

## black east Ales

- Gravity **10.7 BLG**
- ABV **4.3 %**
- IBU **26**
- SRM **27.1**
- Style **American Brown Ale**

### Batch size

- Expected quantity of finished beer **40 liter(s)**
- Trub loss **5 %**
- Size with trub loss **42 liter(s)**
- Boil time **60 min**
- Evaporation rate **5 %/h**
- Boil size **48.3 liter(s)**

### Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **34.3 liter(s)**
- Total mash volume **44.1 liter(s)**

### Steps

- Temp **67 C**, Time **60 min**
- Temp **78 C**, Time **5 min**

### Mash step by step

- Heat up **34.3 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **60 min** at **67C**
- Keep mash **5 min** at **78C**
- Sparge using **23.8 liter(s)** of **76C** water or to achieve **48.3 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	8 kg (81.6%)	81 %	4
Grain	Płatki owsiane	1 kg (10.2%)	85 %	3
Grain	Weyermann - Carafa II Specjal	0.1 kg (1%)	1 %	1200
Grain	Strzegom Czekoladowy ciemny	0.5 kg (5.1%)	1 %	1200
Grain	Jęczmień palony	0.2 kg (2%)	1 %	1200

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Chinook	25 g	60 min	13 %
Aroma (end of boil)	Cascade	20 g	15 min	6 %
Aroma (end of boil)	Cascade	50 g	5 min	6 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	11.5 g	Fermentis
Safale S-04	Ale	Dry	11.5 g	Safale