

创新性描述比对分析报告

创新性描述：

一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口所述装置还包括覆盖所述取光窗口、将通过所述取光窗口的环境光从入射光线变为垂直光线的透镜片

对比分析结论：

创新性结论：

有

 新颖性结论：

无新颖性

 创造性结论：

无(弱)

分析结果：

该创新性描述共包含 2 个技术特征，其中技术特征 1、2（共 2 个）被对比专利揭示，技术特征 0（共 0 个）未被对比专利揭示。

该创新性描述 100.00% %的技术特征被对比专利揭示，且揭示这些技术特征的最少专利数为 1，其中每组专利揭示比例分别为：CN103200286A(100.00%)、CN104501944A(100.00%)、CN204330128U(100.00%)、CN103890645A(100.00%)，因此判断该创新性描述的新颖性为：无创新性。

该创新性描述 100.00% %的技术特征与对比专利的技术特征相似度较高，且与这些技术特征相似度较高的最少专利数为 1，其中每组专利相似度较高的比例分别为：CN103200286A(100.00%)、CN104501944A(100.00%)、CN204330128U(100.00%)、CN103890645A(100.00%)，因此判断该创新性描述的创造性为：无(弱)。

该创新性描述的每个技术特征被对比专利揭示的具体情况如下：

- 技术特征“一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口”被对比专利中公开号为CN104501944A CN204330128U CN103200286A CN103890645A US20120018152A1 的专利揭示，且与CN104501944A CN204330128U CN103200286A CN103890645A 的技术特征相似度高；
- 技术特征“所述装置还包括覆盖所述取光窗口、将通过所述取光窗口的环境光从入射光线变为垂直光线的透镜片”被对比专利中公开号为CN104501944A CN204330128U CN103200286A CN103890645A 的专利揭示，且与CN104501944A CN204330128U CN103200286A CN103890645A 的技术特征相似度高；

分析标准：

创新性定论结论	新颖性	创造性
无创新性	无	/
	有	无(弱)
有创新性	有	有(中)
	有	有(强)

技术特征被揭示比例a	覆盖被揭示技术特征的最少专利数	新颖性结论
0 ≤ a < 100%	/	有
a = 100%	> 3	有
a = 100%	≤ 3	无

相似技术相似比例β	覆盖相似技术特征的最少专利数	创造性结论
0% ≤ β ≤ 30%	/	有(强)
30% < β ≤ 40%	> 1	有(强)
	1	有(中)
40% < β ≤ 70%	/	有(中)
70% < β ≤ 100%	/	无(弱)

专利CN104501944A与该创新性描述的比对报告

序号	专利CN104501944A	技术特征相似度	序号	该创新性描述
	摘要			
1	本公开适用于光学技术领域，提供了一种环境亮度的测量方法、装置及移动终端。所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口	100.0%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
2	所述装置还包括覆盖所述取光窗口、将通过所述取光窗口的环境光从入射光线变为垂直光线的透镜片	100.0%	2	所述装置还包括覆盖所述取光窗口、将通过所述取光窗口的环境光从入射光线变为垂直光线的透镜片
3	本公开提供的环境亮度测量装置及移动终端可提高环境亮度测量的准确性	76.4%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
	权利要求			
4	1.一种环境亮度的测量装置，包括光传感器、设置于所述光传感器上方的取光窗口	100.0%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
5	其特征在于，所述环境亮度测量装置还包括覆盖于所述取光窗口内侧面上的、将通过所述取光窗口的环境光线变为垂直光线的透镜	84.2%	2	所述装置还包括覆盖所述取光窗口、将通过所述取光窗口的环境光从入射光线变为垂直光线的透镜片
6	2.根据权利要求1所述的装置，其特征在于，所述透镜为贴合在所述取光窗口内侧面上的薄壁透镜	61.4%	2	所述装置还包括覆盖所述取光窗口、将通过所述取光窗口的环境光从入射光线变为垂直光线的透镜片
7	3.根据权利要求2所述的装置，其特征在于，所述透镜为将通过所述取光窗口射入的各个方向的光折射力垂直光入射到光传感器上	81.6%	2	所述装置还包括覆盖所述取光窗口、将通过所述取光窗口的环境光从入射光线变为垂直光线的透镜片
8	4.一种环境亮度的测量方法，应用于带有显示屏的移动终端上，其特征在于，包括：获取当前环境光的入射光线	69.1%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
9	将入射的所述环境光光线通过折射垂直射入到光传感器	74.1%	2	所述装置还包括覆盖所述取光窗口、将通过所述取光窗口的环境光从入射光线变为垂直光线的透镜片
10	5.根据权利要求4所述的方法，其特征在于，所述方法还包括：根据获取的环境光参数信息，调节显示的亮度，所述参数信息至少包括入射光的光强度值	69.0%	2	所述装置还包括覆盖所述取光窗口、将通过所述取光窗口的环境光从入射光线变为垂直光线的透镜片
11	6.根据权利要求4所述的方法，其特征在于，所述方法还包括：判断入射光光线光强度值的大小	66.1%	2	所述装置还包括覆盖所述取光窗口、将通过所述取光窗口的环境光从入射光线变为垂直光线的透镜片
12	当判断出入射光的光强度值达到设定阈值时，调整屏幕显示亮度至匹配亮度值	51.3%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
13	7.根据权利要求4所述的方法，其特征在于，所述方法还包括：获取所述移动终端的当前状态	59.5%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
14	根据获取到的当前状态，检测入射光的光强度值	52.1%	2	所述装置还包括覆盖所述取光窗口、将通过所述取光窗口的环境光从入射光线变为垂直光线的透镜片
15	将输入射光的光强度值，调节屏幕显示的亮度	53.4%	2	所述装置还包括覆盖所述取光窗口、将通过所述取光窗口的环境光从入射光线变为垂直光线的透镜片
16	8.根据权利要求7所述的方法，其特征在于，所述获取所述移动终端中的光传感器当前状态，包括：面对环境光源状态	66.8%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
17	或：侧向环境光源状态			
18	或：背向环境光源状态			
19	9.根据权利要求8所述的方法，其特征在于，当获取到移动终端中的光传感器面向入射光源时，在设定调整屏幕亮度的策略中执行升高级别操作，所述升高级别操作为比所述设定调整屏幕亮度策略调整的亮度高一设定亮度值的亮度调节操作	77.8%	2	所述装置还包括覆盖所述取光窗口、将通过所述取光窗口的环境光从入射光线变为垂直光线的透镜片
20	当获取到移动终端中的光传感器背向入射光源时，在设定调整屏幕亮度的策略中执行降低级别操作，所述降低级别操作为比所述设定调整屏幕亮度策略调整的亮度低一设定亮度值的亮度调节操作	70.7%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
21	当获取到移动终端中的光传感器侧向入射光源时，在设定调整屏幕亮度的策略中执行增加入射光线强度操作，所述增加入射光线强度操作为扩大光源入射角度	68.8%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
22	10.一种移动终端，包括如权利要求1-9任一所述环境亮度的测量装置	72.9%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口

