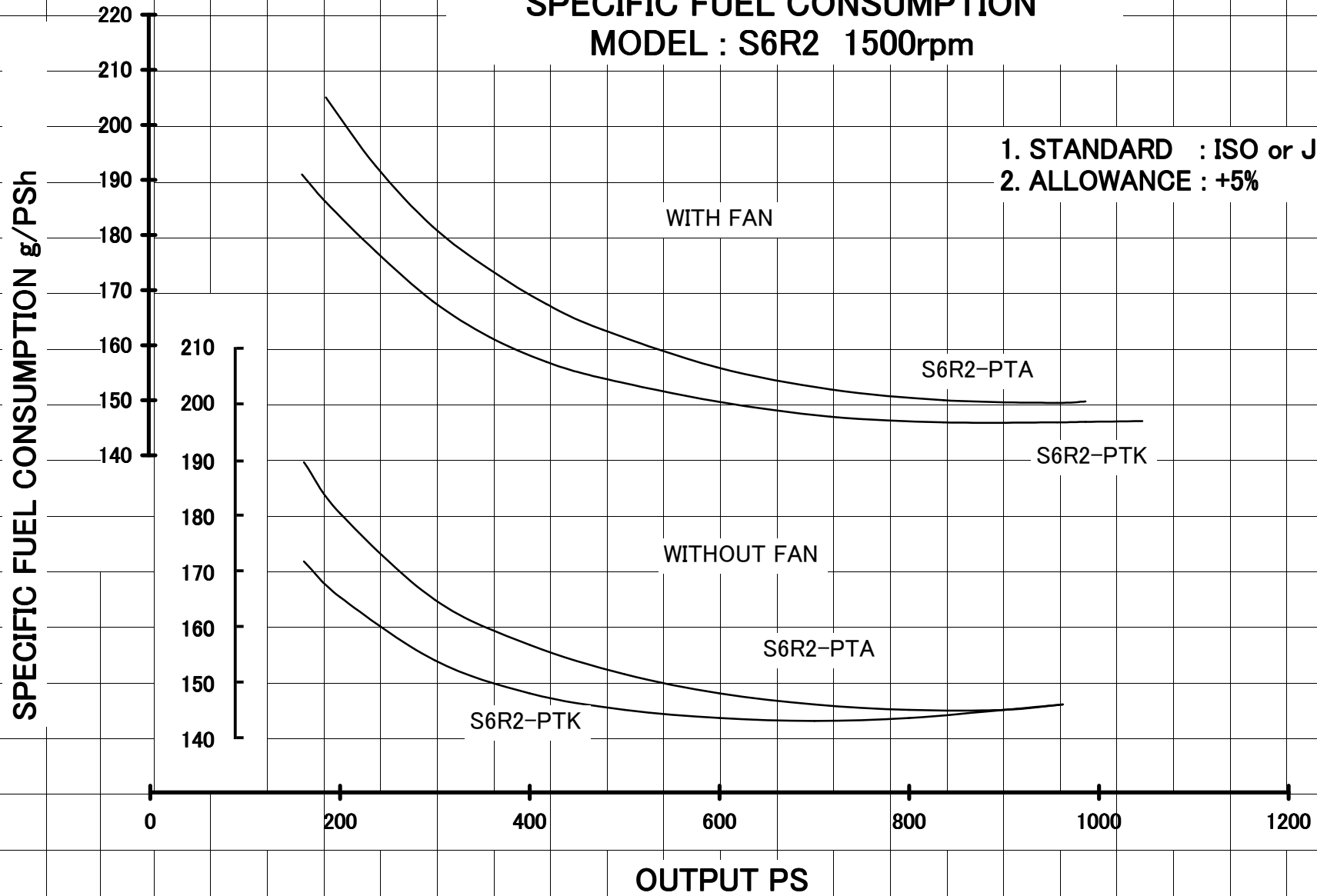
1. STANDARD : ISO or JIS

2. ALLOWANCE : +5%



SPECIFIC FUEL CONSUMPTION MODEL : S6R2 1500rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

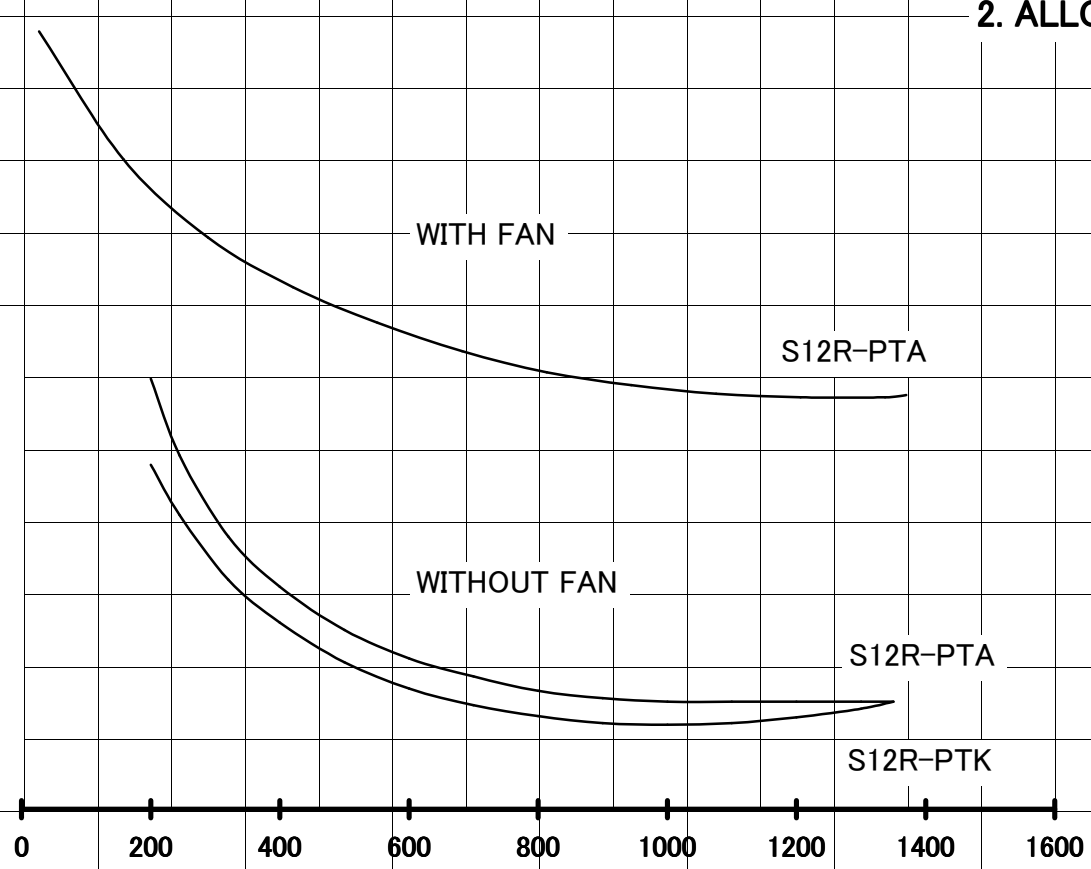


SPECIFIC FUEL CONSUMPTION MODEL : S12R 1200rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

