**建筑节能设计报告书**

公共建筑

甲类

|  |  |
| --- | --- |
| 工程名称 | 崇明楼改造 |
| 工程地点 | 新疆-乌鲁木齐 |
| 设计编号 |  |
| 建设单位 |  |
| 设计单位 |  |
| 设 计 人 |  |
| 校 对 人 |  |
| 审 核 人 |  |
| 设计日期 | 2021年1月4日 |



|  |  |
| --- | --- |
| 采用软件 | 节能设计BECS2020 |
| 软件版本 | 20190909 |
| 研发单位 | 北京绿建软件有限公司 |
| 正版授权码 | T13699974501 |

**目 录**

[1 建筑概况 4](#_Toc10668)

[2 设计依据 4](#_Toc15822)

[3 规定性指标检查 4](#_Toc518)

[3.1 工程材料 4](#_Toc27187)

[3.2 围护结构作法简要说明 5](#_Toc12058)

[3.3 体形系数 7](#_Toc21583)

[3.4 窗墙比 7](#_Toc1127)

[3.4.1 窗墙比 7](#_Toc25257)

[3.4.2 外窗表 7](#_Toc21304)

[3.5 可见光透射比 8](#_Toc6842)

[3.6 天窗 8](#_Toc1809)

[3.6.1 天窗屋顶比 8](#_Toc3622)

[3.6.2 天窗类型 9](#_Toc5776)

[3.7 屋顶构造 9](#_Toc24199)

[3.7.1 屋顶构造一 9](#_Toc29809)

[3.8 外墙构造 9](#_Toc29941)

[3.8.1 外墙构造一 9](#_Toc18835)

[3.8.2 外墙主断面传热系数的修正系数ψ 10](#_Toc12911)

[3.9 挑空楼板构造 10](#_Toc18472)

[3.9.1 底面接触室外空气的架空或外挑楼板构造一 10](#_Toc18630)

[3.10 采暖与非采暖隔墙 11](#_Toc10624)

[3.10.1 采暖与非采暖隔墙相关构造 11](#_Toc10181)

[3.10.2 采暖与非采暖隔墙平均热工特性 11](#_Toc13068)

[3.11 地下车库与供暖房间之间的楼板 12](#_Toc2212)

[3.11.1 控温与非控温楼板构造一 12](#_Toc17543)

[3.12 外窗热工 12](#_Toc12809)

[3.12.1 外窗构造 12](#_Toc16495)

[3.12.2 平均传热系数 12](#_Toc8488)

[3.12.3 总体热工性能 14](#_Toc26927)

[3.13 周边地面构造 14](#_Toc26811)

[3.13.1 周边地面构造一 14](#_Toc24741)

[3.14 采暖地下室外墙构造 14](#_Toc23788)

[3.15 变形缝 15](#_Toc9461)

[3.16 有效通风换气面积 15](#_Toc7021)

[3.17 非中空窗面积比 15](#_Toc31936)

[3.18 外窗气密性 16](#_Toc14659)

[3.19 外门气密性 16](#_Toc5685)

[3.20 幕墙气密性 16](#_Toc27676)

[3.21 规定性指标检查结论 16](#_Toc30622)

[4 热工性能权衡判断 17](#_Toc29479)

[4.1 说明 17](#_Toc5454)

[4.2 屋顶构造 17](#_Toc25536)

[4.2.1 屋顶构造一 17](#_Toc16422)

[4.3 外墙构造 18](#_Toc24691)

[4.3.1 外墙构造一 18](#_Toc30978)

[4.3.2 外墙主断面传热系数的修正系数ψ 18](#_Toc13602)

[4.4 外窗热工 18](#_Toc22734)

[4.4.1 外窗构造 18](#_Toc26963)

[4.4.2 平均传热系数 19](#_Toc31259)

[4.4.3 总体热工性能 20](#_Toc8686)

[4.5 综合权衡 20](#_Toc30816)

[4.5.1 计算条件 20](#_Toc13816)

[4.5.2 房间类型 21](#_Toc31316)

[4.5.3 综合权衡 22](#_Toc13833)

[4.6 结论 22](#_Toc10239)

[4.7 附录 23](#_Toc25744)

[4.7.1 工作日/节假日室内空调温度时间表(℃) 23](#_Toc12918)

[4.7.2 工作日/节假日室内供暖温度时间表(℃) 24](#_Toc19748)

[4.7.3 工作日/节假日人员逐时在室率(%) 25](#_Toc613)

[4.7.4 工作日/节假日照明开关时间表(%) 27](#_Toc23413)

[4.7.5 工作日/节假日设备逐时使用率(%) 28](#_Toc3010)

[4.7.6 工作日/节假日空调系统运行时间表(1:开,0:关) 30](#_Toc5778)

# 建筑概况

|  |  |  |
| --- | --- | --- |
| 工程名称 | 崇明楼改造 | |
| 工程地点 | 新疆-乌鲁木齐 | |
| 地理位置 | 北纬：44.00° | 东经：87.61° |
| 建筑面积 | 地上18854㎡ 地下3129㎡ | |
| 建筑层数 | 地上3 地下1 | |
| 建筑高度 | 16.9m | |
| 建筑（节能计算）体积 | 94597.98 | |
| 建筑（节能计算）外表面积 | 12903.06 | |
| 北向角度 | 180 | |
| 结构类型 | 砖混结构 | |
| 外墙太阳辐射吸收系数 | 0.56 | |
| 屋顶太阳辐射吸收系数 | 0.72 | |

# 设计依据

1. 《公共建筑节能设计标准》(GB50189-2015)

2. 《民用建筑热工设计规范》(GB50176)

3. 《建筑外门窗气密，水密，抗风压性能分级及检测方法》（GB/T 7106-2008）

4. 《建筑幕墙》（GB/T 21086-2007）

# 规定性指标检查

## 工程材料

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 材料名称 | 导热系数λ | 蓄热系数S | 密度ρ | 比热容Cp | 蒸汽渗透系数u | 备注 |
| W/(m.K) | W/(㎡.K) | kg/m3 | J/(kg.K) | g/(m.h.kPa) |
| 水泥砂浆 | 0.930 | 11.370 | 1800.0 | 1050.0 | 0.0210 | 来源：《民用建筑热工设计规范》GB50176-2016 |
| 钢筋混凝土 | 1.740 | 17.200 | 2500.0 | 920.0 | 0.0158 | 来源：《民用建筑热工设计规范》GB50176-2016 |
| 挤塑聚苯乙烯泡沫塑料（带表皮） | 0.030 | 0.340 | 35.0 | 1380.0 | 0.0000 | 来源：《民用建筑热工设计规范》GB50176-2016，蒸汽渗透系数没有给出 |
| 粘土陶粒混凝土 | 0.530 | 7.250 | 1200.0 | 1050.0 | 0.0405 | 修正系数=1.15 |
| 建筑用真空绝热板 | 0.008 | 0.340 | 430.0 | 462.1 | 0.0000 | 修正系数=1.2 |
| 水泥砂浆 | 0.930 | 11.306 | 1800.0 | 1050.0 | 0.0000 |  |
| 灰砂砖 | 0.740 | 12.720 | 1800.0 | 1670.3 | 0.1050 |  |
| 保温砂浆 | 0.290 | 4.209 | 800.0 | 1050.0 | 0.0000 | 蒸汽渗透系数没有给出 |
| 水泥砂浆楼面面层 | 0.870 | 10.627 | 1700.0 | 1050.0 | 0.0000 | 新疆公建XJJ034-2006 |
| C15细石混凝土垫层 | 1.280 | 13.410 | 2100.0 | 920.0 | 0.0000 | 新疆公建XJJ034-2006 |
| 10厚1：3水泥砂浆找平层 | 1.280 | 13.410 | 2100.0 | 920.0 | 0.0000 | 新疆公建XJJ034-2006 |
| 钢筋混凝土楼板 | 1.740 | 17.060 | 2500.0 | 920.0 | 0.0000 | 新疆公建XJJ034-2006 |
| 薄抹灰饰面层 | 0.930 | 11.306 | 1800.0 | 1050.0 | 0.0000 | 新疆公建XJJ034-2006 |
| 室内抹灰 | 0.870 | 10.627 | 1700.0 | 1050.0 | 0.0000 | 新疆公建XJJ034-2006 |
| 加气混凝土砌块(1) | 0.190 | 2.693 | 500.0 | 1050.0 | 0.0000 | 新疆公建XJJ034-2006 |
| 粉煤灰陶粒砼隔音层 | 0.570 | 7.522 | 1300.0 | 1050.0 | 0.0000 | 新疆公建XJJ034-2006 |
| 保温砂浆 | 0.290 | 4.209 | 800.0 | 1050.0 | 0.0000 | 蒸汽渗透系数没有给出 |
| 胶粉聚苯颗粒保温浆料 | 0.060 | 2.490 | 200.0 | 1170.0 | 0.1910 | 修正系数=1.2 |
| 碎石、卵石混凝土 | 1.510 | 15.243 | 2300.0 | 920.0 | 0.0017 |  |
| 素土夯实 | 1.160 | 13.054 | 2000.0 | 1010.0 | 0.0000 |  |