专利CN204330128U与该创新性描述的比对报告

序号	专利CN204330128U	技术特征相似度	序号	该创新性描述
	摘要			
1	本实用新型适用于技术领域，提供了一种环境亮度的测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口	100.0%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
2	所述装置还包括覆盖所述取光窗口、将通过所述取光窗口的环境光从入射光线变为垂直光线的透镜片	100.0%	2	所述装置还包括覆盖所述取光窗口、将通过所述取光窗口的环境光从入射光线变为垂直光线的透镜片
3	本实用新型提供的环境亮度测量装置及移动终端可提高环境亮度测量的准确性	76.4%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
	权利要求			
4	1.一种环境亮度的测量装置，包括光传感器、设置于所述光传感器上方的取光窗口	100.0%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
5	其特征在于，所述环境亮度测量装置还包括覆盖于所述取光窗口内侧面表面、将通过所述取光窗口的环境光线变为垂直光线的透镜	84.2%	2	所述装置还包括覆盖所述取光窗口、将通过所述取光窗口的环境光从入射光线变为垂直光线的透镜片
6	2.根据权利要求1所述的装置，其特征在于，所述透镜为贴合在所述取光窗口内侧面表面上的薄层透镜	61.4%	2	所述装置还包括覆盖所述取光窗口、将通过所述取光窗口的环境光从入射光线变为垂直光线的透镜片
7	3.根据权利要求2所述的装置，其特征在于，所述透镜为将通过所述取光窗口射入的各个方向的光折射力垂直光入射到光传感器上	81.6%	2	所述装置还包括覆盖所述取光窗口、将通过所述取光窗口的环境光从入射光线变为垂直光线的透镜片
8	4.一种环境亮度的测量装置，应用于带有显示屏的移动终端上，其特征在于，包括：获取模块，用于获取当前环境光的入射光线	74.8%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
9	调整入射光模块，用于将入射的所述环境光线通过折射垂直射入到光传感器	68.0%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
10	5.根据权利要求4所述的装置，其特征在于，所述装置还包括：调节模块，用于根据获取的环境光参数信息，调节显示的亮度，所述参数信息至少包括入射光的光强度值	71.2%	2	所述装置还包括覆盖所述取光窗口、将通过所述取光窗口的环境光从入射光线变为垂直光线的透镜片
11	6.根据权利要求4所述的装置，其特征在于，所述装置还包括：判断模块，用于判断入射光线光强度值的大小	71.0%	2	所述装置还包括覆盖所述取光窗口、将通过所述取光窗口的环境光从入射光线变为垂直光线的透镜片
12	调整模块，还用于当判断出入射光的光强度值达到设定阈值时，调整屏幕显示亮度至匹配亮度值	54.4%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
13	7.根据权利要求4所述的装置，其特征在于，所述装置还包括：获取单元，还用于获取所述移动终端的当前状态	62.8%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
14	检测模块，用于根据获取到的当前状态，检测入射光的光强度值			
15	调整模块，还用于根据入射光的光强度值，调节屏幕显示的亮度	54.7%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
16	8.根据权利要求7所述的装置，其特征在于，所述获取模块，包括：用于获取面对环境光源状态	63.3%	2	所述装置还包括覆盖所述取光窗口、将通过所述取光窗口的环境光从入射光线变为垂直光线的透镜片
17	或 用于获取侧向环境光源状态	55.8%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
18	或 用于获取背向环境光源状态	53.6%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
19	9.根据权利要求8所述的装置，其特征在于，当获取模块获取到移动终端中的光传感器面向入射光源时，在设定调整屏幕亮度的策略中执行升高级别操作，所述升高级别操作作为比所述设定调整屏幕亮度策略调整的亮度高一设定亮度值的亮度调节操作	79.1%	2	所述装置还包括覆盖所述取光窗口、将通过所述取光窗口的环境光从入射光线变为垂直光线的透镜片
20	当获取模块获取到移动终端中的光传感器背向入射光源时，在设定调整屏幕亮度的策略中执行降低级别操作，所述降低级别操作作为比所述设定调整屏幕亮度策略调整的亮度低一设定亮度值的亮度调节操作	70.7%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
21	当获取模块获取到移动终端中的光传感器朝向入射光源时，在设定调整屏幕亮度的策略中执行增加入射光线强度操作，所述增加入射光线强度操作作为扩大光源入射角角度	69.1%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
22	10.一种移动终端，包括如权利要求1-9任一所述环境亮度的测量装置	72.9%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口

专利CN103200286A与该创新性描述的比对报告

序号	专利CN103200286A	技术特征相似度	序号	该创新性描述
摘要				
1	本发明适用于光技术领域，提供了一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口	100.0%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器，设置于所述光传感器上方的取光窗口
2	所述装置还包括覆盖所述取光窗口、将所述取光窗口的环境光从平行光线变为非平行光线的散光镜	96.6%	2	所述装置还包括覆盖所述取光窗口、将所述取光窗口的环境光从入射光线变为垂直光线的透镜片
3	本发明提供的环境亮度测量装置及移动终端可提高环境亮度测量的准确性	72.5%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器，设置于所述光传感器上方的取光窗口
权利要求				
4	1.一种环境亮度测量装置，包括光传感器，设置于所述光传感器上方的取光窗口	100.0%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器，设置于所述光传感器上方的取光窗口
5	其特征在于，所述环境亮度测量装置还包括覆盖所述取光窗口、将所述取光窗口的环境光从平行光线变为非平行光线的散光镜	91.4%	2	所述装置还包括覆盖所述取光窗口、将所述取光窗口的环境光从入射光线变为垂直光线的透镜片
6	2.如权利要求1所述的装置，其特征在于，所述散光镜为贴合在所述取光窗口上的准星	62.5%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器，设置于所述光传感器上方的取光窗口
7	3.如权利要求1或2所述的装置，其特征在于，所述散光镜放置于所述散光镜的上方或下方	58.8%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器，设置于所述光传感器上方的取光窗口
8	4.如权利要求1或2所述的装置，其特征在于，所述散光镜为毛玻璃或白色纸张	51.5%	2	所述装置还包括覆盖所述取光窗口、将所述取光窗口的环境光从入射光线变为垂直光线的透镜片
9	5.一种移动终端，其特征在于，包括如权利要求1至4中任一项所述的环境亮度测量装置	63.4%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器，设置于所述光传感器上方的取光窗口