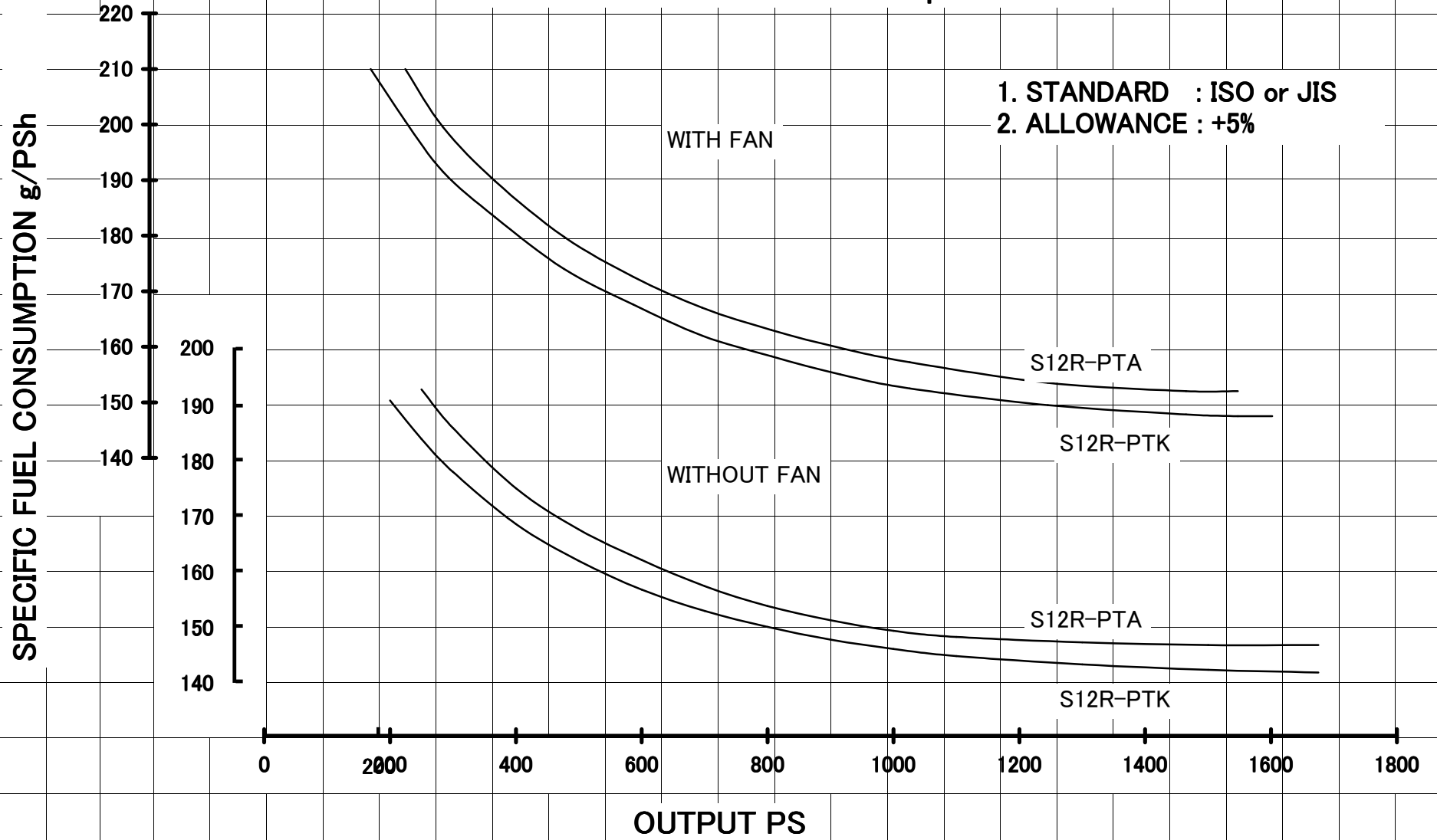
SPECIFIC FUEL CONSUMPTION g/PS_h

200
190
180
170
160
150
140
190
180
170
160
150
140

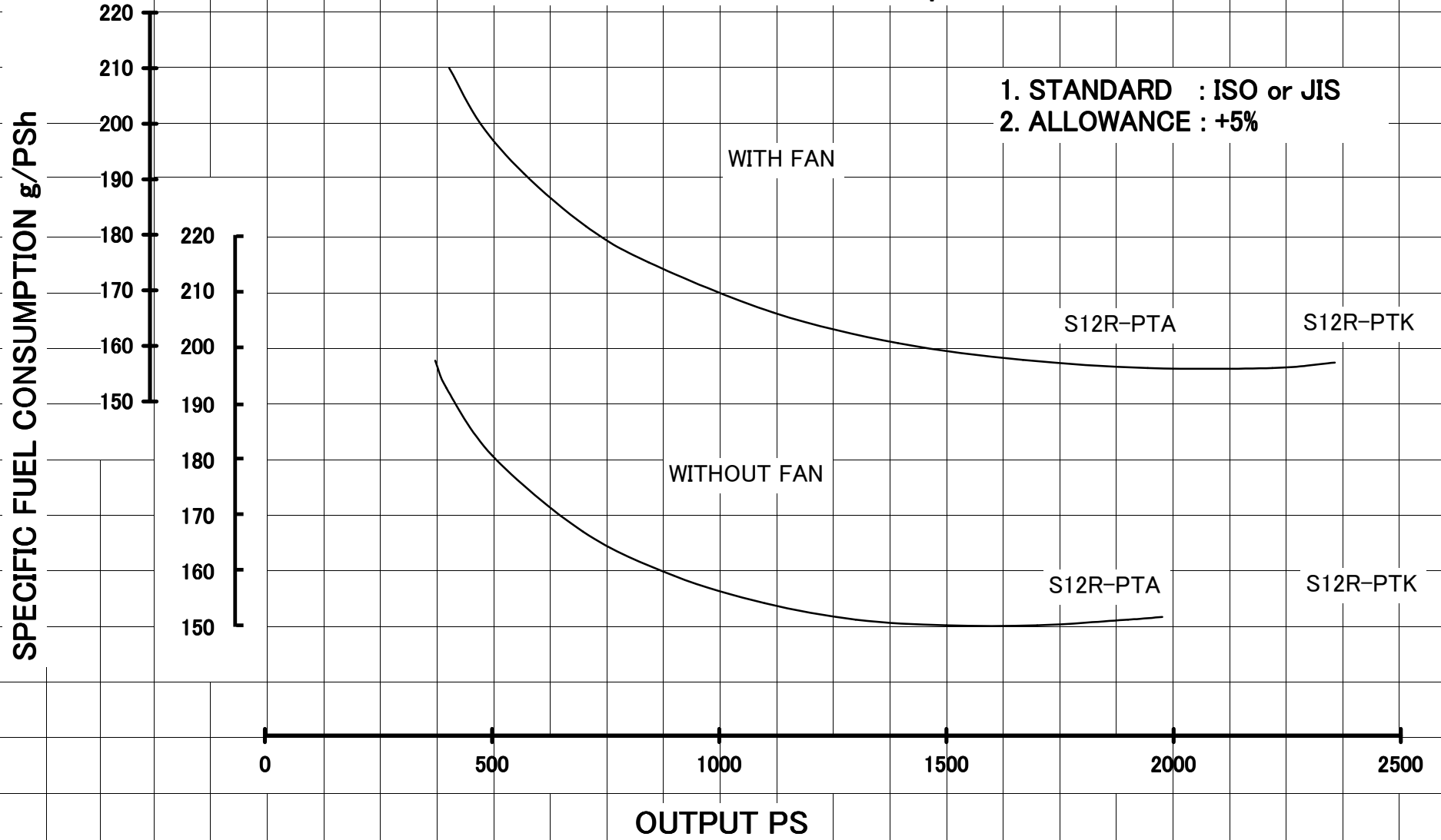


OUTPUT PS

SPECIFIC FUEL CONSUMPTION MODEL : S12R 1500rpm