## 围护结构作法简要说明

**1. 屋顶构造：**屋顶构造一：（由上到下）

水泥砂浆 30mm＋保温砂浆 30mm＋粘土陶粒混凝土 30mm＋建筑用真空绝热板 100mm＋钢筋混凝土 100mm

**2. 外墙构造：**外墙构造一：（由外到内）

保温砂浆 20mm＋建筑用真空绝热板 80mm＋灰砂砖 370mm＋建筑用真空绝热板 50mm＋保温砂浆 20mm

**3. 挑空楼板构造：**底面接触室外空气的架空或外挑楼板构造一：（由上到下）

水泥砂浆楼面面层 30mm＋C15细石混凝土垫层 50mm＋建筑用真空绝热板 50mm＋10厚1：3水泥砂浆找平层 10mm＋钢筋混凝土楼板 120mm＋建筑用真空绝热板 50mm＋薄抹灰饰面层 6mm

**4. 控温与非控温隔墙：**非供暖房间与供暖房间之间的隔墙构造一：

室内抹灰 20mm＋建筑用真空绝热板 50mm＋灰砂砖 240mm＋建筑用真空绝热板 50mm＋薄抹灰饰面层 10mm

**5. 控温房间隔墙：**控温房间隔墙构造一：

室内抹灰 20mm＋建筑用真空绝热板 50mm＋灰砂砖 240mm＋建筑用真空绝热板 50mm＋薄抹灰饰面层 6mm

**6. 地下车库与供暖房间之间的楼板：**控温与非控温楼板构造一：

水泥砂浆楼面面层 20mm＋粉煤灰陶粒砼隔音层 60mm＋建筑用真空绝热板 50mm＋10厚1：3水泥砂浆找平层 10mm＋钢筋混凝土楼板 100mm＋建筑用真空绝热板 50mm＋薄抹灰饰面层 6mm

**7. 天窗：**下限+PA断桥铝合金窗框+双银Low-E中空玻璃+空气层厚12mm：

传热系数0.843W/m^2.K，自身遮阳系数0.300

**8. 外窗：**下限+PA断桥铝合金窗框+双银Low-E中空玻璃+空气层厚12mm：

传热系数0.843W/m^2.K，自身遮阳系数0.300

**9. 幕墙：**下限+PA断桥铝合金窗框+双银Low-E中空玻璃+空气层厚12mm：

传热系数0.843W/m^2.K，自身遮阳系数0.300

**10. 周边地面构造：**周边地面构造一：

胶粉聚苯颗粒保温浆料 20mm＋碎石、卵石混凝土 40mm＋挤塑聚苯乙烯泡沫塑料（带表皮） 70mm＋碎石、卵石混凝土 50mm＋素土夯实 200mm

## 体形系数

|  |  |
| --- | --- |
| 外表面积 | 12903.06 |
| 建筑体积 | 94597.98 |
| 体形系数 | 0.14 |
| 标准依据 | 《公共建筑节能设计标准》(GB50189-2015)第3.2.1条 |
| 标准要求 | 严寒和寒冷地区体形系数应符合表3.2.1的规定(s≤0.40) |
| 结论 | 满足 |

## 窗墙比

### 窗墙比

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 朝向 | 立面 | 窗面积(㎡) | 墙面积(㎡) | 窗墙比 | 限值 | 结论 |
| 南向 | 立面3 | 232.31 | 1522.52 | 0.15 | 0.60 | 适宜 |
| 北向 | 立面4 | 248.17 | 1522.52 | 0.16 | 0.60 | 适宜 |
| 东向 | 立面1 | 724.86 | 1490.75 | 0.49 | 0.60 | 适宜 |
| 西向 | 立面2 | 219.18 | 1578.50 | 0.14 | 0.60 | 适宜 |
| 《标准》依据 | | 《公共建筑节能设计标准》(GB50189-2015)第3.2.2条 | | | | |
| 标准要求 | | 严寒地区甲类公共建筑各单一立面窗墙面积比 (包括透光幕墙 )均不宜大于0.60 | | | | |
| 结论 | | 适宜 | | | | |

### 外窗表

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 朝向 | 编号 | 尺寸 | 楼层 | 数量 | 单个面积 （㎡） | 合计面积 （㎡） |
| 南向 232.31 | C14526 | 1.45×2.60 | 1~3 | 36 | 3.77 | 135.72 |
| C1626 | 1.60×2.60 | 2~3 | 20 | 4.16 | 83.20 |
| C1726 | 1.70×2.60 | 2~3 | 2 | 4.42 | 8.84 |
| C17526 | 1.75×2.60 | 1 | 1 | 4.55 | 4.55 |
| 北向 248.17 | C14526 | 1.45×2.60 | 1 | 18 | 3.77 | 67.86 |
| C1626 | 1.60×2.60 | 2~3 | 38 | 4.16 | 158.08 |
| C1726 | 1.70×2.60 | 2~3 | 4 | 4.42 | 17.68 |
| C17526 | 1.75×2.60 | 1 | 1 | 4.55 | 4.55 |
| 东向 724.86 |  | 6.85×3.40 | 1 | 1 | 23.30 | 23.30 |
|  | 3.25×3.40 | 1 | 1 | 11.04 | 11.04 |
|  | 9.25×3.40 | 1 | 1 | 31.46 | 31.46 |
|  | 5.15×3.40 | 1 | 1 | 17.51 | 17.51 |
| C1626 | 1.60×2.60 | 1~3 | 19 | 4.16 | 79.04 |
| MQ34 | 6.85×3.40 | 1 | 1 | 23.30 | 23.30 |
| MQ34 | 3.25×3.40 | 1 | 1 | 11.04 | 11.04 |
| MQ34 | 0.61×3.40 | 1 | 4 | 2.06 | 8.23 |
| MQ34 | 1.50×1.30 | 1 | 6 | 1.95 | 11.70 |
| MQ34 | 9.25×3.40 | 1 | 1 | 31.46 | 31.46 |
| MQ34 | 5.15×3.40 | 1 | 1 | 17.51 | 17.51 |
| MQ37 | 5.71×3.70 | 2 | 2 | 21.13 | 42.25 |
| MQ37 | 9.25×3.70 | 2 | 2 | 34.24 | 68.48 |
| MQ37 | 6.85×3.70 | 2 | 2 | 25.36 | 50.72 |
| MQ37 | 3.25×3.70 | 2 | 2 | 12.01 | 24.03 |
| MQ37 | 5.15×3.70 | 2 | 2 | 19.06 | 38.12 |
| MQ39 | 5.71×3.90 | 3 | 2 | 22.27 | 44.53 |
| MQ39 | 9.25×3.90 | 3 | 2 | 36.09 | 72.18 |
| MQ39 | 6.85×3.90 | 3 | 2 | 26.73 | 53.46 |
| MQ39 | 3.25×3.90 | 3 | 2 | 12.66 | 25.33 |
| MQ39 | 5.15×3.90 | 3 | 2 | 20.09 | 40.18 |
| 西向 219.18 | C14526 | 1.45×2.60 | 1 | 14 | 3.77 | 52.78 |
| C1626 | 1.60×2.60 | 2~3 | 28 | 4.16 | 116.48 |
| C1826 | 1.80×2.60 | 1~3 | 4 | 4.68 | 18.72 |
| C2026 | 2.00×2.60 | 2~3 | 6 | 5.20 | 31.20 |

## 可见光透射比

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 朝向 | 立面 | 窗墙比 | 最不利窗编号 | 最不利透射比 | 透射比限值 |
| 南向 | 立面3 | 0.15 | C1626 | 0.80 | 0.60 |
| 北向 | 立面4 | 0.16 | C1726 | 0.80 | 0.60 |
| 东向 | 立面1 | 0.49 | C1626 | 0.80 | 0.40 |
| 西向 | 立面2 | 0.14 | C2026 | 0.80 | 0.60 |
| 标准依据 | | 《公共建筑节能设计标准》(GB50189-2015)第3.2.4条 | | | |
| 标准要求 | | 当窗墙面积比小于0.40时，玻璃的可见光透射比不应当小于0.6;当窗墙面积比大于等于0.40时，玻璃的可见光透射比不应当小于0.4; | | | |
| 结论 | | 满足 | | | |