专利CN103890645A与该创新性描述的对比报告

序号	专利CN103890645A	技术特征相似度	序号	该创新性描述
	摘要			
1	本发明提供一种基于环境光条件而控制显示器的照明的包含编码于计算机存储媒体上的计算机程序的系统、方法及设备	60.8%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
2	在一个方面中，一种显示装置可包括显示器及经配置以给所述显示器提供补充光的辅助光源	54.5%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
3	所述显示装置可进一步包含传感器系统，所述传感器系统经配置以测量来自宽范围的方向的环境光的漫射度且经配置以测量来自相对窄范围的方向的所述环境光的定向度	71.7%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
4	所述显示装置可进一步包含控制器，所述控制器经配置以调整所述辅助光源以给所述显示器提供一定量的补充光	60.0%	2	所述装置还包括罩盖所述取光窗口，将通过所述取光窗口的环境光从入射光线变为垂直光线的横镜片
5	所述补充光量可至少部分地基于所述环境光的所述所测量定向角度及所述所测量漫射程度	69.9%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
	权利要求			
6	1.一种显示装置，其包括：显示器	61.8%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
7	辅助光源，其经配置以给所述显示器提供补充光	61.2%	2	所述装置还包括罩盖所述取光窗口，将通过所述取光窗口的环境光从入射光线变为垂直光线的横镜片
8	传感器系统，其经配置以测量：来自宽范围的方向的环境光的漫射程度	65.3%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
9	以及：来自相对窄范围的方向的所述环境光的定向角度	63.9%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
10	以及：控制器，其与所述传感器系统通信，所述控制器经配置以调整所述辅助光源以给所述显示器提供一定量的补充光，所述补充光量至少部分地基于所述环境光的所述所测量定向角度及所述所测量漫射程度	70.1%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
11	2.根据权利要求1所述的显示装置，其中所述显示器包含反射式显示器	60.8%	2	所述装置还包括罩盖所述取光窗口，将通过所述取光窗口的环境光从入射光线变为垂直光线的横镜片
12	3.根据权利要求2所述的显示装置，其中所述反射式显示器包含干涉式调制器	57.8%	2	所述装置还包括罩盖所述取光窗口，将通过所述取光窗口的环境光从入射光线变为垂直光线的横镜片
13	4.根据权利要求1所述的显示装置，其中所述传感器系统包含经配置以测量自至少两个方向的环境光的至少一个传感器	59.8%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
14	5.根据权利要求4所述的显示装置，其中所述至少一个传感器包含经配置以测量所述漫射程度的漫射光传感器及经配置以测量所述定向角度的定向光传感器	61.0%	2	所述装置还包括罩盖所述取光窗口，将通过所述取光窗口的环境光从入射光线变为垂直光线的横镜片
15	6.根据权利要求4所述的显示装置，其中所述至少一个传感器包含多个定向光传感器，每一定向光传感器经配置以测量在环绕一方向的立体角内接收的所述环境光的照度，所述立体角实质上小于2°至31度范围	67.5%	2	所述装置还包括罩盖所述取光窗口，将通过所述取光窗口的环境光从入射光线变为垂直光线的横镜片
16	7.根据权利要求1所述的显示装置，其中所述控制器经配置以至少部分地基于所述所测量定向角度与所述所测量漫射程度的比率而调整所述辅助光源	60.6%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
17	8.根据权利要求1所述的显示装置，其中所述控制器经配置以至少部分地基于所述所测量定向角度与所述所测量漫射程度的和而调整所述辅助光源	63.6%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
18	9.根据权利要求1所述的显示装置，其中所述控制器经配置以基于对定向环境光源的方向而调整所述辅助光源	60.6%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
19	10.根据权利要求所述的显示装置，其中所述定向环境光源的所述方向是至少部分地基于由所述传感器系统测量的所述定向角度及所述漫射程度而确定的	69.0%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
20	11.根据权利要求10所述的显示装置，其中所述定向环境光源的所述方向是至少部分地基于观看者的位置而调整所述辅助光源	56.2%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
21	12.根据权利要求所述的显示装置，其进一步包括：处理器，其经配置以与所述显示器通信，所述处理器经配置以处理图像数据	56.8%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
22	以及：存储器装置，其经配置以与所述处理器通信	60.0%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
23	13.根据权利要求12所述的显示装置，其进一步包括：驱动电路，其经配置以将至少一个信号发送到所述显示器	56.7%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
24	14.根据权利要求13所述的显示装置，其进一步包括：驱动器控制器，其经配置以将所述图像数据的至少一部分发送到所述驱动电路	57.3%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
25	15.根据权利要求所述的显示装置，其进一步包括：图像源模块，其经配置以将所述图像数据发送到所述处理器			
26	16.根据权利要求所述的显示装置，其中所述图像源模块包含接收器、收发器及发射器中的至少一个者	62.7%	2	所述装置还包括罩盖所述取光窗口，将通过所述取光窗口的环境光从入射光线变为垂直光线的横镜片
27	17.根据权利要求15所述的显示装置，其中所述驱动器控制器包含接收器、收发器及发射器中的至少一个者	58.4%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
28	18.一种显示装置，其包括：输入装置，其经配置以接收输入数据并将所述输入数据传送到所述处理器	61.8%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
29	辅助光源	69.4%	2	所述装置还包括罩盖所述取光窗口，将通过所述取光窗口的环境光从入射光线变为垂直光线的横镜片