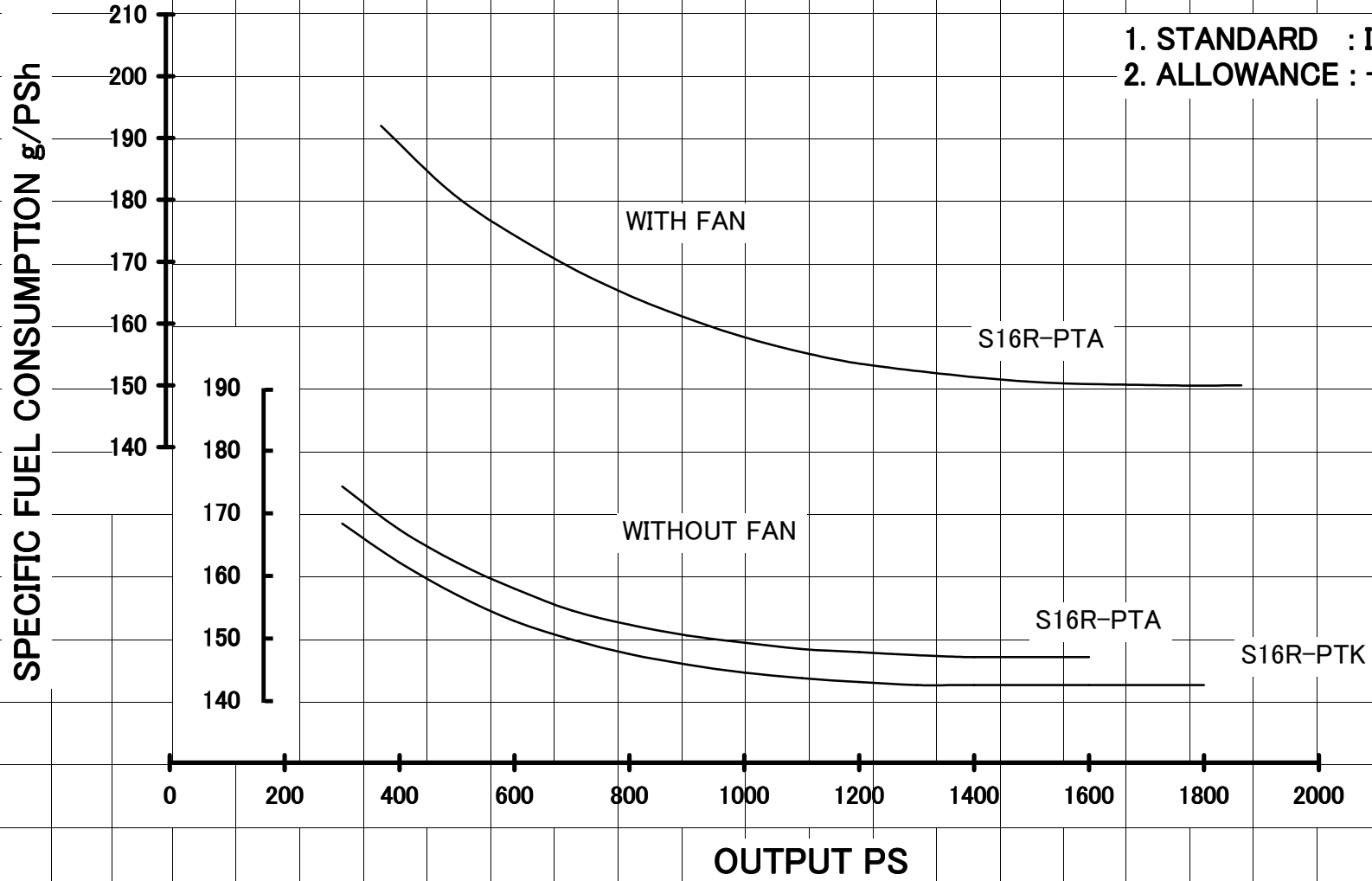


SPECIFIC FUEL CONSUMPTION MODEL : S12R 1800rpm



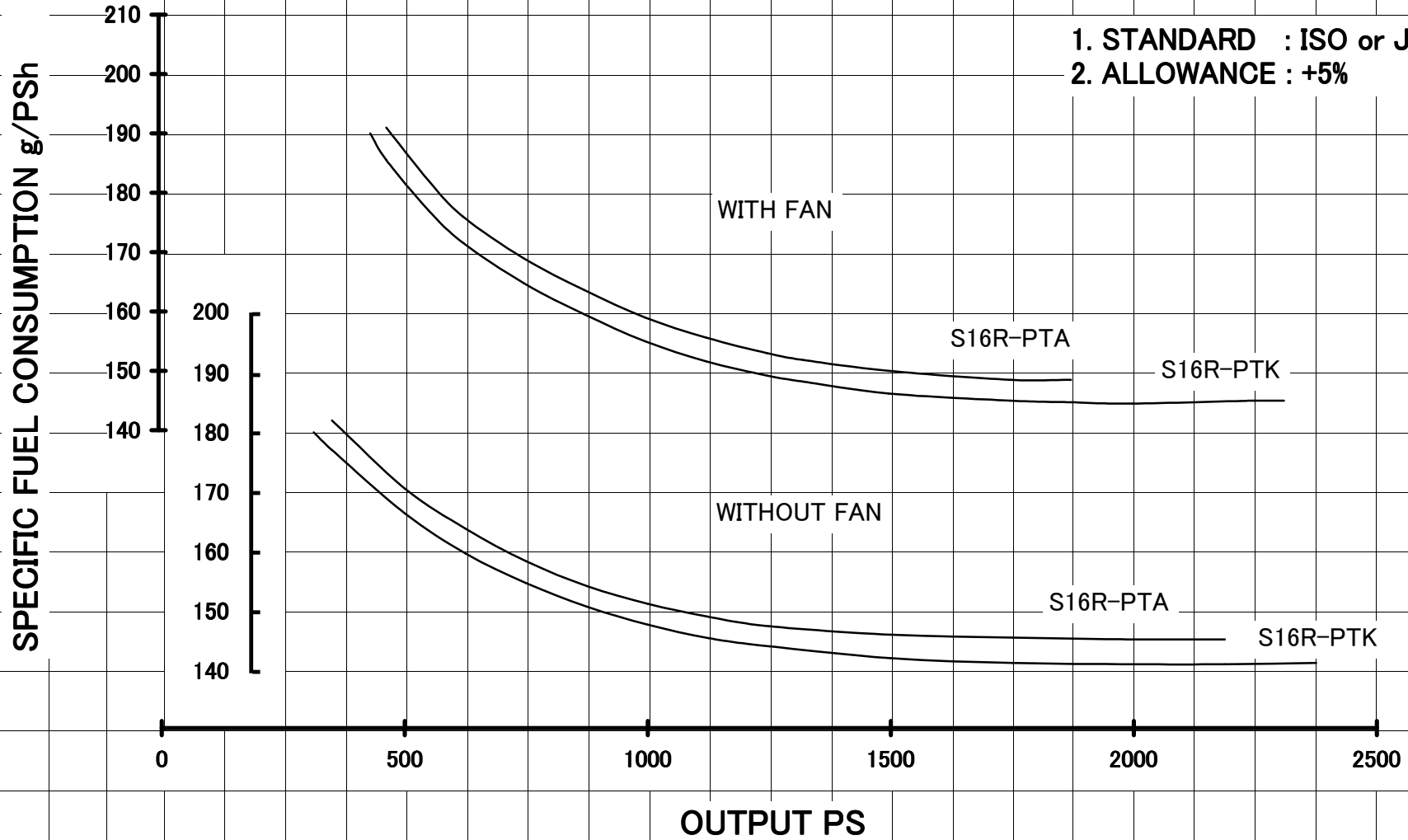
SPECIFIC FUEL CONSUMPTION MODEL : S16R 1200rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%