## 天窗

### 天窗屋顶比

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 房间 | 天窗编号 | 天窗面积（㎡） | 屋顶面积（㎡） | 面积比 |
| 4003 | 7,1,7,6,6,4, | 502.72 | 502.72 | 1.00 |
| 4004 | 7,1,7,6,6,4, | 502.72 | 502.72 | 1.00 |
| 4005 | 5,4,1,5,7, | 467.48 | 467.48 | 1.00 |
| 4006 | 5,4,1,5,7, | 467.48 | 467.48 | 1.00 |
| 4014 | 7,6,6, | 89.17 | 89.17 | 1.00 |
| 4015 | 7,6,6, | 89.17 | 89.17 | 1.00 |
| 4039 | 4,1,4, | 25.26 | 25.26 | 1.00 |
| 4040 | 4,4,1, | 25.26 | 25.26 | 1.00 |
| 4050 | 3,2,1,2,3, | 13.95 | 13.95 | 1.00 |
| 4051 | 3,2,1,2,3, | 13.95 | 13.95 | 1.00 |
| 整栋建筑 | | 2197.15 | 9006.19 | 0.24 |
| 标准依据 | 《公共建筑节能设计标准》(GB50189-2015)第3.2.7条 | | | |
| 标准要求 | 天窗面积不应大于屋顶总面积的20% | | | |
| 结论 | 不满足 | | | |

### 天窗类型

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 序号 | 构造名称 | 构造编号 | 传热系数 | 自遮阳系数 | 备注 |
| 1 | 下限+PA断桥铝合金窗框+双银Low-E中空玻璃+空气层厚12mm | 66 | 0.84 | 0.30 |  |
| 平均 | |  | 0.84 | 0.30 |  |
| 标准依据 | | 《公共建筑节能设计标准》(GB50189-2015)第3.3.1条 | | | |
| 标准要求 | | K≤2.3 | | | |
| 结论 | | 满足 | | | |

## 屋顶构造

### 屋顶构造一

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 材料名称 （由上到下） | 厚度δ | 导热系数λ | 蓄热系数S | 修正系数 | 热阻R | 热惰性指标 |
| (mm) | W/(m.K) | W/(㎡.K) | α | (㎡K)/W | D=R\*S |
| 水泥砂浆 | 30 | 0.930 | 11.370 | 1.00 | 0.032 | 0.367 |
| 保温砂浆 | 30 | 0.290 | 4.209 | 1.00 | 0.103 | 0.435 |
| 粘土陶粒混凝土 | 30 | 0.530 | 7.250 | 1.15 | 0.049 | 0.410 |
| 建筑用真空绝热板 | 100 | 0.008 | 0.340 | 1.20 | 10.417 | 4.250 |
| 钢筋混凝土 | 100 | 1.740 | 17.200 | 1.00 | 0.057 | 0.989 |
| 各层之和∑ | 290 | － | － | － | 10.659 | 6.451 |
| 外表面太阳辐射吸收系数 | 0.72 | | | | | |
| 传热系数K=1/(0.15+∑R) | 0.09 | | | | | |
| 标准依据 | 《公共建筑节能设计标准》(GB50189-2015)第3.3.1条 | | | | | |
| 标准要求 | K≤0.35,S≤0.3或K≤0.28,0.3<S≤0.50 | | | | | |
| 结论 | 满足 | | | | | |

## 外墙构造

### 外墙构造一

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 材料名称 （由外到内） | 厚度δ | 导热系数λ | 蓄热系数S | 修正系数 | 热阻R | 热惰性指标 |
| (mm) | W/(m.K) | W/(㎡.K) | α | (㎡K)/W | D=R\*S |
| 保温砂浆 | 20 | 0.290 | 4.209 | 1.00 | 0.069 | 0.290 |
| 建筑用真空绝热板 | 80 | 0.008 | 0.340 | 1.20 | 8.333 | 3.400 |
| 灰砂砖 | 370 | 0.740 | 12.720 | 1.00 | 0.500 | 6.360 |
| 建筑用真空绝热板 | 50 | 0.008 | 0.340 | 1.20 | 5.208 | 2.125 |
| 保温砂浆 | 20 | 0.290 | 4.209 | 1.00 | 0.069 | 0.290 |
| 各层之和∑ | 540 | － | － | － | 14.180 | 12.466 |
| 外表面太阳辐射吸收系数 | 0.56 | | | | | |
| 传热系数K=1/(0.15+∑R) | 0.07 | | | | | |
| 标准依据 | 《公共建筑节能设计标准》(GB50189-2015)第3.3.1条 | | | | | |
| 标准要求 | K≤0.43,S≤0.30或K≤0.38,0.30<S≤0.50 | | | | | |
| 结论 | 满足 | | | | | |

### 外墙主断面传热系数的修正系数ψ



## 挑空楼板构造

### 底面接触室外空气的架空或外挑楼板构造一

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 材料名称 （由上到下） | 厚度δ | 导热系数λ | 蓄热系数S | 修正系数 | 热阻R | 热惰性指标 |
| (mm) | W/(m.K) | W/(㎡.K) | α | (㎡K)/W | D=R\*S |
| 水泥砂浆楼面面层 | 30 | 0.870 | 10.627 | 1.00 | 0.034 | 0.366 |
| C15细石混凝土垫层 | 50 | 1.280 | 13.410 | 1.00 | 0.039 | 0.524 |
| 建筑用真空绝热板 | 50 | 0.008 | 0.340 | 1.20 | 5.208 | 2.125 |
| 10厚1：3水泥砂浆找平层 | 10 | 1.280 | 13.410 | 1.00 | 0.008 | 0.105 |
| 钢筋混凝土楼板 | 120 | 1.740 | 17.060 | 1.00 | 0.069 | 1.177 |
| 建筑用真空绝热板 | 50 | 0.008 | 0.340 | 1.20 | 5.208 | 2.125 |
| 薄抹灰饰面层 | 6 | 0.930 | 11.306 | 1.00 | 0.006 | 0.073 |
| 各层之和∑ | 316 | － | － | － | 10.573 | 6.495 |
| 传热系数K=1/(0.15+∑R) | 0.09 | | | | | |
| 数据来源 | 来源：新疆公建XJJ034-2006第98页 | | | | | |
| 标准依据 | 《公共建筑节能设计标准》(GB50189-2015)第3.3.1条 | | | | | |
| 标准要求 | K≤0.43,S≤0.30或K≤0.38,0.30<S≤0.50 | | | | | |
| 结论 | 满足 | | | | | |

## 采暖与非采暖隔墙

### 采暖与非采暖隔墙相关构造

#### 非供暖房间与供暖房间之间的隔墙构造一

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 材料名称 | 厚度δ | 导热系数λ | 蓄热系数S | 修正系数 | 热阻R | 热惰性指标 |
| (mm) | W/(m.K) | W/(㎡.K) | α | (㎡K)/W | D=R\*S |
| 室内抹灰 | 20 | 0.870 | 10.627 | 1.00 | 0.023 | 0.244 |
| 建筑用真空绝热板 | 50 | 0.008 | 0.340 | 1.20 | 5.208 | 2.125 |
| 灰砂砖 | 240 | 0.740 | 12.720 | 1.00 | 0.324 | 4.125 |
| 建筑用真空绝热板 | 50 | 0.008 | 0.340 | 1.20 | 5.208 | 2.125 |
| 薄抹灰饰面层 | 10 | 0.930 | 11.306 | 1.00 | 0.011 | 0.122 |
| 各层之和∑ | 370 | － | － | － | 10.775 | 8.741 |
| 传热系数K=1/(0.22+∑R) | 0.09 | | | | | |
| 数据来源 | 来源：新疆公建XJJ034-2006第100页 | | | | | |

#### 控温房间隔墙构造一

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 材料名称 | 厚度δ | 导热系数λ | 蓄热系数S | 修正系数 | 热阻R | 热惰性指标 |
| (mm) | W/(m.K) | W/(㎡.K) | α | (㎡K)/W | D=R\*S |
| 室内抹灰 | 20 | 0.870 | 10.627 | 1.00 | 0.023 | 0.244 |
| 建筑用真空绝热板 | 50 | 0.008 | 0.340 | 1.20 | 5.208 | 2.125 |
| 灰砂砖 | 240 | 0.740 | 12.720 | 1.00 | 0.324 | 4.125 |
| 建筑用真空绝热板 | 50 | 0.008 | 0.340 | 1.20 | 5.208 | 2.125 |
| 薄抹灰饰面层 | 6 | 0.930 | 11.306 | 1.00 | 0.006 | 0.073 |
| 各层之和∑ | 366 | － | － | － | 10.770 | 8.693 |
| 传热系数K=1/(0.22+∑R) | 0.09 | | | | | |
| 数据来源 | 来源：新疆公建XJJ034-2006第37页 | | | | | |