30	用于感知环境光的装置，所述用于感知环境光的装置经配置以测量来自宽范围的方向的所述环境光的漫射度且经配置以测量来自相对窄范围的方向的所述环境光的定向角度	64.5%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
31	以及：控制器，其与所述用于感知环境光的装置通信，所述控制器经配置以至少部分地基于所述环境光的所述所测量定向角度及所述所测量漫射程度而调整所述辅助光源	66.9%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
32	19.根据权利要求18所述的显示装置，其中所述显示器包含反射式显示器	60.8%	2	所述装置还包括罩盖所述取光窗口，将通过所述取光窗口的环境光从入射光线变为垂直光线的横镜片
33	20.根据权利要求18所述的显示装置，其中所述反射式显示器包含干涉式调制器	54.9%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
34	21.根据权利要求18所述的显示装置，其中所述辅助光源包含前光	52.1%	2	所述装置还包括罩盖所述取光窗口，将通过所述取光窗口的环境光从入射光线变为垂直光线的横镜片
35	22.根据权利要求18所述的显示装置，其中所述用于感知环境光的装置包含经配置以测量来自至少两个方向的环境光的至少一个传感器	59.2%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
36	23.根据权利要求22所述的显示装置，其中所述至少一个传感器包含经配置以测量所述漫射程度的漫射光传感器及经配置以测量所述定向角度的定向光传感器	59.5%	2	所述装置还包括罩盖所述取光窗口，将通过所述取光窗口的环境光从入射光线变为垂直光线的横镜片
37	24.根据权利要求22所述的显示装置，其中所述至少一个传感器包含多个定向光传感器，每一定向光传感器经配置以测量在环绕一方向的立体角内接收的所述环境光的照度，所述立体角实质上小于2°至31度范围	68.4%	2	所述装置还包括罩盖所述取光窗口，将通过所述取光窗口的环境光从入射光线变为垂直光线的横镜片
38	25.根据权利要求18所述的显示装置，其中所述控制器经配置以至少部分地基于所述所测量定向角度与所述所测量漫射程度的比率而调整所述辅助光源	62.7%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
39	26.根据权利要求18所述的显示装置，其中所述控制器经配置以至少部分地基于所述所测量定向角度与所述所测量漫射程度的和而调整所述辅助光源	63.6%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
40	27.根据权利要求18所述的显示装置，其中所述控制器经配置以基于对定向环境光源的方向而调整所述辅助光源	63.1%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
41	28.根据权利要求27所述的显示装置，其中所述控制器经配置以基于观看者的位置而调整所述辅助光源	56.4%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
42	29.一种控制显示装置的显示器的照明的方法，所述显示装置具有经配置以给所述显示器提供补充光的辅助光源，所述显示装置具有漫射光传感器及定向光传感器，所述方法包括：经由所述漫射光传感器测量来自宽范围的方向的环境光的漫射程度	69.3%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
43	经由所述定向光传感器测量来自相对窄范围的方向的所述环境光的定向角度	69.4%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
44	以及：经由处理器响应于指令的执行，至少部分地基于所述环境光的所述所测量定向角度及所述所测量漫射程度而调整所述辅助光源	63.0%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
45	30.根据权利要求29所述的方法，其中调整所述辅助光源包含至少部分地基于所述所测量定向角度与所述所测量漫射程度的比率而调整所述辅助光源	58.6%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
46	31.根据权利要求29所述的方法，其中调整所述辅助光源包含至少部分地基于所述所测量定向角度与所述所测量漫射程度的和而调整所述辅助光源	58.8%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
47	32.根据权利要求29所述的方法，其中调整所述辅助光源是基于对定向环境光源的方向	58.5%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
48	33.根据权利要求32所述的方法，其中调整所述辅助光源是基于观看者的位置			
49	34.一种上面有碍于控制显示装置的显示器的照明的指令的半暂时有形计算机存储媒体，所述指令在由计算机系统执行时致使所述计算机系统执行包括以下步骤的操作：从计算机可读媒体接收来自相对窄范围的方向的环境光的定向角度的测量	69.5%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
50	从计算机可读媒体接收来自宽范围的方向的环境光的漫射程度的测量	53.0%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
51	至少部分地基于所述环境光的所述定向角度的所述测量及所述漫射程度的所述测量而确定额外照明条件	64.3%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
52	以及：将至少部分地基于所述额外照明条件的照明调整发射到经配置以给所述显示器提供光的光源	64.3%	2	所述装置还包括罩盖所述取光窗口，将通过所述取光窗口的环境光从入射光线变为垂直光线的横镜片
53	35.根据权利要求34所述的半暂时有形计算机存储媒体，其中接收环境光的所述漫射程度包含接收针对不同方向的多个定向角度	55.9%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
54	36.根据权利要求34所述的半暂时有形计算机存储媒体，其中确定额外照明条件包含存取漫射程度与定向角度对所述漫射程度的比率相关的查找表	51.6%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
55	37.根据权利要求34所述的半暂时有形计算机存储媒体，其中确定额外照明条件包含存取漫射程度与定向角度对所述漫射程度的比率相关的公式	51.3%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口
56	38.根据权利要求34所述的半暂时有形计算机存储媒体，其中确定额外照明条件包含存取至少部分地基于所述所测量定向角度与所述所测量漫射程度的和的公式	58.5%	1	一种环境亮度测量装置及移动终端，所述环境亮度测量装置包括光传感器、设置于所述光传感器上方的取光窗口

