

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 % |