**APPENDIX**

Tables 1-3 give the coupling efficiencies as well as ratio of air holes (r1, a1, r2, a2, w1, w2, h) w.r.t the hole parameters (r = 130 nm, a = 360 nm) of the photonic crystal.

TABLE 1

2-WAY ENERGY DEMUX AND SPLITTER

|  |  |  |
| --- | --- | --- |
| PARAMETER | DEMUX | SPLITTER |
| % Transmission: cav1 | 41.9% @ λ = 1.008μm | 41.4% @ λ = 1.005μm |
| % Transmission: cav2 | 42% @ λ = 1.010μm | 31.2% @ λ = 1.005μm |
| r1/r (r1 = r2 for both i/p & o/p cavities) | 0.8 | 0.8 |
| a1/a(a1=a2) | 1.11 | 1.11 |
| w1/r | 1.115 | 1.115 |
| w2/r | 1.038 | 1.115 |
| h/r | 0.769 | 1.0 |

TABLE 2

3-WAY ENERGY DEMUX AND SPLITTER

|  |  |  |
| --- | --- | --- |
| PARAMETER | DEMUX | SPLITTER |
| % Transmission: cav1 | 19.8% @ λ = 1.013 μm | 7.2% @ λ = 1.004 μm |
| % Transmission: cav2 | 59.7% @ λ = 1.016 μm | 29.6% @ λ = 1.004 μm |
| % Transmission: cav3 | 23% @ λ = 1.011 μm | 5.6% @ λ = 1.004 μm |
| r1/r (r1 = r2 for both i/p & o/p cavities) | 0.808 | 0.808 |
| a1/a (a1 = a2) | 1.11 | 1.11 |
| w1/r | 1.115 | 1.115 |
| w2/r | 1.115 | 1.038 |
| w3/r | 1.115 | 1.153 |
| h/r | 1.076 | 0.846 |

TABLE 3

6-WAY ENERGY DEMUX AND SPLITTER

|  |  |  |
| --- | --- | --- |
| PARAMETER | DEMUX | SPLITTER |
| %Transmission: cav1 | 2.7% @ λ = 1.186 μm | 8.5%@λ=1.223μm |
| %Transmission: cav2 | 3.5% @ λ=1.184 μm | 9.3%@λ=1.223μm |
| %Transmission: cav3 | 7.1% @ λ = 0.982 μm | 8.8%@λ=1.223μm |
| %Transmission: cav4 | 12.6% @ λ = 0.979 μm | 36.8%@λ=1.223μm |
| %Transmission: cav5 | 10.6% @ λ = 0.984 μm | 27.05%@λ=1.223μm |
| %Transmission: cav6 | 13.44% @ λ = 1.169 μm | 7.6%@λ=1.223μm |
| r1/r ( i/p cavity) | 0.923 | 0.8 |
| r2/r (o/p cavity) | 0.923 | 0.615 |
| a1/r (a1 = a2) | 1.11 | 1.11 |
| w1/r | 0.923 | 1.0 |
| w2/r | 1.038 | 0.538 |