专利US20120019152A1与该创新性描述的比对报告

序号	专利US20120019152A1	技术特征相似度	序号	该创新性描述
	摘要			
1	Methods and devices are provided for controlling the brightness of a display for an electronic device based on ambient light conditions			
2	In one embodiment, an electronic device may employ one or more brightness adjustment profiles for changing the brightness of a display based on ambient light levels and/or the angle of incidence of one or more ambient light sources			
3	In certain embodiments, one or more ambient light sensors may be designed to perceive the ambient light level differently based on the angle of incidence of a light source			
4	The perceived ambient light level may then be used to adjust the display brightness based on the one or more brightness adjustment profiles			
5	In other embodiments, one or more ambient light sensors may be designed to detect the angle of incidence of an ambient light source			
6	In these embodiments, the detected angle and the ambient light level may be used to adjust the display brightness			
	权利要求			
7	An electronic device, comprising: a display comprising a backlight			
8	a sensing device configured to detect an ambient light angle	53.2%	1	A brightness measuring device and a mobile terminal, the ambient brightness measuring device comprises a light window arranged above the light sensor, the light sensor
9	and a display controller operably coupled to the backlight and configured to adjust a brightness of the backlight based on the detected ambient light angle			
10	a display comprising a backlight			
11	a sensing device configured to detect an ambient light angle	53.2%	1	A brightness measuring device and a mobile terminal, the ambient brightness measuring device comprises a light window arranged above the light sensor, the light sensor
12	anda display controller operably coupled to the backlight and configured to adjust a brightness of the backlight based on the detected ambient light angle			
13	The electronic device of claim 1, wherein the sensing device comprises an ambient light sensor			
14	The electronic device of claim 1, wherein the sensing device comprises a camera			
15	The electronic device of claim 1, comprising a user interface configured to receive a user input that selects an angular adjustment profile for the backlight, wherein the angular adjustment profiles specifies angular adjustments to the brightness based on the detected ambient light angle			
16	The electronic device of claim 1, comprising one or more ambient light sensors configured to detect an ambient light level, wherein the display controller is configured to adjust the brightness based on the detected ambient light level			
17	An electronic device, comprising: a display comprising a backlight			
18	one or more ambient light sensors configured to detect a level of ambient light and an angle of incidence of the ambient light			
19	and a display controller operably coupled to the backlight and configured to adjust the detected level of ambient light based on the angle of incidence to produce an adjusted ambient light level and to adjust a brightness of the backlight based on the adjusted ambient light level			
20	a display comprising a backlight			
21	one or more ambient light sensors configured to detect a level of ambient light and an angle of incidence of the ambient light			
22	anda display controller operably coupled to the backlight and configured to adjust the detected level of ambient light based on the angle of incidence to produce an adjusted ambient light level and to adjust a brightness of the backlight based on the adjusted ambient light level			
23	The electronic device of claim 6, wherein the adjusted ambient light level is approximately equal to the detected level of ambient light multiplied by the cosine of the angle of incidence			
24	The electronic device of claim 6			
25	wherein the adjusted ambient light level is approximately equal to or greater than the detected level of ambient light multiplied by the cosine of the angle of incidence and less than the detected level of ambient light when the angle of incidence is greater than or less than ninety degrees			
26	The electronic device of claim 6, comprising a user interface configured to receive a user input that enables adjustment of the detected level of ambient light based on the angle of incidence			
27	A method, comprising: detecting an ambient light level for an ambient light source			
28	detecting an angle of incidence of the ambient light from the ambient light source			
29	determining an angular adjustment for the detected ambient light level based on the detected angle of incidence			
30	and adjusting a brightness of a backlight based on the angular adjustment			
31	detecting an ambient light level for an ambient light source			
32	detecting an angle of incidence of the ambient light from the ambient light source			
33	determining an angular adjustment for the detected ambient light level based on the detected angle of incidence			
34	andadjusting a brightness of a backlight based on the angular adjustment			
35	The method of claim 10, wherein determining an angular adjustment comprises determining an adjusted ambient light level approximately equal to the detected ambient light level multiplied by the cosine of the detected angle of incidence			
36	The method of claim 10			
37	wherein determining an angular adjustment comprises determining an adjusted ambient light level approximately equal to or greater than the detected ambient light level multiplied by the cosine of the detected angle of incidence and approximately less than the detected ambient light level when the angle of incidence is greater than or less than ninety degrees			
38	The method of claim 10			
39	comprising adjusting the detected ambient light level by the angular adjustment to produce an adjusted ambient light level			
40	wherein adjusting a brightness of the backlight comprises determining a brightness level for the backlight that corresponds to the adjusted ambient light level			
41	The method of claim 10, wherein adjusting a brightness of the backlight comprises determining a brightness level for the backlight that corresponds to the detected ambient light level and applying the angular adjustment to the determined brightness level			
42	The method of claim 10, comprising verifying enablement of an angular adjustment for the backlight			
43	The method of claim 10, comprising: detecting multiple ambient light levels each corresponding to a different ambient light source: detecting multiple angles of incidence each corresponding to one of the different ambient light sources			
44	and weighting the detected ambient light levels based on their corresponding detected angle of incidence			
45	detecting multiple ambient light levels each corresponding to a different ambient light source:detecting multiple angles of incidence each corresponding to one of the different ambient light sources			
46	andweighting the detected ambient light levels based on their corresponding detected angle of incidence			
47	Non-transitory computer-readable storage media comprising instructions for: adjusting a detected ambient light level to produce an adjusted ambient light level that compensates for the angle of incidence of ambient light			
48	and adjusting a brightness of a backlight based on the adjusted ambient light level			
49	adjusting a detected ambient light level to produce an adjusted ambient light level that compensates for the angle of incidence of ambient light			
50	andadjusting a brightness of a backlight based on the adjusted ambient light level			
51	The non-transitory computer-readable storage media of claim 17, comprising instructions for determining the adjusted ambient light level to be approximately equal to the detected ambient light level multiplied by the cosine of the angle of incidence of ambient light			
52	The non-transitory computer-readable storage media of claim 17, comprising instructions for determining the adjusted ambient light level to be approximately equal to or greater than the detected ambient light level multiplied by the cosine of the angle of incidence of ambient light			
53	An electronic device, comprising: a display comprising a backlight			
54	an ambient light sensor configured to detect an ambient light level for one or more ambient light sources each producing an emitted ambient light level measured as ambient light contacting the display at a ninety degree angle of incidence			
55	wherein the detected ambient light level is a function of an actual angle of incidence of each of the one or more ambient light sources with respect to the display			
56	and a display controller operably coupled to the backlight and configured to adjust a brightness of the backlight based on the detected ambient light level			
57	a display comprising a backlight			
58	an ambient light sensor configured to detect an ambient light level for one or more ambient light sources each producing an emitted ambient light level measured as ambient light contacting the display at a ninety degree angle of incidence			
59	wherein the detected ambient light level is a function of an actual angle of incidence of each of the one or more ambient light sources with respect to the display			
60	anda display controller operably coupled to the backlight and configured to adjust a brightness of the backlight based on the detected ambient light level			
61	The electronic device of claim 20, wherein the detected ambient light level is approximately equal to a sum of each of the emitted ambient light levels multiplied by the cosine of each of the actual angles of incidence			
62	The electronic device of claim 20, wherein the detected ambient light level is greater than or approximately equal to a sum of each of the emitted ambient light levels multiplied by the cosine of each of the actual angles of incidence			
63	The electronic device of claim 20, wherein the detected ambient light level is approximately equal to the emitted ambient light level when the actual angle of incidence is approximately ninety degrees			
64	The electronic device of claim 20, wherein the display controller is configured to adjust the brightness using a brightness adjustment profile that identifies brightness levels for the backlight based on the detected ambient light level			

