

Project Name: Gerallt Griffith (Afon Las)

% Exceedance Probability	Flow upstream of abstraction [l/s]	Abstraction [l/s]	Abstraction as percentage of upstream flow	Residual flow downstream of weir [l/s]	Residual flow as percentage of upstream flow	Penstock Headloss [m]	Combined Turbine & Generator Efficiency [%]	Power output [kW]	Yield [kWh]
5%	411	145.0	35.3%	266	64.7%	3.12	73%	40.68	17,820
10%	290	138.0	47.6%	152	52.4%	2.85	73%	38.99	17,078
15%	237	111.3	47.0%	125	53.0%	1.91	72%	31.74	13,901
20%	183	84.5	46.2%	99	53.8%	1.15	72%	24.56	10,758
25%	157	71.3	45.5%	85	54.5%	0.84	71%	20.58	9,013
30%	130	58.0	44.6%	72	55.4%	0.57	70%	16.62	7,279
35%	113	49.3	43.8%	63	56.2%	0.42	69%	13.96	6,115
40%	95	40.5	42.6%	55	57.4%	0.29	67%	11.18	4,898
45%	83	34.3	41.5%	48	58.5%	0.22	64%	9.05	3,964
50%	70	28.0	40.0%	42	60.0%	0.15	58%	6.72	2,941
55%	62	23.8	38.6%	38	61.4%	0.11	53%	5.21	2,282
60%	53	19.5	36.8%	34	63.2%	0.08	44%	3.55	1,557
65%	47	16.3	34.9%	30	65.1%	0.05	36%	2.42	1,062
70%	40	13.0	32.5%	27	67.5%	0.04	26%	1.40	614
75%	35	10.3	29.7%	24	70.3%	0.02	15%	0.64	279
80%	29	7.5	25.9%	22	74.1%	0.01	2%	0.06	27
85%	24	0.0	0.0%	24	100.0%	0.00	0%	0.00	0
90%	19	0.0	0.0%	19	100.0%	0.00	0%	0.00	0
95%	14	0.0	0.0%	14	100.0%	0.00	0%	0.00	0
100%	8	0.0	0.0%	8	100.0%	0.00	0%	0.00	0

Annual Totals 99,587
Turbine down time for maintenance in days per year 5
Estimated annual generation in kWh 98,222
Capacity Factor 27.56%

Catchment area: 2.680 km2
Run-off: 1456 mm
Gross Head (Static Head): 42.3 m
Net Head (Dynamic Head) at Design Flow: 39.2 m
Mean Flow (Annual Daily Flow ADF) 124 l/s
Abstraction regime (Percentage take above HOF) 50%
Hands Off Flow (HOF) Exceedance 95%
Hands Off Flow (HOF) 14 l/s
Max Turbine Flow or Design Flow 145.0 l/s
Min Turbine Flow as %age of max flow 5%
Min Turbine Flow 7 l/s
Q95/Qmean Ratio 0.11
Q10/Qmean Ratio 2.34
Max hourly abstraction (Design flow x 3600 sec) 522.0 m3
Max daily abstraction (Max hourly abstract x 24h) 12,528.0 m3
Max Annual abstraction (Max Daily Abstraction x 365 days) 4,572,720 m3

Flow Duration Curve for Gerallt Griffith (Afon Las)

Annual Flow Duration Curve:
Low-Flow Estimates from LowFlows
www.hydrosolutions.co.uk

Gerallt Griffith NRW Pre-app
Natural FD series at annual resolution
Basin-name: Gerallt Griffith NRW Pre-app
Outlet at: SH 763 225

(Based on catchment characteristics derived at grid-resolution of 20 m)

Annual mean flow	0.12 m³/s		
Q95	0.014 m³/s		
	P (%)	Q (m³/s)	(Scaled) Q [lps]
1	5	0.411	411
2	10	0.29	290
3	20	0.183	183
4	30	0.13	130
5	40	0.095	95
6	50	0.07	70
7	60	0.053	53
8	70	0.04	40
9	80	0.029	29
10	90	0.019	19
11	95	0.014	14
12	99	0.008	8

LowFlows Runoff 1456 mm
LowFlows Rainfall 1906 mm
Catchment Area 2.68 km²
BFI 0.36
LowFlows Map 64

Average Flow
124 lps

Scaled Runoff
1456 mm
Scaled Rainfall
1906 mm

SCALED FROM A GAUGED RIVER? (Y/N)	N
Scaled from a similar catchment previously Low-flowed?	N
Catchment area originally lowflowed	0.86
Scaling factor for this catchment	1.0000

Scaling factor
1.000
1.000
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