### 采暖与非采暖隔墙平均热工特性

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 构造名称 | 面积(㎡) | 面积所占比例 | 传热系数K W / (㎡K) | 热惰性指标D |
| 非供暖房间与供暖房间之间的隔墙构造一 | 1729.21 | 0.638 | 0.09 | 8.74 |
| 控温房间隔墙构造一 | 979.98 | 0.362 | 0.09 | 8.69 |
| 合计 | 2709.19 | 1.000 | 0.09 | 8.72 |
| 标准依据 | 《公共建筑节能设计标准》(GB50189-2015)第3.3.1条 | | | |
| 标准要求 | K≤1.5 | | | |
| 结论 | 满足 | | | |

## 地下车库与供暖房间之间的楼板

### 控温与非控温楼板构造一

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 材料名称 | 厚度δ | 导热系数λ | 蓄热系数S | 修正系数 | 热阻R | 热惰性指标 |
| (mm) | W/(m.K) | W/(㎡.K) | α | (㎡K)/W | D=R\*S |
| 水泥砂浆楼面面层 | 20 | 0.870 | 10.627 | 1.00 | 0.023 | 0.244 |
| 粉煤灰陶粒砼隔音层 | 60 | 0.570 | 7.522 | 1.15 | 0.092 | 0.792 |
| 建筑用真空绝热板 | 50 | 0.008 | 0.340 | 1.20 | 5.208 | 2.125 |
| 10厚1：3水泥砂浆找平层 | 10 | 1.280 | 13.410 | 1.00 | 0.008 | 0.105 |
| 钢筋混凝土楼板 | 100 | 1.740 | 17.060 | 1.00 | 0.057 | 0.980 |
| 建筑用真空绝热板 | 50 | 0.008 | 0.340 | 1.20 | 5.208 | 2.125 |
| 薄抹灰饰面层 | 6 | 0.930 | 11.306 | 1.00 | 0.006 | 0.073 |
| 各层之和∑ | 296 | － | － | － | 10.603 | 6.444 |
| 传热系数K=1/(0.22+∑R) | 0.09 | | | | | |
| 数据来源 | 来源：新疆公建XJJ034-2006第113页 | | | | | |
| 标准依据 | 《公共建筑节能设计标准》(GB50189-2015)第3.3.1条 | | | | | |
| 标准要求 | K≤0.70 | | | | | |
| 结论 | 满足 | | | | | |

## 外窗热工

### 外窗构造

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 序号 | 构造名称 | 构造编号 | 传热系数 | 太阳得热系数 | 可见光透射比 | 备注 |
| 1 | 下限+PA断桥铝合金窗框+双银Low-E中空玻璃+空气层厚12mm | 65 | 0.84 | 0.26 | 1.000 |  |
| 2 | 下限+PA断桥铝合金窗框+双银Low-E中空玻璃+空气层厚12mm | 18 | 0.84 | 0.26 | 0.800 |  |

### 平均传热系数

1. 立面1(东向)：

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 门窗编号 | 楼层 | 数量 | 单个面积（㎡） | 总面积（㎡） | 构造编号 | 传热系数 |
| 1 |  | 1 | 1 | 23.302 | 23.302 | 65 | 0.843 |
| 2 |  | 1 | 1 | 11.039 | 11.039 | 65 | 0.843 |
| 3 |  | 1 | 1 | 31.462 | 31.462 | 65 | 0.843 |
| 4 |  | 1 | 1 | 17.513 | 17.513 | 65 | 0.843 |
| 5 | C1626 | 1~3 | 19 | 4.160 | 79.040 | 18 | 0.843 |
| 6 | MQ34 | 1 | 1 | 23.302 | 23.302 | 65 | 0.843 |
| 7 | MQ34 | 1 | 1 | 11.039 | 11.039 | 65 | 0.843 |
| 8 | MQ34 | 1 | 4 | 2.057 | 8.228 | 65 | 0.843 |
| 9 | MQ34 | 1 | 6 | 1.950 | 11.700 | 65 | 0.843 |
| 10 | MQ34 | 1 | 1 | 31.462 | 31.462 | 65 | 0.843 |
| 11 | MQ34 | 1 | 1 | 17.513 | 17.513 | 65 | 0.843 |
| 12 | MQ37 | 2 | 2 | 21.125 | 42.251 | 65 | 0.843 |
| 13 | MQ37 | 2 | 2 | 34.238 | 68.476 | 65 | 0.843 |
| 14 | MQ37 | 2 | 2 | 25.358 | 50.717 | 65 | 0.843 |
| 15 | MQ37 | 2 | 2 | 12.014 | 24.027 | 65 | 0.843 |
| 16 | MQ37 | 2 | 2 | 19.058 | 38.116 | 65 | 0.843 |
| 17 | MQ39 | 3 | 2 | 22.267 | 44.535 | 65 | 0.843 |
| 18 | MQ39 | 3 | 2 | 36.089 | 72.177 | 65 | 0.843 |
| 19 | MQ39 | 3 | 2 | 26.729 | 53.458 | 65 | 0.843 |
| 20 | MQ39 | 3 | 2 | 12.663 | 25.326 | 65 | 0.843 |
| 21 | MQ39 | 3 | 2 | 20.088 | 40.176 | 65 | 0.843 |
| 朝向总面积(㎡) | | | 724.859 | 朝向平均传热系数 | | | 0.843 |

2. 立面2(西向)：

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 门窗编号 | 楼层 | 数量 | 单个面积（㎡） | 总面积（㎡） | 构造编号 | 传热系数 |
| 1 | C14526 | 1 | 14 | 3.770 | 52.780 | 18 | 0.843 |
| 2 | C1626 | 2~3 | 28 | 4.160 | 116.480 | 18 | 0.843 |
| 3 | C1826 | 1~3 | 4 | 4.680 | 18.720 | 18 | 0.843 |
| 4 | C2026 | 2~3 | 6 | 5.200 | 31.200 | 18 | 0.843 |
| 朝向总面积(㎡) | | | 219.180 | 朝向平均传热系数 | | | 0.843 |

3. 立面3(南向)：

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 门窗编号 | 楼层 | 数量 | 单个面积（㎡） | 总面积（㎡） | 构造编号 | 传热系数 |
| 1 | C14526 | 1~3 | 36 | 3.770 | 135.720 | 18 | 0.843 |
| 2 | C1626 | 2~3 | 20 | 4.160 | 83.200 | 18 | 0.843 |
| 3 | C1726 | 2~3 | 2 | 4.420 | 8.840 | 18 | 0.843 |
| 4 | C17526 | 1 | 1 | 4.550 | 4.550 | 18 | 0.843 |
| 朝向总面积(㎡) | | | 232.310 | 朝向平均传热系数 | | | 0.843 |

4. 立面4(北向)：

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 门窗编号 | 楼层 | 数量 | 单个面积（㎡） | 总面积（㎡） | 构造编号 | 传热系数 |
| 1 | C14526 | 1 | 18 | 3.770 | 67.860 | 18 | 0.843 |
| 2 | C1626 | 2~3 | 38 | 4.160 | 158.080 | 18 | 0.843 |
| 3 | C1726 | 2~3 | 4 | 4.420 | 17.680 | 18 | 0.843 |
| 4 | C17526 | 1 | 1 | 4.550 | 4.550 | 18 | 0.843 |
| 朝向总面积(㎡) | | | 248.170 | 朝向平均传热系数 | | | 0.843 |

### 总体热工性能

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 朝向 | 立面 | 面积 | 传热系数 | 综合太阳得热系数 | 窗墙比 | 标准要求 | 结论 |
| 南向 | 立面3 | 232.31 | 0.84 | 0.26 | 0.15 | K≤2.90 | 满足 |
| 北向 | 立面4 | 248.17 | 0.84 | 0.26 | 0.16 | K≤2.90 | 满足 |
| 东向 | 立面1 | 724.86 | 0.84 | 0.26 | 0.49 | K≤2.00 | 满足 |
| 西向 | 立面2 | 219.18 | 0.84 | 0.26 | 0.14 | K≤2.90 | 满足 |
| 综合平均 |  | 1424.52 | 0.84 | 0.26 | 0.23 |  |  |
| 标准依据 | 《公共建筑节能设计标准》(GB50189-2015)第3.3.1条 | | | | | | |
| 标准要求 | 外窗传热系数应满足表3.3.1-2的要求 | | | | | | |
| 结论 | 满足 | | | | | | |