专利US9332616B1与该创新性描述的比对报告

序号	专利US9332616B1	技术特征相似度	序号	该创新性描述
	摘要			
1	A path light that utilizes an ambient light sensor to determine the lighting conditions may experience feedback from its light source if it determines that the lighting conditions are appropriate to illuminate the path light's light source			
2	The path light, as disclosed herein, may compute an offset value to ascertain the amount of feedback from the light source			
3	Upon learning the offset value, the path light may subtract the offset value from a detected amount of light to determine whether the lighting conditions of its surroundings still meet a threshold level of darkness for the path light to illuminate			
	权利要求			
4	A computer-implemented method, comprising: determining a first ambient light value based on a first amount of light detected by an ambient light sensor			
5	illuminating a light source integrated into a device with the ambient light sensor			
6	determining a second ambient light value based on a second amount of light detected by the ambient light sensor when the light source is illuminated at an intensity			
7	computing an offset value representing a difference between the first ambient light value and the second ambient light value			
8	detecting a motion computing a third ambient light value based on a third amount of light detected by the ambient light sensor and the offset value			
9	detecting a motion and determining an illumination level of the light source based on the third ambient light value and the motion			
10	determining a first ambient light value based on a first amount of light detected by an ambient light sensor			
11	illuminating a light source integrated into a device with the ambient light sensor			
12	determining a second ambient light value based on a second amount of light detected by the ambient light sensor when the light source is illuminated at an intensity			
13	computing an offset value representing a difference between the first ambient light value and the second ambient light value			
14	detecting a motioncomputing a third ambient light value based on a third amount of light detected by the ambient light sensor and the offset value			
15	detecting a motion anddetermining an illumination level of the light source based on the third ambient light value and the motion			
16	The method of claim 1, wherein the offset value is dynamically adjusted based on data generated by the ambient light sensor over a period of time			
17	The method of claim 1, wherein the first ambient light value and the second ambient light value are determined in a dark environment			
18	The method of claim 3, wherein the dark environment comprises an ambient light intensity of not more than 60 lux			
19	The method of claim 1, wherein the intensity of the light source is not more than 150 lux			
20	The method of claim 1, wherein the intensity of the light source is not more than 500 lux			
21	The method of claim 1, wherein the intensity of the light source is in a range from 125 lux to 550 lux inclusive			
22	The method of claim 1, wherein the device comprises a single device			
23	The method of claim 1, further comprising determining the illumination level of the light source based on a time of day			
24	The method of claim 1, wherein the motion is detected within a field of view of a different device and not within the field of view of the device that contains the light source and the ambient light sensor			
25	The method of claim 1, further comprising transmitting, from the device, a signal indicating the motion			
26	A path light device, comprising: an ambient light sensor			
27	a light source a processor communicatively coupled to the light source and the ambient light sensor, the processor configured to: determine a first ambient light value based on a first amount of light detected by the ambient light sensor			
28	a light source illuminating the light source			
29	a light source determine a second ambient light value based on a second amount of light detected by the ambient light sensor when the light source is illuminated at an intensity			
30	a light source compute an offset value representing a difference between the first ambient light value and the second ambient light value			
31	a light source detect a motion compute a third ambient light value based on a third amount of light detected by the ambient light sensor and the offset value			
32	a light source detect a motion and determine an illumination level of the light source based on the third ambient light value and the motion			
33	an ambient light sensor			
34	a light sources processor communicatively coupled to the light source and the ambient light sensor, the processor configured to: determine a first ambient light value based on a first amount of light detected by the ambient light sensor			
35	a light source illuminating the light source			
36	a light source determine a second ambient light value based on a second amount of light detected by the ambient light sensor when the light source is illuminated at an intensity			
37	a light source compute an offset value representing a difference between the first ambient light value and the second ambient light value			
38	a light source detect a motion compute a third ambient light value based on a third amount of light detected by the ambient light sensor and the offset value			
39	a light source detect a motion and determine an illumination level of the light source based on the third ambient light value and the motion			
40	determine a first ambient light value based on a first amount of light detected by the ambient light sensor			
41	illuminating the light source			
42	determine a second ambient light value based on a second amount of light detected by the ambient light sensor when the light source is illuminated at an intensity			
43	compute an offset value representing a difference between the first ambient light value and the second ambient light value			
44	detect a motioncompute a third ambient light value based on a third amount of light detected by the ambient light sensor and the offset value			
45	detect a motion anddetermine an illumination level of the light source based on the third ambient light value and the motion			
46	The path light device of claim 12, wherein the offset value is dynamically adjusted based on data generated by the ambient light sensor over a period of time			
47	The path light device of claim 12, wherein the first ambient light value and the second ambient light value are determined in a dark environment			
48	The path light device of claim 14, wherein the dark environment comprises an ambient light intensity of not more than 60 lux			
49	The path light device of claim 12, wherein the intensity of the light source is not more than 150 lux			
50	The path light device of claim 12, wherein the intensity of the light source is not more than 500 lux			
51	The path light device of claim 12, wherein the intensity of the light source is in a range from 125 lux to 550 lux inclusive			
52	The path light device of claim 12, the processor further configured to determine the illumination level of the light source based on a time of day			
53	The path light device of claim 12, wherein the processor is configured to detect the motion within a field of view of a different device and not within the field of view of the path light device			
54	The system of claim 12, the processor further configured to transmit, from the path light device, a signal indicating the motion			
55	A computer-implemented method			
56	comprising: obtaining an offset value for a path light corresponding to a difference between a first amount of light detected by an ambient light sensor of the path light when a light source of the path light is illuminated at an intensity and a second amount of light detected by the ambient light sensor when the light source is inactive			
57	receiving, by the path light, an activation signal			
58	activating the light source at the intensity			
59	detecting a third amount of light by the ambient light sensor			
60	subtracting the offset value from the third amount of light to produce an adjusted light level			
61	and determining if the adjusted light level is below a threshold			
62	obtaining an offset value for a path light corresponding to a difference between a first amount of light detected by an ambient light sensor of the path light when a light source of the path light is illuminated at an intensity and a second amount of light detected by the ambient light sensor when the light source is inactive			
63	receiving, by the path light, an activation signal			
64	activating the light source at the intensity			
65	detecting a third amount of light by the ambient light sensor			
66	subtracting the offset value from the third amount of light to produce an adjusted light level			
67	anddetermining if the adjusted light level is below a threshold			
68	The method of claim 22, further comprising illuminating the light source of the path light in response to a determination that the adjusted light level is below the threshold			
69	A computer-implemented method			
70	comprising: determining a first offset value for a path light corresponding to a difference between a first amount of light detected by an ambient light sensor of the path light when a light source of the path light is illuminated at an intensity and a second amount of light detected by the ambient light sensor when the light source is inactive			
71	determining a first environmental light amount by the ambient light sensor			
72	applying the first offset value to the environmental light amount			
73	receiving a re-test signal			
74	responsive to the re-test signal			
75	determining a second offset value for the path light corresponding to a difference between a third amount of light detected by the ambient light sensor of the path light when the light source of the path light is illuminated at the intensity and a fourth amount of light detected by the ambient light sensor when the light source is inactive			
76	determining a second environmental light amount by the ambient light sensor			
77	and applying the second offset value to the second environmental light amount			
78	determining a first offset value for a path light corresponding to a difference between a first amount of light detected by an ambient light sensor of the path light when a light source of the path light is illuminated at an intensity and a second amount of light detected by the ambient light sensor when the light source is inactive			
79	determining a first environmental light amount by the ambient light sensor			
80	applying the first offset value to the environmental light amount			
81	receiving a re-test signal			
82	responsive to the re-test signal			
83	determining a second offset value for the path light corresponding to a difference between a third amount of light detected by the ambient light sensor of the path light when the light source of the path light is illuminated at the intensity and a fourth amount of light detected by the ambient light sensor when the light source is inactive			
84	determining a second environmental light amount by the ambient light sensor			
85	andapplying the second offset value to the second environmental light amount			
86	The method of claim 24, further comprising: determining that the second environmental light amount is below a threshold			
87	and illuminating the light source of the path light in response to a determination that the second environmental light amount is below the threshold			
88	determining that the second environmental light amount is below a threshold			
89	andilluminating the light source of the path light in response to a determination that the second environmental light amount is below the threshold			