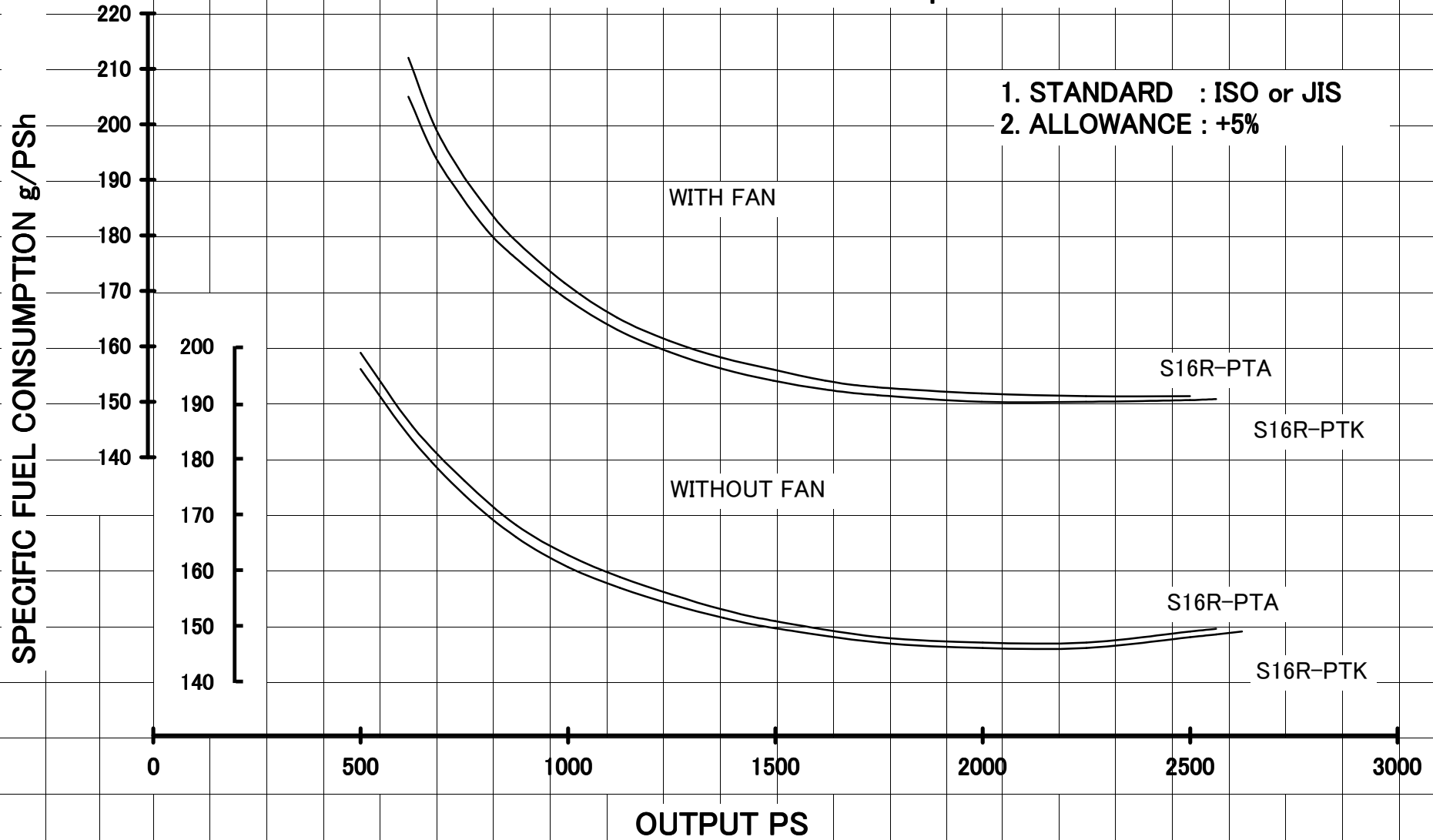
SPECIFIC FUEL CONSUMPTION MODEL : S16R 1500rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%



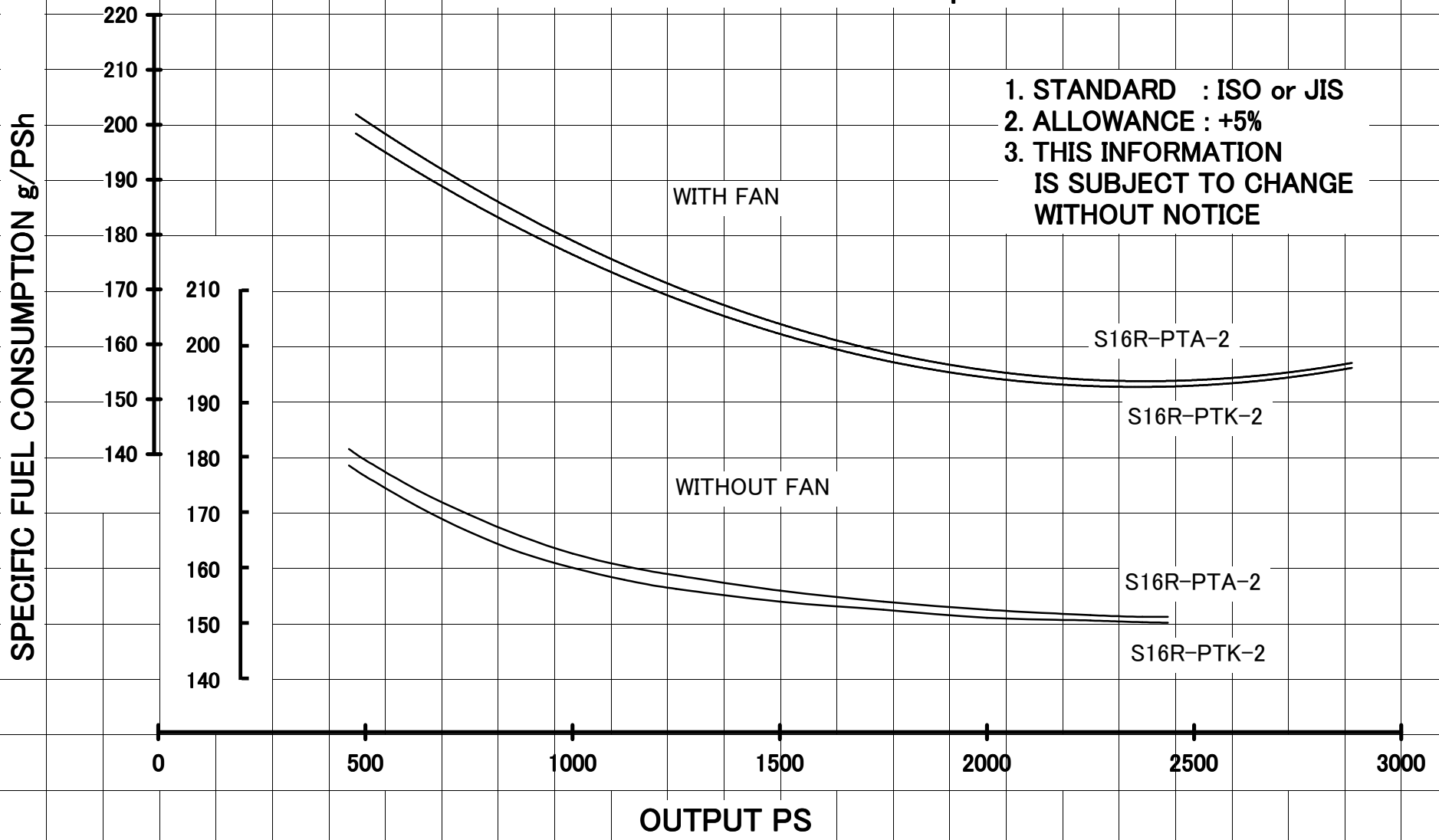
SPECIFIC FUEL CONSUMPTION MODEL : S16R 1800rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%