注：本表所统计的外窗包含凸窗。

## 周边地面构造

### 周边地面构造一

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 材料名称 | 厚度δ | 导热系数λ | 蓄热系数S | 修正系数 | 热阻R | 热惰性指标 |
| (mm) | W/(m.K) | W/(㎡.K) | α | (㎡K)/W | D=R\*S |
| 胶粉聚苯颗粒保温浆料 | 20 | 0.060 | 2.490 | 1.20 | 0.278 | 0.830 |
| 碎石、卵石混凝土 | 40 | 1.510 | 15.243 | 1.00 | 0.026 | 0.404 |
| 挤塑聚苯乙烯泡沫塑料（带表皮） | 70 | 0.030 | 0.340 | 1.00 | 2.333 | 0.793 |
| 碎石、卵石混凝土 | 50 | 1.510 | 15.243 | 1.00 | 0.033 | 0.505 |
| 素土夯实 | 200 | 1.160 | 13.054 | 1.00 | 0.172 | 2.251 |
| 各层之和∑ | 380 | － | － | － | 2.843 | 4.783 |
| 保温材料层R | 2.61 | | | | | |
| 标准依据 | 《公共建筑节能设计标准》(GB50189-2015)第3.3.1条 | | | | | |
| 标准要求 | R≥1.1 | | | | | |
| 结论 | 满足 | | | | | |

备注：用灰色显示的材料是非保温材料。

## 采暖地下室外墙构造

本工程无此项内容

## 变形缝

本工程无此项内容

## 有效通风换气面积

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 楼层 | 房间编号 | 房间面积（㎡） | | 立面面积（㎡） | 门窗编号 | 门窗面积（㎡） | 有效通风面积比 | 门窗类型 | 有效通风面积/外窗面积 | 有效通风面积/立面面积 | 结论 |
| 1 | 2014 | 84.36 | | 95.64 | C1626 | 4.16 | 0.85 | 外窗 | 0.85 | 0.07 | 满足 |
| C14526 | 3.77 | 0.85 | 外窗 |
| 2043 | 17.41 | | 46.71 | C1626 | 4.16 | 0.85 | 外窗 | 0.85 | 0.08 | 满足 |
| 2 | 3010 | 84.36 | | 81.98 | C14526 | 3.77 | 0.85 | 外窗 | 0.85 | 0.08 | 满足 |
| C1626 | 4.16 | 0.85 | 外窗 |
| 3062 | 17.41 | | 40.04 | C1626 | 4.16 | 0.85 | 外窗 | 0.85 | 0.09 | 满足 |
| 3064 | 15.48 | | 40.95 | C1726 | 4.42 | 0.85 | 外窗 | 0.85 | 0.09 | 满足 |
| 3 | 4002 | 536.21 | | 128.24 | C1626 | 4.16 | 0.85 | 外窗 | 0.85 | 0.06 | 满足 |
| C1626 | 4.16 | 0.85 | 外窗 |
| 4013 | 84.36 | | 91.74 | C14526 | 3.77 | 0.85 | 外窗 | 0.85 | 0.07 | 满足 |
| C1626 | 4.16 | 0.85 | 外窗 |
| 4034 | 26.64 | | 37.69 | C1626 | 4.16 | 0.85 | 外窗 | 0.85 | 0.09 | 满足 |
| 4047 | 17.41 | | 44.80 | C1626 | 4.16 | 0.85 | 外窗 | 0.85 | 0.08 | 满足 |
| 4049 | 15.48 | | 45.82 | C1726 | 4.42 | 0.85 | 外窗 | 0.85 | 0.08 | 满足 |
| 通风换气装置 | | | 有 | | | | | | | | | |
| 标准依据 | | | 《公共建筑节能设计标准》(GB50189-2015)第3.2.8条 | | | | | | | | | |
| 标准要求 | | | 甲类建筑外窗有效通风换气面积不宜小于所在房间立面面积的10% | | | | | | | | | |
| 结论 | | | 满足 | | | | | | | | | |

注：达标时只列出一项，不达标时列出全部不达标项

## 非中空窗面积比

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 朝向 | 非中空玻璃面积(㎡) | 透光面积(㎡) | 非中空面积比 | 限值 | 结论 |
| 南向 | 0.00 | 232.31 | 0.00 | 0.15 | 满足 |
| 北向 | 0.00 | 248.17 | 0.00 | 0.15 | 满足 |
| 东向 | 0.00 | 724.86 | 0.00 | 0.15 | 满足 |
| 西向 | 0.00 | 219.18 | 0.00 | 0.15 | 满足 |
| 《标准》依据 | | 《公共建筑节能设计标准》(GB50189-2015)第3.3.7条 | | | |
| 标准要求 | | 非中空玻璃的面积不应超过同一立面透光面积的15% | | | |
| 结论 | | 满足 | | | |

## 外窗气密性

|  |  |  |
| --- | --- | --- |
| 层数 | 1～9层 | 10层以上 |
| 最不利气密性等级 | 7级 C14526 | － |
| 外窗气密性措施 |  |  |
| 标准依据 | 《公共建筑节能设计标准》(GB50189-2015)第3.3.5条，分级与检测方法《建筑外门窗气密、水密、抗风压性能分级及检测方法》（GB/T 7106-2008） | 《公共建筑节能设计标准》(GB50189-2015)第3.3.5条，分级与检测方法《建筑外门窗气密、水密、抗风压性能分级及检测方法》（GB/T 7106-2008） |
| 标准要求 | 10层以下外窗气密性不应低于《建筑外门窗气密、水密、抗风压性能分级及检测方法》（GB/T 7106-2008）的6级 | 10层及以上外窗气密性不应低于《建筑外门窗气密、水密、抗风压性能分级及检测方法》（GB/T 7106-2008）的7级 |
| 结论 | 满足 | － |

## 外门气密性

|  |  |
| --- | --- |
| 最不利气密性等级 | 7级 M1521 |
| 外门气密性措施 |  |
| 标准依据 | 《公共建筑节能设计标准》(GB50189-2015)第3.3.5条，分级与检测方法《建筑外门窗气密、水密、抗风压性能分级及检测方法》（GB/T 7106-2008） |
| 标准要求 | 外门气密性不应低于《建筑外门窗气密、水密、抗风压性能分级及检测方法》（GB/T 7106-2008）的4级 |
| 结论 | 满足 |

## 幕墙气密性

|  |  |
| --- | --- |
| 最不利气密性等级 | 3级 |
| 幕墙气密性措施 |  |
| 通风换气装置 | 有 |
| 标准依据 | 《公共建筑节能设计标准》(GB50189-2015)第3.3.6条，《建筑幕墙》（GB/T 21086-2007） |
| 标准要求 | 幕墙气密性不应低于《建筑幕墙》（GB/T 21086-2007）的3级，即《建筑幕墙物理性能分级》(GB/T15225-94)的3级 |
| 结论 | 满足 |

## 规定性指标检查结论

|  |  |  |  |
| --- | --- | --- | --- |
| 序号 | 检查项 | 结论 | 可否性能权衡 |
| 1 | 体形系数 | 满足 |  |
| 2 | 窗墙比 | 适宜 |  |
| 3 | 可见光透射比 | 满足 |  |
| 4 | 天窗屋顶比 | 不满足 | 可 |
| 5 | 天窗类型 | 满足 |  |
| 6 | 屋顶构造 | 满足 |  |
| 7 | 外墙构造 | 满足 |  |
| 8 | 挑空楼板构造 | 满足 |  |
| 9 | 采暖与非采暖隔墙 | 满足 |  |
| 10 | 地下车库与供暖房间之间的楼板 | 满足 |  |
| 11 | 外窗热工 | 满足 |  |
| 12 | 周边地面构造 | 满足 |  |
| 13 | 有效通风换气面积 | 满足 |  |
| 14 | 非中空窗面积比 | 满足 |  |
| 15 | 外窗气密性 | 满足 |  |
| 16 | 外门气密性 | 满足 |  |
| 17 | 幕墙气密性 | 满足 |  |
| 结论 | | 不满足 | 可 |

□说明：本工程规定性指标设计**不满足**要求，需依据《公共建筑节能设计标准》》(GB50189-2015)的要求进行节能设计的权衡判断。

# 热工性能权衡判断

## 说明

本建筑按公共建筑节能设计标准GB50189-2015之规定进行强制性条文和必须满足条款的规定性指标检查，结果未能达标，按标准规定继续进行热工性能权衡判断。

## 屋顶构造

### 屋顶构造一

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 材料名称 （由上到下） | 厚度δ | 导热系数λ | 蓄热系数S | 修正系数 | 热阻R | 热惰性指标 |
| (mm) | W/(m.K) | W/(㎡.K) | α | (㎡K)/W | D=R\*S |
| 水泥砂浆 | 30 | 0.930 | 11.370 | 1.00 | 0.032 | 0.367 |
| 保温砂浆 | 30 | 0.290 | 4.209 | 1.00 | 0.103 | 0.435 |
| 粘土陶粒混凝土 | 30 | 0.530 | 7.250 | 1.15 | 0.049 | 0.410 |
| 建筑用真空绝热板 | 100 | 0.008 | 0.340 | 1.20 | 10.417 | 4.250 |
| 钢筋混凝土 | 100 | 1.740 | 17.200 | 1.00 | 0.057 | 0.989 |
| 各层之和∑ | 290 | － | － | － | 10.659 | 6.451 |
| 外表面太阳辐射吸收系数 | 0.72 | | | | | |
| 传热系数K=1/(0.15+∑R) | 0.09 | | | | | |
| 标准依据 | 《公共建筑节能设计标准》(GB50189-2015)第3.4.1条 | | | | | |
| 标准要求 | K≤0.45 | | | | | |
| 结论 | 满足 | | | | | |

