

MILK MARSHAL

- Gravity **18.9 BLG**
- ABV **8.2 %**
- IBU **29**
- SRM **37.1**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **19 liter(s)**
- Trub loss **15 %**
- Size with trub loss **21.9 liter(s)**
- Boil time **60 min**
- Evaporation rate **12 %/h**
- Boil size **25 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **22.8 liter(s)**
- Total mash volume **30.4 liter(s)**

Steps

- Temp **67 C**, Time **120 min**
- Temp **75 C**, Time **10 min**

Mash step by step

- Heat up **22.8 liter(s)** of strike water to **74.8C**
- Add grains
- Keep mash **120 min** at **67C**
- Keep mash **10 min** at **75C**
- Sparge using **9.8 liter(s)** of **76C** water or to achieve **25 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Malting company of ireland - Irish Ale Malt	4.6 kg (60.5%)	80.5 %	7
Grain	Weyermann - Pale Wheat Malt	1.2 kg (15.8%)	85 %	4
Grain	Bestmalz - Cara Munich Type II	0.2 kg (2.6%)	75 %	120
Grain	Bestmalz - Cara Aromatic	0.35 kg (4.6%)	78 %	50
Grain	Black Barley (Roast Barley) crushed	0.5 kg (6.6%)	50 %	1300
Grain	weyermann - abbey malt	0.75 kg (9.9%)	75 %	45

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Tradition	60 g	50 min	4.8 %
Aroma (end of boil)	Fuggles	60 g	5 min	4.5 %

Yeasts

Name	Type	Form	Amount	Laboratory
------	------	------	--------	------------

FM13 Irlandzkie Ciemności	Ale	Dry	115.15 g	Fermentum Mobile
------------------------------	-----	-----	----------	------------------

Extras

Type	Name	Amount	Use for	Time
Fining	Whirlfloc	3.45 g	Boil	5 min
Other	lactose	500 g	Boil	5 min