SPECIFIC FUEL CONSUMPTION MODEL : S16R-2 1500rpm

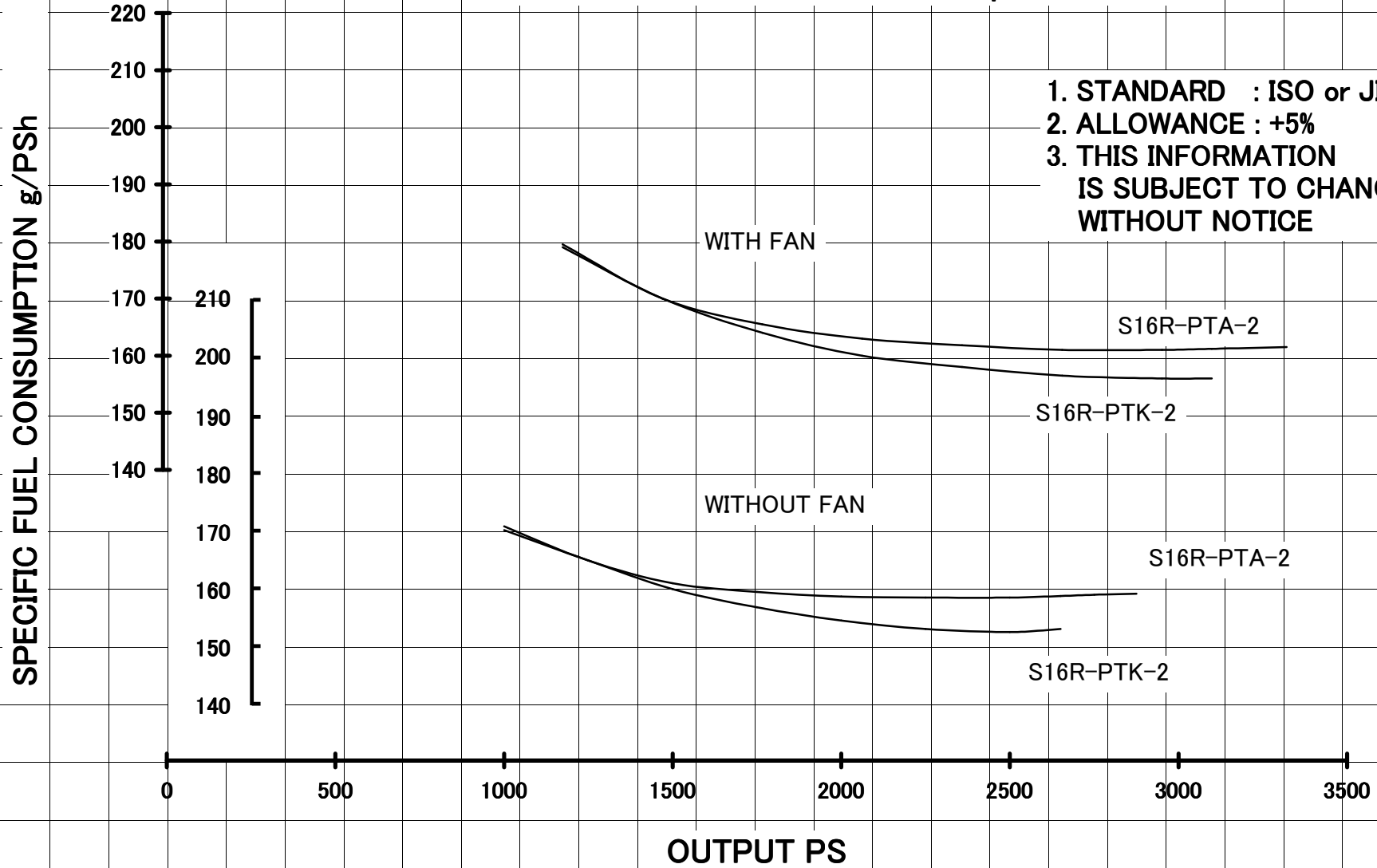
- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%
- 3. THIS INFORMATION IS SUBJECT TO CHANGE WITHOUT NOTICE



SPECIFIC FUEL CONSUMPTION

MODEL : S16R-2 1800rpm

1. STANDARD : ISO or JIS
2. ALLOWANCE : +5%
3. THIS INFORMATION IS SUBJECT TO CHANGE WITHOUT NOTICE



**SPECIFIC FUEL CONSUMPTION
MODEL : S6R2-PTAA 1500rpm**

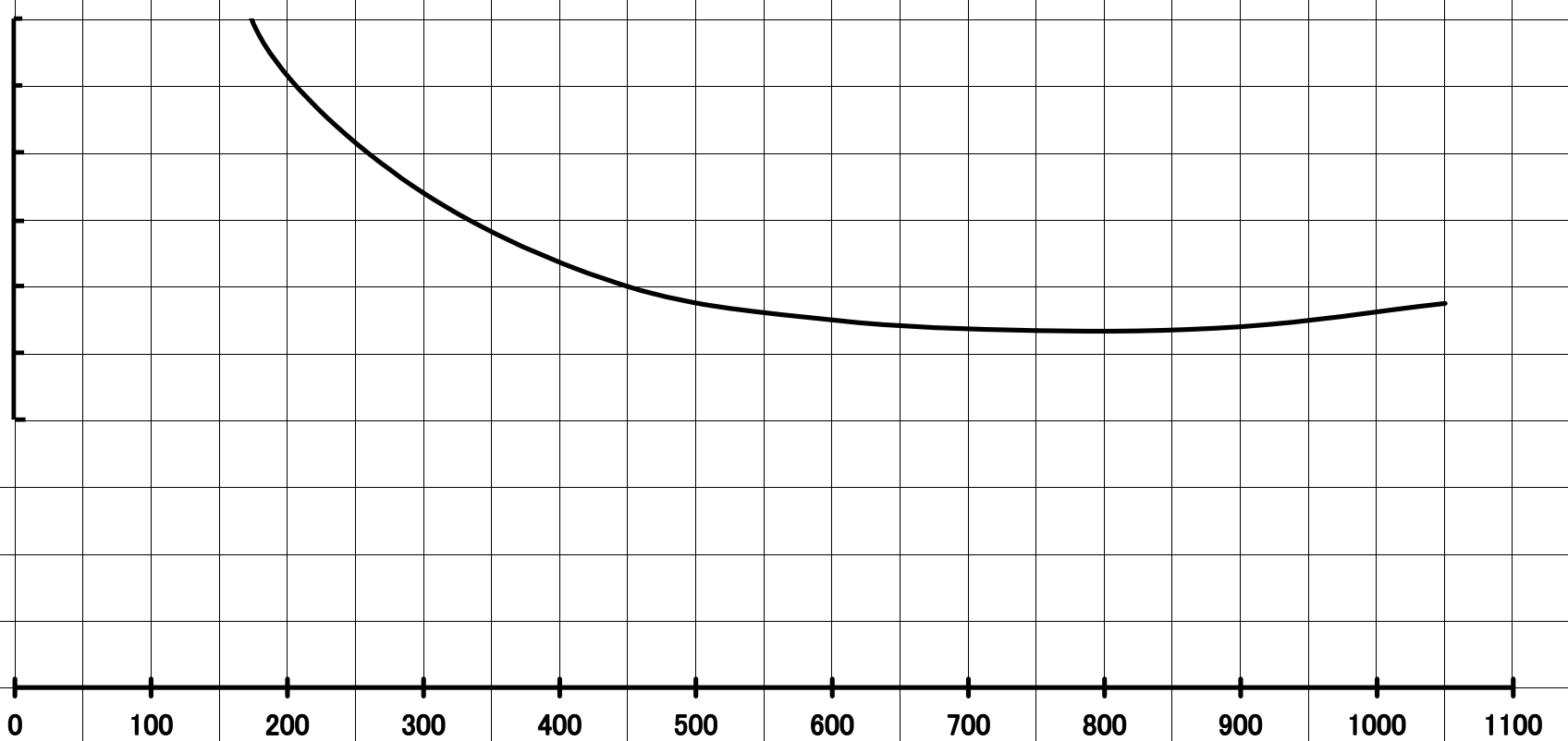
- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

