

Duel Master Black IPA

- Gravity **15.4 BLG**
- ABV **6.5 %**
- IBU **77**
- SRM **35**
- Style **Black IPA**

Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **5 %**
- Size with trub loss **24.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **29 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **22.2 liter(s)**
- Total mash volume **29.6 liter(s)**

Steps

- Temp **67 C**, Time **60 min**
- Temp **78 C**, Time **1 min**

Mash step by step

- Heat up **22.2 liter(s)** of strike water to **74.8C**
- Add grains
- Keep mash **60 min** at **67C**
- Keep mash **1 min** at **78C**
- Sparge using **14.2 liter(s)** of **76C** water or to achieve **29 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Castle Pale Ale	2.75 kg (37.2%)	80 %	8
Grain	Strzegom Pilzneński	1.75 kg (23.6%)	80 %	4
Grain	Strzegom Monachijski typ I	0.5 kg (6.8%)	79 %	14
Grain	Żytńi	0.5 kg (6.8%)	85 %	5
Grain	Weyermann Cararye Żytńi Karmelowy	0.5 kg (6.8%)	80 %	175
Grain	Carafa III	0.5 kg (6.8%)	70 %	1400
Grain	Płatki pszeniczne	0.5 kg (6.8%)	60 %	3
Grain	płatki żytnie	0.4 kg (5.4%)	60 %	3

Hops

Use for	Name	Amount	Time	Alpha acid
First Wort	lunga	20 g	90 min	11 %
Boil	AMORA PRETA	40 g	20 min	9.9 %
Boil	PHEXP2	40 g	20 min	8.1 %
Whirlpool	AMORA PRETA	30 g	30 min	9.9 %
Whirlpool	PHEXP2	30 g	30 min	8.1 %

Dry Hop	AMORA PRETA	50 g	3 day(s)	9.9 %
Dry Hop	Książęcy	70 g	3 day(s)	7.8 %