## 外墙构造

### 外墙构造一

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 材料名称 （由外到内） | 厚度δ | 导热系数λ | 蓄热系数S | 修正系数 | 热阻R | 热惰性指标 |
| (mm) | W/(m.K) | W/(㎡.K) | α | (㎡K)/W | D=R\*S |
| 保温砂浆 | 20 | 0.290 | 4.209 | 1.00 | 0.069 | 0.290 |
| 建筑用真空绝热板 | 80 | 0.008 | 0.340 | 1.20 | 8.333 | 3.400 |
| 灰砂砖 | 370 | 0.740 | 12.720 | 1.00 | 0.500 | 6.360 |
| 建筑用真空绝热板 | 50 | 0.008 | 0.340 | 1.20 | 5.208 | 2.125 |
| 保温砂浆 | 20 | 0.290 | 4.209 | 1.00 | 0.069 | 0.290 |
| 各层之和∑ | 540 | － | － | － | 14.180 | 12.466 |
| 外表面太阳辐射吸收系数 | 0.56 | | | | | |
| 传热系数K=1/(0.15+∑R) | 0.07 | | | | | |
| 标准依据 | 《公共建筑节能设计标准》(GB50189-2015)第3.4.1条 | | | | | |
| 标准要求 | K≤0.50 | | | | | |
| 结论 | 满足 | | | | | |

### 外墙主断面传热系数的修正系数ψ



## 外窗热工

### 外窗构造

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 序号 | 构造名称 | 构造编号 | 传热系数 | 太阳得热系数 | 可见光透射比 | 备注 |
| 1 | 下限+PA断桥铝合金窗框+双银Low-E中空玻璃+空气层厚12mm | 65 | 0.84 | 0.26 | 1.000 |  |
| 2 | 下限+PA断桥铝合金窗框+双银Low-E中空玻璃+空气层厚12mm | 18 | 0.84 | 0.26 | 0.800 |  |

### 平均传热系数

1. 立面1(东向)：

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 门窗编号 | 楼层 | 数量 | 单个面积（㎡） | 总面积（㎡） | 构造编号 | 传热系数 |
| 1 |  | 1 | 1 | 23.302 | 23.302 | 65 | 0.843 |
| 2 |  | 1 | 1 | 11.039 | 11.039 | 65 | 0.843 |
| 3 |  | 1 | 1 | 31.462 | 31.462 | 65 | 0.843 |
| 4 |  | 1 | 1 | 17.513 | 17.513 | 65 | 0.843 |
| 5 | C1626 | 1~3 | 19 | 4.160 | 79.040 | 18 | 0.843 |
| 6 | MQ34 | 1 | 1 | 23.302 | 23.302 | 65 | 0.843 |
| 7 | MQ34 | 1 | 1 | 11.039 | 11.039 | 65 | 0.843 |
| 8 | MQ34 | 1 | 4 | 2.057 | 8.228 | 65 | 0.843 |
| 9 | MQ34 | 1 | 6 | 1.950 | 11.700 | 65 | 0.843 |
| 10 | MQ34 | 1 | 1 | 31.462 | 31.462 | 65 | 0.843 |
| 11 | MQ34 | 1 | 1 | 17.513 | 17.513 | 65 | 0.843 |
| 12 | MQ37 | 2 | 2 | 21.125 | 42.251 | 65 | 0.843 |
| 13 | MQ37 | 2 | 2 | 34.238 | 68.476 | 65 | 0.843 |
| 14 | MQ37 | 2 | 2 | 25.358 | 50.717 | 65 | 0.843 |
| 15 | MQ37 | 2 | 2 | 12.014 | 24.027 | 65 | 0.843 |
| 16 | MQ37 | 2 | 2 | 19.058 | 38.116 | 65 | 0.843 |
| 17 | MQ39 | 3 | 2 | 22.267 | 44.535 | 65 | 0.843 |
| 18 | MQ39 | 3 | 2 | 36.089 | 72.177 | 65 | 0.843 |
| 19 | MQ39 | 3 | 2 | 26.729 | 53.458 | 65 | 0.843 |
| 20 | MQ39 | 3 | 2 | 12.663 | 25.326 | 65 | 0.843 |
| 21 | MQ39 | 3 | 2 | 20.088 | 40.176 | 65 | 0.843 |
| 朝向总面积(㎡) | | | 724.859 | 朝向平均传热系数 | | | 0.843 |

2. 立面2(西向)：

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 门窗编号 | 楼层 | 数量 | 单个面积（㎡） | 总面积（㎡） | 构造编号 | 传热系数 |
| 1 | C14526 | 1 | 14 | 3.770 | 52.780 | 18 | 0.843 |
| 2 | C1626 | 2~3 | 28 | 4.160 | 116.480 | 18 | 0.843 |
| 3 | C1826 | 1~3 | 4 | 4.680 | 18.720 | 18 | 0.843 |
| 4 | C2026 | 2~3 | 6 | 5.200 | 31.200 | 18 | 0.843 |
| 朝向总面积(㎡) | | | 219.180 | 朝向平均传热系数 | | | 0.843 |

3. 立面3(南向)：

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 门窗编号 | 楼层 | 数量 | 单个面积（㎡） | 总面积（㎡） | 构造编号 | 传热系数 |
| 1 | C14526 | 1~3 | 36 | 3.770 | 135.720 | 18 | 0.843 |
| 2 | C1626 | 2~3 | 20 | 4.160 | 83.200 | 18 | 0.843 |
| 3 | C1726 | 2~3 | 2 | 4.420 | 8.840 | 18 | 0.843 |
| 4 | C17526 | 1 | 1 | 4.550 | 4.550 | 18 | 0.843 |
| 朝向总面积(㎡) | | | 232.310 | 朝向平均传热系数 | | | 0.843 |

4. 立面4(北向)：

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 门窗编号 | 楼层 | 数量 | 单个面积（㎡） | 总面积（㎡） | 构造编号 | 传热系数 |
| 1 | C14526 | 1 | 18 | 3.770 | 67.860 | 18 | 0.843 |
| 2 | C1626 | 2~3 | 38 | 4.160 | 158.080 | 18 | 0.843 |
| 3 | C1726 | 2~3 | 4 | 4.420 | 17.680 | 18 | 0.843 |
| 4 | C17526 | 1 | 1 | 4.550 | 4.550 | 18 | 0.843 |
| 朝向总面积(㎡) | | | 248.170 | 朝向平均传热系数 | | | 0.843 |

### 总体热工性能

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 朝向 | 立面 | 面积 | 传热系数 | 综合太阳得热系数 | 窗墙比 | 标准要求 | 结论 |
| 南向 | 立面3 | 232.31 | 0.84 | 0.26 | 0.15 | K(不要求) | 满足 |
| 北向 | 立面4 | 248.17 | 0.84 | 0.26 | 0.16 | K(不要求) | 满足 |
| 东向 | 立面1 | 724.86 | 0.84 | 0.26 | 0.49 | K≤2.60 | 满足 |
| 西向 | 立面2 | 219.18 | 0.84 | 0.26 | 0.14 | K(不要求) | 满足 |
| 综合平均 |  | 1424.52 | 0.84 | 0.26 | 0.23 |  |  |
| 标准依据 | 《公共建筑节能设计标准》(GB50189-2015)第3.4.1条 | | | | | | |
| 标准要求 | 单一立面窗墙比大于或等于0.40时，外窗传热系数满足表3.4.1-3的要求 | | | | | | |
| 结论 | 满足 | | | | | | |