SPECIFIC FUEL CONSUMPTION g/PS_h

200
190
180
170
160
150
140

0 100 200 300 400 500 600 700 800 900 1000 1100

OUTPUT PS



SPECIFIC FUEL CONSUMPTION MODEL : S12H-PTA 1500rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

SPECIFIC FUEL CONSUMPTION g/PS_h

200
190
180
170
160
150
140

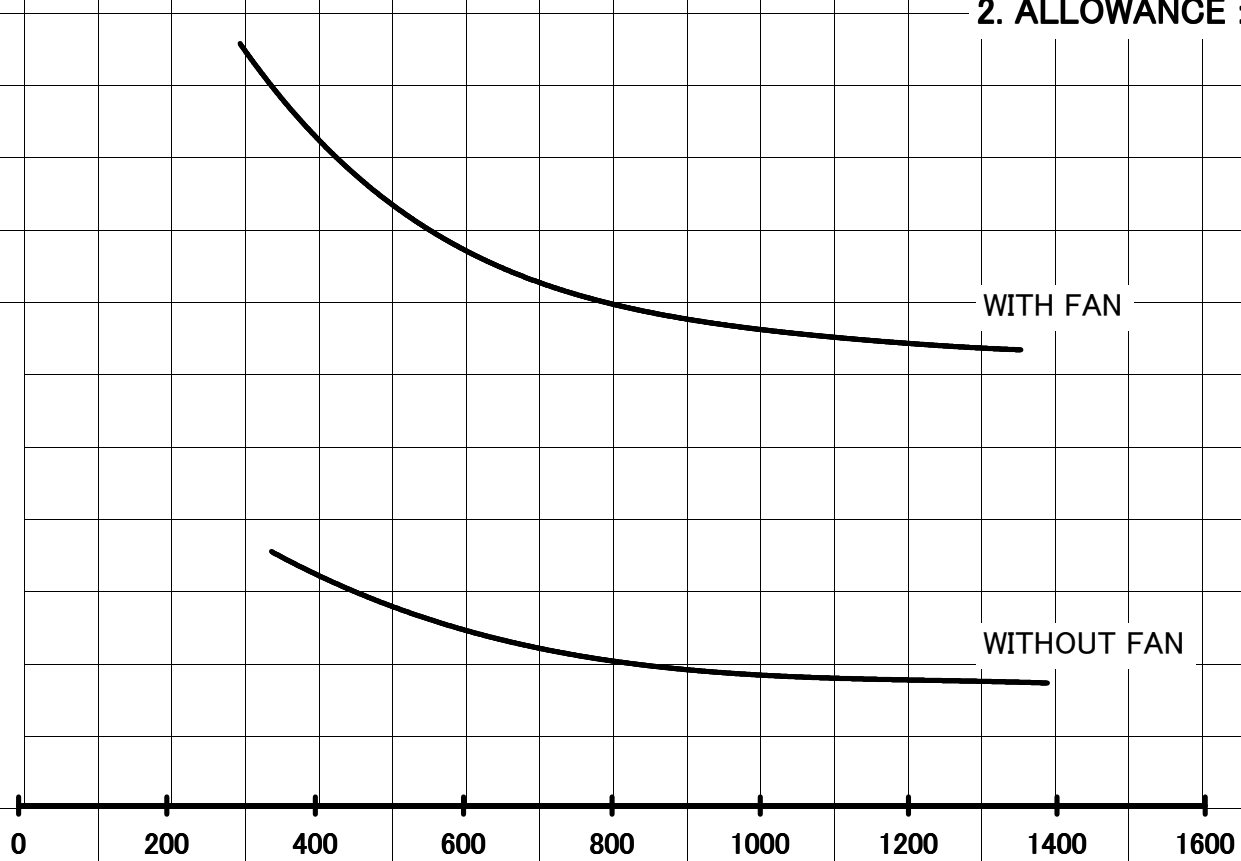
190
180
170
160
150
140

0 200 400 600 800 1000 1200 1400 1600

OUTPUT PS

WITH FAN

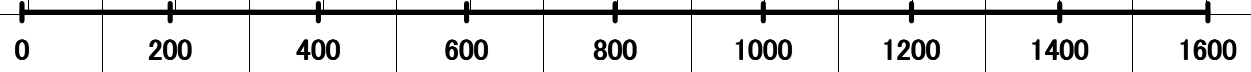
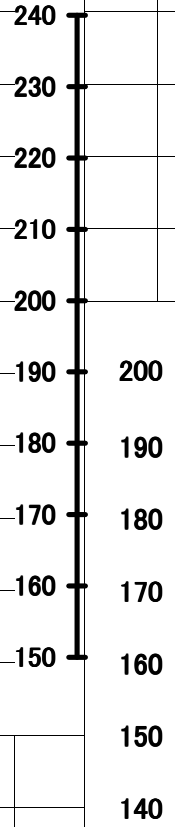
WITHOUT FAN