专利US8686981B2与该创新性描述的比对报告

序号	专利US8686981B2	技术特征相似度	序号	该创新性描述
	摘要			
1	Methods and devices are provided for controlling the brightness of a display for an electronic device based on ambient light conditions			
2	In one embodiment, an electronic device may employ one or more brightness adjustment profiles for changing the brightness of a display based on ambient light levels and/or the angle of incidence of one or more ambient light sources			
3	In certain embodiments, one or more ambient light sensors may be designed to perceive the ambient light level differently based on the angle of incidence of a light source			
4	The perceived ambient light level may then be used to adjust the display brightness based on the one or more brightness adjustment profiles			
5	In other embodiments, one or more ambient light sensors may be designed to detect the angle of incidence of an ambient light source			
6	In these embodiments, the detected angle and the ambient light level may be used to adjust the display brightness			
	权利要求			
7	An electronic device, comprising: a display comprising a backlight			
8	a sensing device configured to detect an ambient light level and an angle of incidence value of ambient light			
9	and a display controller operably coupled to the backlight and configured to: determine an angular adjustment profile based upon the angle of incidence value			
10	wherein the angular adjustment profile defines adjustments to the detected ambient light level based upon the angle of incidence			
11	determine an adjusted ambient light level by multiplying the ambient light level by the angular adjustment profile			
12	and adjust a brightness of the backlight based on the adjusted ambient light level			
13	a display comprising a backlight			
14	a sensing device configured to detect an ambient light level and an angle of incidence value of ambient light			
15	anda display controller operably coupled to the backlight and configured to: determine an angular adjustment profile based upon the angle of incidence value			
16	wherein the angular adjustment profile defines adjustments to the detected ambient light level based upon the angle of incidence			
17	determine an adjusted ambient light level by multiplying the ambient light level by the angular adjustment profile			
18	and adjust a brightness of the backlight based on the adjusted ambient light level			
19	determine an angular adjustment profile based upon the angle of incidence value			
20	wherein the angular adjustment profile defines adjustments to the detected ambient light level based upon the angle of incidence			
21	determine an adjusted ambient light level by multiplying the ambient light level by the angular adjustment profile			
22	andadjust a brightness of the backlight based on the adjusted ambient light level			
23	The electronic device of claim 1, wherein the sensing device comprises an ambient light sensor and the display controller is configured to determine the angular adjustment profile as the cosine of the angle of incidence value			
24	The electronic device of claim 1, wherein the sensing device comprises a camera			
25	The electronic device of claim 1			
26	comprising a user interface configured to receive a user input that selects a particular angular adjustment profile for the backlight			
27	wherein the particular angular adjustment profile specifies angular-based adjustments to the brightness based on the detected ambient light angle to simulate a reflectivity associated with hard copy material			
28	The electronic device of claim 1, comprising a user interface configured to receive a user input that selectively enables or disables adjustment of the brightness of the backlight based upon the angle of incidence of the ambient light			
29	An electronic device, comprising: a display comprising a backlight			
30	one or more ambient light sensors configured to detect a level of ambient light and an angle of incidence value of the ambient light			
31	and a display controller operably coupled to the backlight and configured to: determine an angular adjustment profile based at least on the level of ambient light and a function of the angle of incidence value			
32	wherein the angular adjustment profile defines adjustments to the detected ambient light level based upon the angle of incidence			
33	adjust the detected level of ambient light based on the angular adjustment profile to produce an adjusted ambient light level			
34	and adjust a brightness of the backlight based on the adjusted ambient light level			
35	a display comprising a backlight			
36	one or more ambient light sensors configured to detect a level of ambient light and an angle of incidence value of the ambient light			
37	anda display controller operably coupled to the backlight and configured to: determine an angular adjustment profile based at least on the level of ambient light and a function of the angle of incidence value			
38	wherein the angular adjustment profile defines adjustments to the detected ambient light level based upon the angle of incidence			
39	adjust the detected level of ambient light based on the angular adjustment profile to produce an adjusted ambient light level			
40	and adjust a brightness of the backlight based on the adjusted ambient light level			
41	determine an angular adjustment profile based at least on the level of ambient light and a function of the angle of incidence value, wherein the angular adjustment profile defines adjustments to the detected ambient light level based upon the angle of incidence			
42	adjust the detected level of ambient light based on the angular adjustment profile to produce an adjusted ambient light level			
43	andadjust a brightness of the backlight based on the adjusted ambient light level			
44	The electronic device of claim 4, wherein the adjusted ambient light level is approximately equal to the detected level of ambient light multiplied by the cosine of the angle of incidence			
45	The electronic device of claim 5			
46	wherein the adjusted ambient light level is approximately equal to or greater than the detected level of ambient light multiplied by the cosine of the angle of incidence and less than the detected level of ambient light when the angle of incidence is greater than or less than ninety degrees			
47	The electronic device of claim 6, comprising a user interface configured to receive a user input that selectively enables or disables adjustment of the detected level of ambient light based on the angle of incidence			
48	A method, comprising: detecting whether an angular adjustment function is selectively enabled via a user selection in a graphical user interface			
49	when the adjustment function is selectively enabled: detecting, via a display controller, an ambient light level for an ambient light source			
50	detecting, via the display controller, an angle of incidence value of the ambient light from the ambient light source			
51	determining, via the display controller, an angular adjustment profile for the detected ambient light level based on the detected angle of incidence value			
52	wherein the angular adjustment profile defines adjustments to the detected ambient light level based upon the angle of incidence			
53	and adjusting, via the display controller, a brightness of a backlight based on the angular adjustment profile			
54	detecting whether an angular adjustment function is selectively enabled via a user selection in a graphical user interface			
55	when the adjustment function is selectively enabled: detecting, via a display controller, an ambient light level for an ambient light source			
56	detecting, via the display controller, an angle of incidence value of the ambient light from the ambient light source			
57	determining, via the display controller, an angular adjustment profile for the detected ambient light level based on the detected angle of incidence value			