注：本表所统计的外窗包含凸窗。

## 综合权衡

### 计算条件

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | 设计建筑 | | 参照建筑 | |
| 体形系数S | | 0.14 | | 0.14 | |
| 屋顶传热系数K [W/(m2·K)] | | 0.09 | | 0.35 | |
| 外墙（包括非透明幕墙）传热系数K [W/(m2·K)] | | 0.07 | | 0.43 | |
| 屋顶透明部分传热系数  K [W/(m2·K)] | | 0.84 | | 2.30 | |
| 底面接触室外的架空或外挑楼板传热系数K [W/(m2·K)] | | 0.09 | | 0.43 | |
| 地下车库与供暖房间之间的楼板  K [W/(m2·K)] | | 0.09 | | 0.67 | |
| 非供暖楼梯间与供暖房间之间的隔墙 K [W/(m2·K)] | | 0.09 | | 1.20 | |
| 周边地面热阻R[(m2·K)/W] | | 2.84 | | 1.10 | |
| 地下墙热阻R[(m2·K)/W] | | 4.83 | | 4.83 | |
| 变形缝热阻R[(m2·K)/W] | | － | | － | |
| 外窗（包括透明幕墙） | 朝向 | 窗墙比 | 传热  系数 | 窗墙比 | 传热  系数 |
| 南向 | 0.15 | 0.84 | 0.15 | 2.90 |
| 北向 | 0.16 | 0.84 | 0.16 | 2.90 |
| 东向 | 0.49 | 0.84 | 0.49 | 2.00 |
| 西向 | 0.14 | 0.84 | 0.14 | 2.90 |
| 室内参数和气象条件设置 | | 按《公共建筑节能设计标准》附录B设置 | | | |

备注：1. — 代表本工程无对应项; 2. ——代表参照建筑不要求，取值同设计建筑。

### 房间类型

#### 房间表

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 房间类型 | 空调温度 ℃ | 供暖温度 ℃ | 新风量 | 人员密度 | 照明功率 密度 | 电器设备 功率 |
| 其他-休憩区 | 25 | 16 | 0.5(m3/h.人) | 3.3(㎡/人) | 8(W/㎡) | 0(W/㎡) |
| 其他-展览厅 | 25 | 16 | 0.5(次/h) | 1(㎡/人) | 20(W/㎡) | 0(W/㎡) |
| 其他-走廊 | 25 | 10 | 0.5(次/h) | 3.3(㎡/人) | 20(W/㎡) | 0(W/㎡) |
| 其他-阅览室 | 26 | 18 | 0.5(次/h) | 1(㎡/人) | 15(W/㎡) | 0(W/㎡) |
| 办公-会议室 | 26 | 15 | 0.5(次/h) | 2.5(㎡/人) | 9(W/㎡) | 5(W/㎡) |
| 办公-开水间 | 28 | 16 | 0(m3/h.人) | 10(㎡/人) | 6(W/㎡) | 12(W/㎡) |
| 办公-文印间 | 27 | 18 | 0.5(次/h) | 15(㎡/人) | 9(W/㎡) | 12(W/㎡) |
| 办公-普通办公室 | 26 | 18 | 0.5(次/h) | 8(㎡/人) | 9(W/㎡) | 5(W/㎡) |
| 办公-设计室 | 26 | 18 | 0.5(次/h) | 8(㎡/人) | 10(W/㎡) | 5(W/㎡) |
| 学校-教室 | 26 | 20 | 30(m3/h.人) | 6(㎡/人) | 9(W/㎡) | 5(W/㎡) |
| 宾馆-电梯间 | － | － | 0(m3/h.人) | 20(㎡/人) | 0(W/㎡) | 0(W/㎡) |
| 教育-办公室 | 26 | 18 | 0.5(次/h) | 6(㎡/人) | 9(W/㎡) | 5(W/㎡) |
| 教育-卫生间 | 28 | 15 | 0.5(次/h) | 0(㎡/人) | 6(W/㎡) | 5(W/㎡) |
| 教育-多媒体教室 | 26 | 18 | 0.5(次/h) | 4(㎡/人) | 9(W/㎡) | 5(W/㎡) |
| 教育-实验教室 | 26 | 18 | 0.5(次/h) | 4(㎡/人) | 9(W/㎡) | 5(W/㎡) |
| 教育-报告厅 | 26 | 18 | 0.5(次/h) | 2.5(㎡/人) | 10(W/㎡) | 5(W/㎡) |
| 教育-普通教室 | 26 | 18 | 0.5(次/h) | 1.39(㎡/人) | 9(W/㎡) | 5(W/㎡) |
| 教育-美术教室 | 26 | 16 | 0.5(次/h) | 4(㎡/人) | 10(W/㎡) | 0(W/㎡) |
| 教育-阅览室 | 26 | 16 | 0.5(次/h) | 1.9(㎡/人) | 9(W/㎡) | 5(W/㎡) |
| 空房间 | － | － | 0.5(次/h) | 50(㎡/人) | 0(W/㎡) | 0(W/㎡) |

#### 作息时间表

详见附录

### 综合权衡

|  |  |  |
| --- | --- | --- |
|  | 设计建筑 | 参照建筑 |
| 全年供暖和空调总耗电量(kWh/㎡) | 25.15 | 33.60 |
| 供冷耗电量(kWh/㎡) | 8.41 | 6.16 |
| 供热耗电量(kWh/㎡) | 16.73 | 27.44 |
| 耗冷量(kWh/㎡) | 21.04 | 15.41 |
| 耗热量(kWh/㎡) | 29.42 | 48.24 |
| 标准依据 | 《公共建筑节能设计标准》(GB50189-2015)第3.4.2条 | |
| 标准要求 | 设计建筑的能耗不大于参照建筑的能耗 | |
| 结论 | 满足 | |

## 结论

|  |  |  |
| --- | --- | --- |
| 序号 | 检查项 | 结论 |
| 1 | 体形系数 | 满足 |
| 2 | 可见光透射比 | 满足 |
| 3 | 屋顶构造 | 满足 |
| 4 | 外墙构造 | 满足 |
| 5 | 外窗热工 | 满足 |
| 6 | 有效通风换气面积 | 满足 |
| 7 | 非中空窗面积比 | 满足 |
| 8 | 外窗气密性 | 满足 |
| 9 | 外门气密性 | 满足 |
| 10 | 幕墙气密性 | 满足 |
| 11 | 综合权衡 | 满足 |
| 结论 | | 满足 |

## 附录

### 工作日/节假日室内空调温度时间表(℃)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 房间类型 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 其他-休憩区 | 37 | 37 | 37 | 37 | 37 | 37 | 28 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 37 | 37 | 37 | 37 | 37 | 37 |
| 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |
| 其他-展览厅 | 37 | 37 | 37 | 37 | 37 | 37 | 29 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 37 | 37 | 37 | 37 | 37 | 37 |
| 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |
| 其他-走廊 | 37 | 37 | 37 | 37 | 37 | 37 | 28 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 37 | 37 | 37 | 37 | 37 | 37 |
| 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |
| 其他-阅览室 | 37 | 37 | 37 | 37 | 37 | 37 | 29 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 37 | 37 | 37 | 37 | 37 | 37 |
| 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |
| 办公-会议室 | 37 | 37 | 37 | 37 | 37 | 37 | 29 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 37 | 37 | 37 | 37 | 37 | 37 |
| 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |
| 办公-开水间 | 37 | 37 | 37 | 37 | 37 | 37 | 29 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 37 | 37 | 37 | 37 | 37 | 37 |
| 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |
| 办公-文印间 | 37 | 37 | 37 | 37 | 37 | 37 | 29 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 37 | 37 | 37 | 37 | 37 | 37 |
| 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |
| 办公-普通办公室 | 37 | 37 | 37 | 37 | 37 | 37 | 29 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 37 | 37 | 37 | 37 | 37 | 37 |
| 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |
| 办公-设计室 | 37 | 37 | 37 | 37 | 37 | 37 | 29 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 37 | 37 | 37 | 37 | 37 | 37 |
| 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |
| 学校-教室 | 37 | 37 | 37 | 37 | 37 | 37 | 28 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 37 | 37 | 37 | 37 | 37 | 37 |
| 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |
| 宾馆-电梯间 | 37 | 37 | 37 | 37 | 29 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 |
| 37 | 37 | 37 | 37 | 29 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 |
| 教育-办公室 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 29 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 37 | 37 | 37 | 37 | 37 | 37 |
| 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |
| 教育-卫生间 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 29 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 37 | 37 | 37 | 37 | 37 | 37 |
| 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |
| 教育-多媒体教室 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 29 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 37 | 37 | 37 | 37 | 37 | 37 |
| 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |
| 教育-实验教室 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 29 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 37 | 37 | 37 | 37 | 37 | 37 |
| 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |
| 教育-报告厅 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 29 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 37 | 37 | 37 | 37 | 37 | 37 |
| 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |
| 教育-普通教室 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 29 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 37 | 37 | 37 | 37 | 37 | 37 |
| 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |
| 教育-美术教室 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 29 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 37 | 37 | 37 | 37 | 37 | 37 |
| 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |
| 教育-阅览室 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 29 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 37 | 37 | 37 | 37 | 37 | 37 |
| 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |
| 空房间 | 37 | 37 | 37 | 37 | 37 | 37 | 28 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 37 | 37 | 37 | 37 | 37 | 37 |
| 37 | 37 | 37 | 37 | 37 | 37 | 28 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 37 | 37 | 37 | 37 | 37 | 37 |