**SPECIFIC FUEL CONSUMPTION
MODEL : S12H-PTA 1800rpm**

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

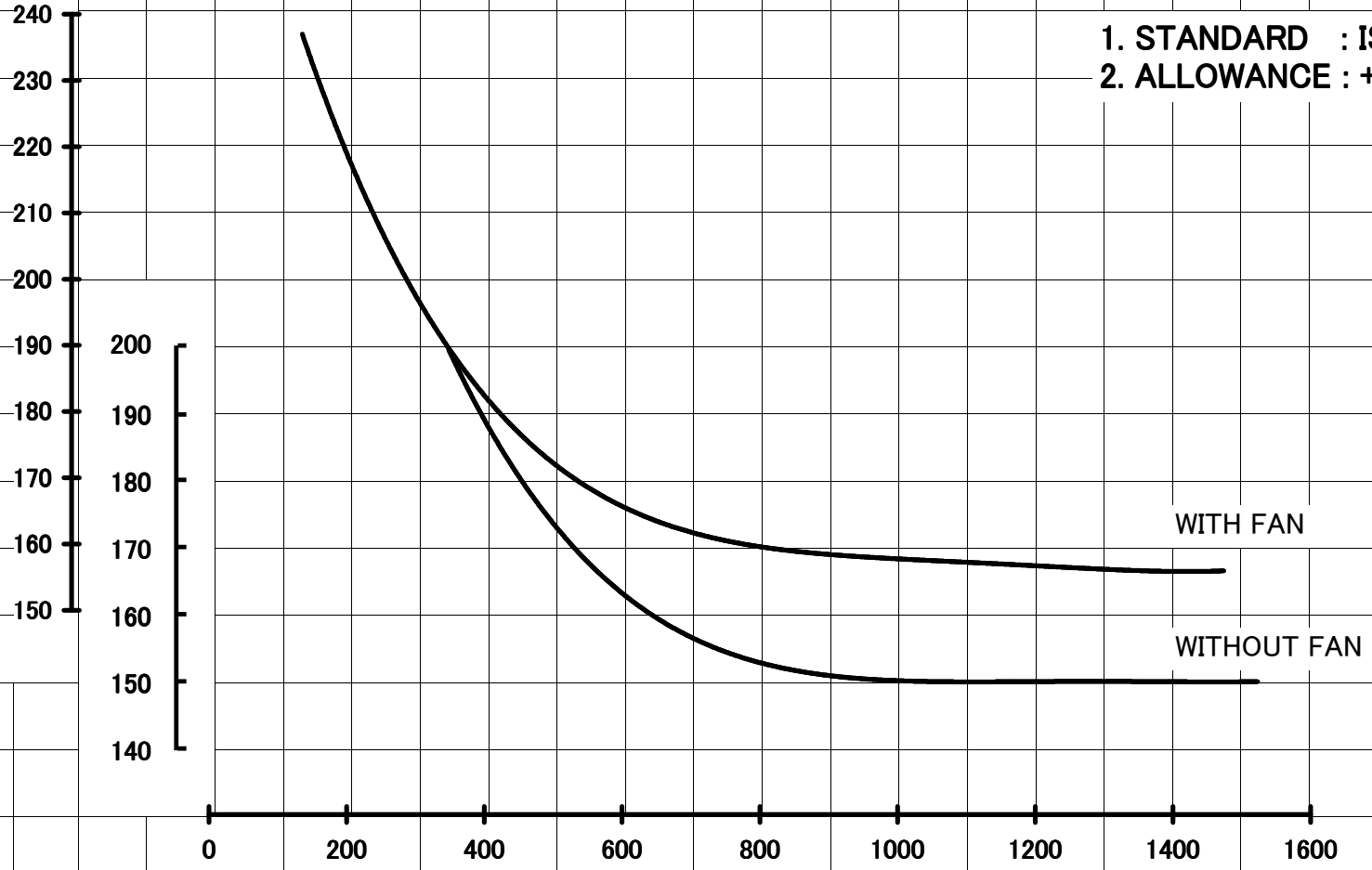
SPECIFIC FUEL CONSUMPTION g/PSH



OUTPUT PS

WITH FAN

WITHOUT FAN



SPECIFIC FUEL CONSUMPTION MODEL : S12R-PTAA2

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

SPECIFIC FUEL CONSUMPTION g/PS_h

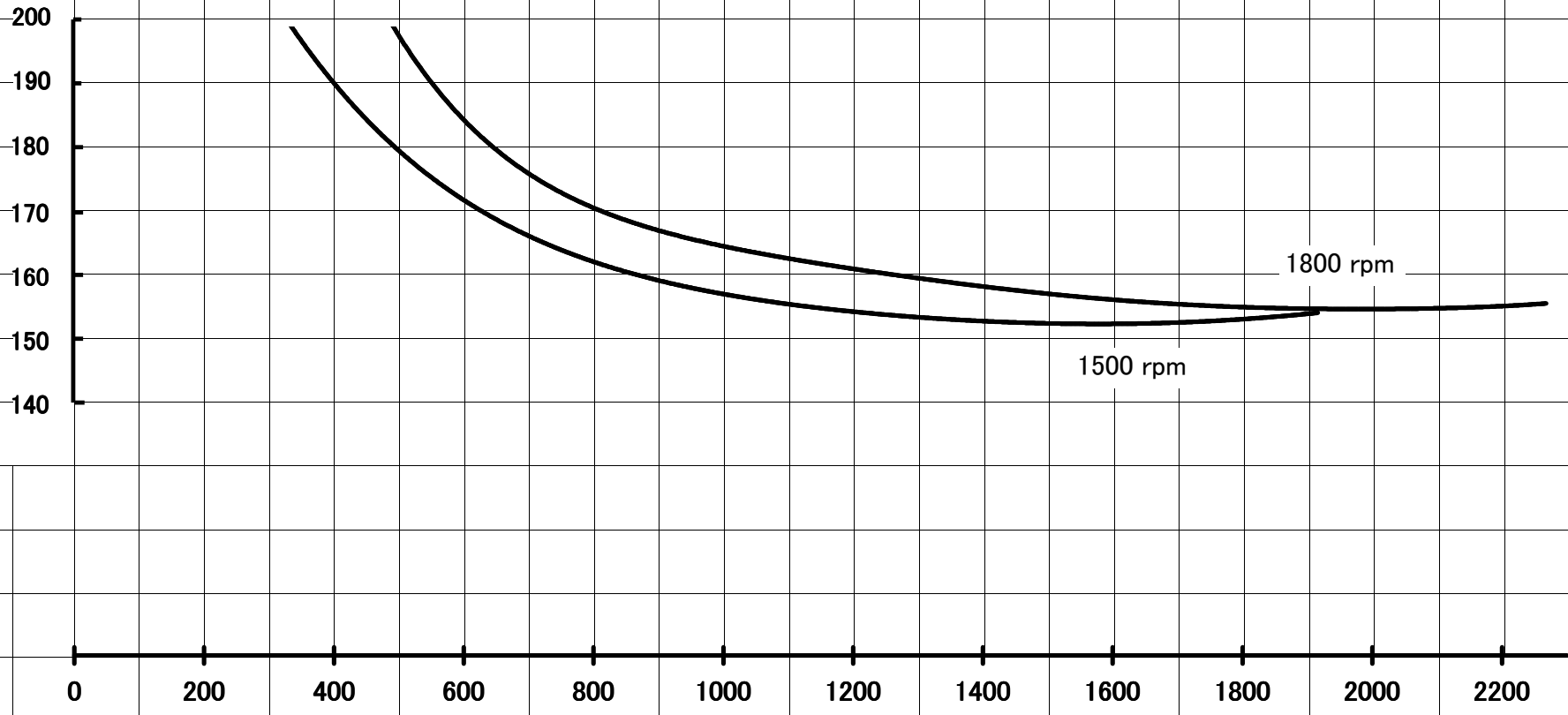
200
190
180
170
160
150
140

0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200

OUTPUT PS

1500 rpm

1800 rpm



SPECIFIC FUEL CONSUMPTION MODEL : S16R-PTAA2

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

