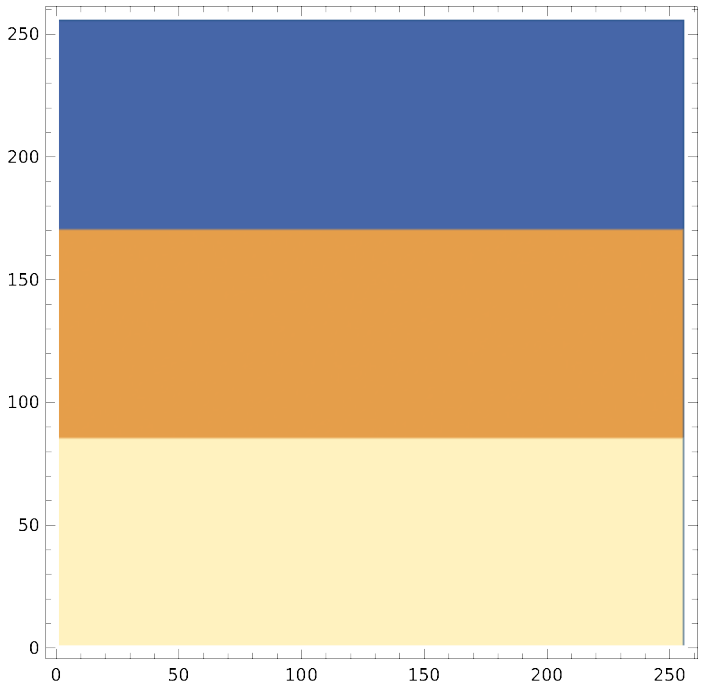
In[15]:=
```
circ[r_] := If[r ≤ 1, 1, 0];
rect[x_] := If[-1 / 2 ≤ x < 1 / 2, 1, 0];
```

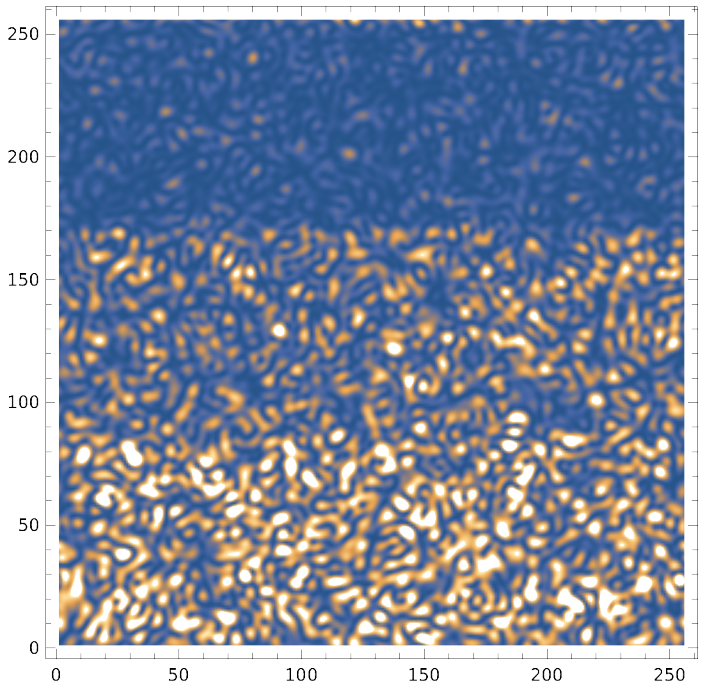
In[17]:=
```
n = 256;
k = 8;
r0 = n / k;
objectintensity =
  Table[(1. * rect[(x - n / 6) / (n / 3)] + 0.5 * rect[(x - n / 2) / (n / 3)] + 0.1 * rect[(x - 5 * n / 6) / (n / 3)]) *
    rect[y / (2 * n)], {x, n}, {y, n}];
randomfield = Table[Exp[I * 2 * Pi * Random[]], {n}, {n}];
scatterfield = Sqrt[objectintensity] * randomfield;
p1 = ListDensityPlot[Abs[scatterfield]^2, Mesh → False, DisplayFunction → Identity]
```

Out[23]=



In[24]:=
```
bandpass = Table[circ[Sqrt[(p - n / 2)^2 + (q - n / 2)^2] / r0], {p, 1, n}, {q, 1, n}];
pupilfield = bandpass * Fourier[scatterfield];
imagefield = InverseFourier[pupilfield];
imageintensity = Abs[imagefield]^2;
p2 = ListDensityPlot[imageintensity, Mesh → False, DisplayFunction → Identity]
```

Out[28]=



In[8]:=
```
InverseFourier[
 {{4 - 2 I, -1, 2 + 5 I, -3 + I}, {4 + 2 I, -1, 2 - 5 I, -3 + I}, {-5 - 2 I, 1 - 3 I, 1 + I, -2 + 3 I}}]
```

Out[8]=
```
{{-0.288675 + 0.288675 i, -2.88675 - 2.88675 i, 4.90748 - 0.866025 i, 1.73205 + 1.1547 i},
 {0.760363 - 0.162287 i, 4.62639 - 5.70374 i, 1.12639 - 1.95096 i, 2.68301 - 3.49241 i},
 {1.26036 + 3.33771 i, -0.873612 + 0.796261 i, 2.62639 + 4.54904 i, -1.81699 - 1.99241 i}}
```