注：上行：工作日；下行：节假日

### 工作日/节假日室内供暖温度时间表(℃)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 房间类型 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 其他-休憩区 | 12 | 12 | 12 | 12 | 12 | 12 | 18 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 12 | 12 | 12 | 12 | 12 | 12 |
| 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| 其他-展览厅 | 10 | 10 | 10 | 10 | 10 | 12 | 16 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 16 | 10 | 10 | 10 | 10 | 10 |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 其他-走廊 | 12 | 12 | 12 | 12 | 12 | 12 | 14 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 12 | 12 | 12 | 12 | 12 | 12 |
| 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| 其他-阅览室 | 10 | 10 | 10 | 10 | 10 | 12 | 16 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 18 | 10 | 10 | 10 | 10 | 10 |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 办公-会议室 | 10 | 10 | 10 | 10 | 10 | 12 | 16 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 10 | 10 | 10 | 10 | 10 |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 办公-开水间 | 10 | 10 | 10 | 10 | 10 | 12 | 16 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 10 | 10 | 10 | 10 | 10 |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 办公-文印间 | 10 | 10 | 10 | 10 | 10 | 12 | 16 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 10 | 10 | 10 | 10 | 10 |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 办公-普通办公室 | 10 | 10 | 10 | 10 | 10 | 12 | 16 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 18 | 10 | 10 | 10 | 10 | 10 |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 办公-设计室 | 10 | 10 | 10 | 10 | 10 | 12 | 16 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 10 | 10 | 10 | 10 | 10 |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 学校-教室 | 5 | 5 | 5 | 5 | 5 | 12 | 18 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 18 | 12 | 5 | 5 | 5 | 5 |
| 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 宾馆-电梯间 | 16 | 16 | 16 | 16 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| 16 | 16 | 16 | 16 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| 教育-办公室 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 12 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 10 | 10 | 10 | 10 | 10 | 10 |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 教育-卫生间 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 12 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 10 | 10 | 10 | 10 | 10 | 10 |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 教育-多媒体教室 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 12 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 10 | 10 | 10 | 10 | 10 | 10 |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 教育-实验教室 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 12 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 10 | 10 | 10 | 10 | 10 | 10 |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 教育-报告厅 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 12 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 10 | 10 | 10 | 10 | 10 | 10 |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 教育-普通教室 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 12 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 10 | 10 | 10 | 10 | 10 | 10 |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 教育-美术教室 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 12 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 10 | 10 | 10 | 10 | 10 | 10 |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 教育-阅览室 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 12 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 10 | 10 | 10 | 10 | 10 | 10 |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 空房间 | 12 | 12 | 12 | 12 | 12 | 12 | 18 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 12 | 12 | 12 | 12 | 12 | 12 |
| 12 | 12 | 12 | 12 | 12 | 12 | 18 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 12 | 12 | 12 | 12 | 12 | 12 |

注：上行：工作日；下行：节假日

### 工作日/节假日人员逐时在室率(%)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 房间类型 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 其他-休憩区 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 80 | 80 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 其他-展览厅 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 100 | 100 | 100 | 30 | 100 | 100 | 100 | 100 | 50 | 20 | 10 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 其他-走廊 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 80 | 80 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 其他-阅览室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 100 | 100 | 100 | 30 | 100 | 100 | 100 | 100 | 50 | 20 | 10 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 办公-会议室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 100 | 100 | 100 | 30 | 100 | 100 | 100 | 100 | 50 | 20 | 10 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 办公-开水间 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 100 | 100 | 100 | 30 | 100 | 100 | 100 | 100 | 50 | 20 | 10 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 办公-文印间 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 100 | 100 | 100 | 30 | 100 | 100 | 100 | 100 | 50 | 20 | 10 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 办公-普通办公室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 100 | 100 | 100 | 30 | 100 | 100 | 100 | 100 | 50 | 20 | 10 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 办公-设计室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 100 | 100 | 100 | 30 | 100 | 100 | 100 | 100 | 50 | 20 | 10 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 学校-教室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 80 | 80 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 宾馆-电梯间 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 70 | 70 | 70 | 70 | 70 | 70 |
| 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 70 | 70 | 70 | 70 | 70 | 70 |
| 教育-办公室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 80 | 80 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 教育-卫生间 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 80 | 80 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 教育-多媒体教室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 80 | 80 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 教育-实验教室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 80 | 80 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 教育-报告厅 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 80 | 80 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 教育-普通教室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 80 | 80 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 教育-美术教室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 80 | 80 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 教育-阅览室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 80 | 80 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 空房间 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 50 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 70 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 50 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 70 | 50 | 0 | 0 | 0 |

注：上行：工作日；下行：节假日

### 工作日/节假日照明开关时间表(%)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 房间类型 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 其他-休憩区 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 80 | 80 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 其他-展览厅 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 36 | 62 | 56 | 54 | 43 | 53 | 55 | 58 | 67 | 40 | 18 | 10 | 10 | 10 | 10 | 10 | 10 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 其他-走廊 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 80 | 80 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 其他-阅览室 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 36 | 62 | 56 | 54 | 43 | 53 | 55 | 58 | 67 | 40 | 18 | 10 | 10 | 10 | 10 | 10 | 10 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 办公-会议室 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 36 | 62 | 56 | 54 | 43 | 53 | 55 | 58 | 67 | 40 | 18 | 10 | 10 | 10 | 10 | 10 | 10 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 办公-开水间 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 36 | 62 | 56 | 54 | 43 | 53 | 55 | 58 | 67 | 40 | 18 | 10 | 10 | 10 | 10 | 10 | 10 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 办公-文印间 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 36 | 62 | 56 | 54 | 43 | 53 | 55 | 58 | 67 | 40 | 18 | 10 | 10 | 10 | 10 | 10 | 10 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 办公-普通办公室 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 36 | 62 | 56 | 54 | 43 | 53 | 55 | 58 | 67 | 40 | 18 | 10 | 10 | 10 | 10 | 10 | 10 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 办公-设计室 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 36 | 62 | 56 | 54 | 43 | 53 | 55 | 58 | 67 | 40 | 18 | 10 | 10 | 10 | 10 | 10 | 10 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 学校-教室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 80 | 80 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 宾馆-电梯间 | 10 | 10 | 10 | 10 | 10 | 10 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 50 | 50 | 60 | 90 | 90 | 90 | 90 | 80 | 10 | 10 |
| 10 | 10 | 10 | 10 | 10 | 10 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 50 | 50 | 60 | 90 | 90 | 90 | 90 | 80 | 10 | 10 |
| 教育-办公室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 80 | 80 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 教育-卫生间 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 80 | 80 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 教育-多媒体教室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 80 | 80 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 教育-实验教室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 80 | 80 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 教育-报告厅 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 80 | 80 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 教育-普通教室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 80 | 80 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 教育-美术教室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 80 | 80 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 教育-阅览室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 80 | 80 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 空房间 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 50 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 80 | 90 | 100 | 100 | 100 | 10 | 10 | 10 |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 50 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 80 | 90 | 100 | 100 | 100 | 10 | 10 | 10 |

注：上行：工作日；下行：节假日

### 工作日/节假日设备逐时使用率(%)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 房间类型 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 其他-休憩区 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 50 | 50 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 其他-展览厅 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 50 | 20 | 10 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 其他-走廊 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 50 | 50 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 其他-阅览室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 50 | 20 | 10 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 办公-会议室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 50 | 20 | 10 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 办公-开水间 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 50 | 20 | 10 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 办公-文印间 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 50 | 20 | 10 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 办公-普通办公室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 50 | 20 | 10 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 办公-设计室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 50 | 20 | 10 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 学校-教室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 50 | 50 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 宾馆-电梯间 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 80 | 80 | 80 | 80 | 80 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 80 | 80 | 80 | 80 | 80 | 0 | 0 |
| 教育-办公室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 50 | 50 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 教育-卫生间 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 50 | 50 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 教育-多媒体教室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 50 | 50 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 教育-实验教室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 50 | 50 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 教育-报告厅 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 50 | 50 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 教育-普通教室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 50 | 50 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 教育-美术教室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 50 | 50 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 教育-阅览室 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 95 | 95 | 95 | 50 | 50 | 95 | 95 | 95 | 95 | 30 | 30 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 空房间 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 50 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 70 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 50 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 70 | 50 | 0 | 0 | 0 |

注：上行：工作日；下行：节假日

### 工作日/节假日空调系统运行时间表(1:开,0:关)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 系统编号 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| Sys1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |

注：上行：工作日；下行：节假日