SPECIFIC FUEL CONSUMPTION g/PS_h

200
190
180
170
160
150
140

1800 rpm

1500 rpm

0

500

1000

1500

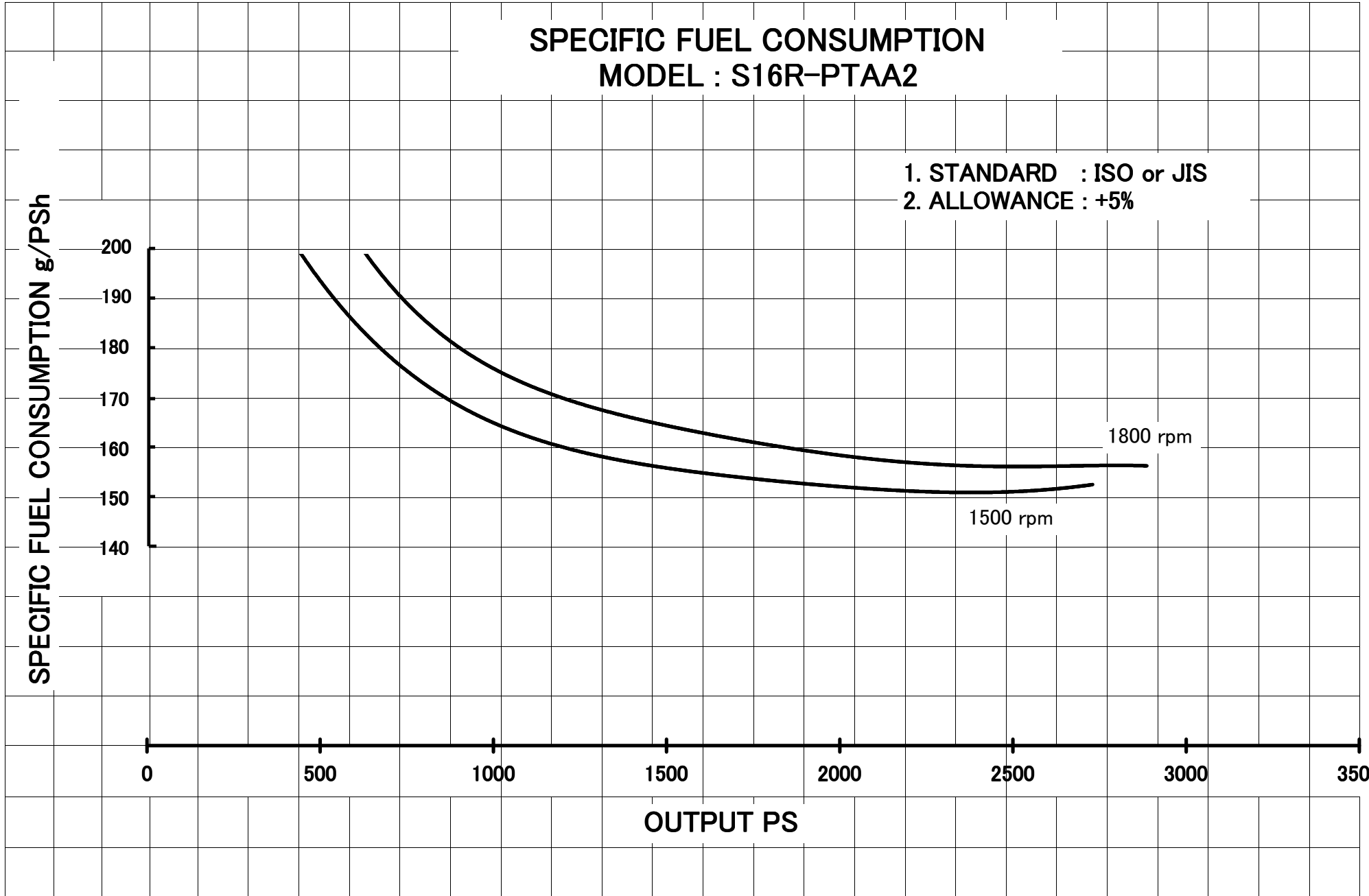
2000

2500

3000

3500

OUTPUT PS



SPECIFIC FUEL CONSUMPTION MODEL : S12R-2 1500rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

SPECIFIC FUEL CONSUMPTION g/PS_h

220
210
200
190
180
170
160
150
140

200
190
180
170
160
150
140

0 200 500 1000 1500 2000 2100

OUTPUT PS

WITH FAN

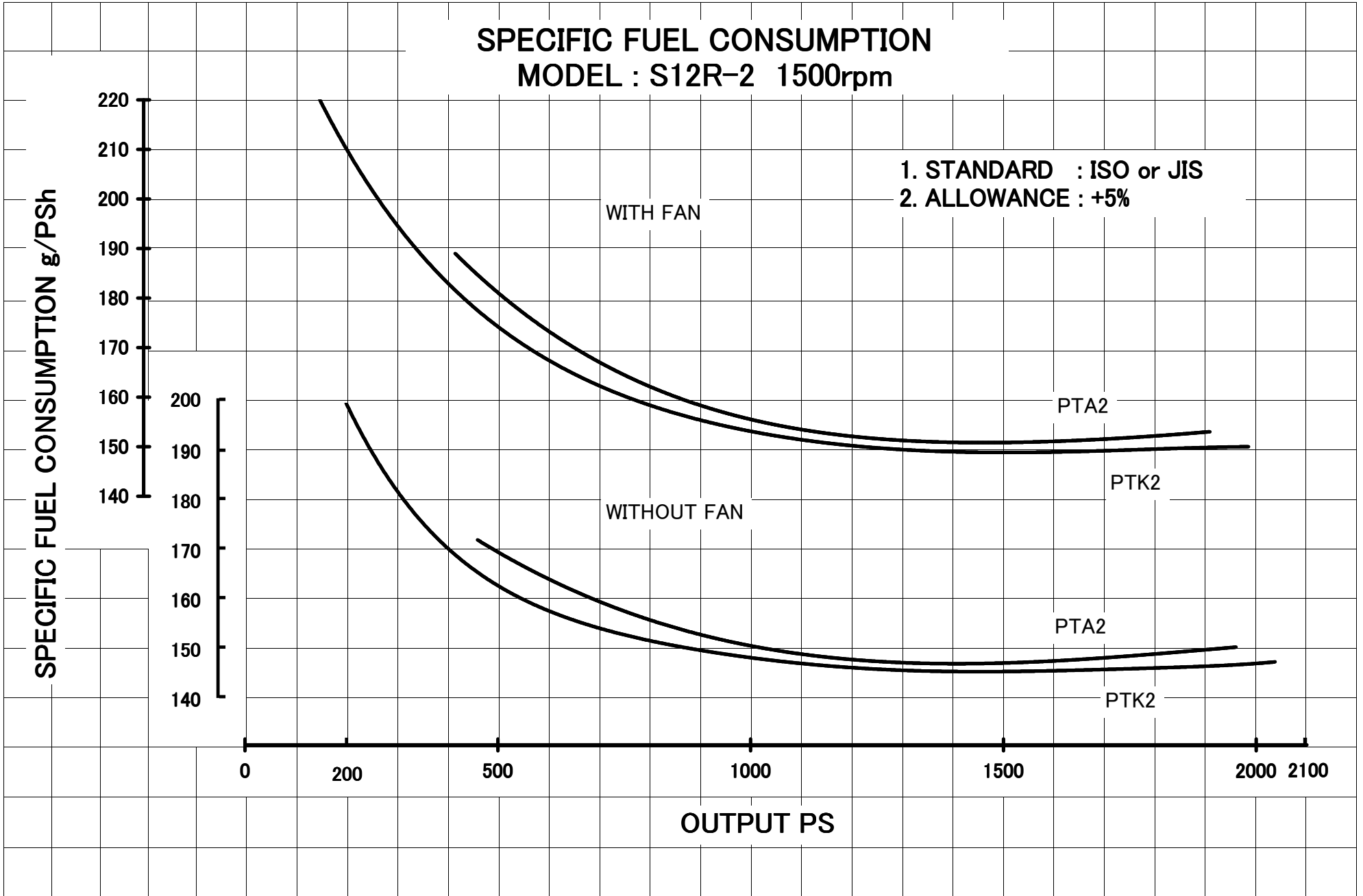
WITHOUT FAN

PTA2

PTK2

PTA2

PTK2



SPECIFIC FUEL CONSUMPTION MODEL : S12R-2 1800rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