58	wherein the angular adjustment profile defines adjustments to the detected ambient light level based upon the angle of incidence			
59	and adjusting, via the display controller, a brightness of a backlight based on the angular adjustment profile			
60	detecting, via a display controller, an ambient light level for an ambient light source			
61	detecting, via the display controller, an angle of incidence value of the ambient light from the ambient light source			
62	determining, via the display controller, an angular adjustment profile for the detected ambient light level based on the detected angle of incidence value			
63	wherein the angular adjustment profile defines adjustments to the detected ambient light level based upon the angle of incidence			
64	andadjusting, via the display controller, a brightness of a backlight based on the angular adjustment profile			
65	The method of claim 10, wherein determining an angular adjustment comprises determining an adjusted ambient light level approximately equal to the detected ambient light level multiplied by the cosine of the detected angle of incidence			
66	The method of claim 10			
67	wherein determining an angular adjustment comprises determining an adjusted ambient light level approximately equal to or greater than the detected ambient light level multiplied by the cosine of the detected angle of incidence and approximately less than the detected ambient light level when the angle of incidence is greater than or less than ninety degrees			
68	The method of claim 10			
69	comprising adjusting the detected ambient light level by the angular adjustment to produce an adjusted ambient light level			
70	wherein adjusting a brightness of the backlight comprises determining a brightness level for the backlight that corresponds to the adjusted ambient light level			
71	The method of claim 10, wherein adjusting a brightness of the backlight comprises determining a brightness level for the backlight that corresponds to the detected ambient light level and applying the angular adjustment to the determined brightness level			
72	The method of claim 10, comprising verifying enablement of an angular adjustment for the backlight			
73	The method of claim 10, comprising: detecting multiple ambient light levels each corresponding to a different ambient light source: detecting multiple angles of incidence each corresponding to one of the different ambient light sources			
74	weighting the different ambient light sources based upon their corresponding detected ambient light levels and their corresponding detected angle of incidence			
75	and calculating an angular adjustment profile based upon the weighted different ambient light sources			
76	wherein the angular adjustment profile defines adjustments to the detected ambient light levels based upon the angles of incidence			
77	detecting multiple ambient light levels each corresponding to a different ambient light source:detecting multiple angles of incidence each corresponding to one of the different ambient light sources			
78	weighting the different ambient light sources based upon their corresponding detected ambient light levels and their corresponding detected angle of incidence			
79	andcalculating an angular adjustment profile based upon the weighted different ambient light sources			
80	wherein the angular adjustment profile defines adjustments to the detected ambient light levels based upon the angles of incidence			
81	Non-transitory computer-readable storage media comprising instructions for: determining an angular adjustment profile based at least on: a level of ambient light detected by a sensor and a function of a value of the angle of incidence of the ambient light detected by the sensor			
82	adjusting using the angular adjustment profile			
83	adjusting the detected ambient light level to produce an adjusted ambient light level that compensates for the angle of incidence of ambient light			
84	and adjusting a brightness of a backlight based on the adjusted ambient light level			
85	determining an angular adjustment profile based at least on: a level of ambient light detected by a sensor and a function of a value of the angle of incidence of the ambient light detected by the sensor			
86	a level of ambient light detected by a sensor anda function of a value of the angle of incidence of the ambient light detected by the sensor			
87	adjusting using the angular adjustment profile			
88	adjusting the detected ambient light level to produce an adjusted ambient light level that compensates for the angle of incidence of ambient light			
89	andadjusting a brightness of a backlight based on the adjusted ambient light level			
90	The non-transitory computer-readable storage media of claim 17, comprising instructions for determining the adjusted ambient light level to be approximately equal to the detected ambient light level multiplied by the cosine of the angle of incidence of ambient light			
91	The non-transitory computer-readable storage media of claim 17, comprising instructions for determining the angular adjustment profile by determining the cosine of the angle of incidence of ambient light			
92	An electronic device, comprising: a display comprising a backlight			
93	an ambient light sensor configured to detect an ambient light level for one or more ambient light sources			
94	and a display controller operably coupled to the ambient light sensor and the backlight and configured to: determine a particular angular adjustment profile for the backlight			
95	wherein the angular adjustment profiles specifies angular-based adjustments to the brightness based on the detected ambient light angle to simulate a reflectivity associated with a hard copy material			
96	and adjust a brightness of the backlight based on the detected ambient light level based upon the particular angular adjustment profile			
97	a display comprising a backlight			
98	an ambient light sensor configured to detect an ambient light level for one or more ambient light sources			
99	anda display controller operably coupled to the ambient light sensor and the backlight and configured to: determine a particular angular adjustment profile for the backlight			
100	wherein the angular adjustment profiles specifies angular-based adjustments to the brightness based on the detected ambient light angle to simulate a reflectivity associated with a hard copy material			
101	and adjust a brightness of the backlight based on the detected ambient light level based upon the particular angular adjustment profile			
102	determine a particular angular adjustment profile for the backlight, wherein the angular adjustment profiles specifies angular-based adjustments to the brightness based on the detected ambient light angle to simulate a reflectivity associated with a hard copy material			
103	andadjust a brightness of the backlight based on the detected ambient light level based upon the particular angular adjustment profile			

104	The electronic device of claim 20, wherein the display controller is configured to determine the particular angular adjustment profile for the backlight from a selection of a particular hard copy material profile provided in a graphical user interface			
105	The electronic device of claim 20, wherein the particular hard copy material profile comprises a book profile and the particular angular adjustment profile specifies angular-based adjustments to simulate a reflectivity associated with a book			
106	The electronic device of claim 20, wherein the particular hard copy material profile comprises a newspaper profile and the particular angular adjustment profile specifies angular-based adjustments to simulate a reflectivity associated with a newspaper			
107	The electronic device of claim 20, wherein the display controller is configured to: detect whether an angular adjustment selection is selectively enabled			
108	and adjust a brightness of the backlight based on the detected ambient light level based upon the particular angular adjustment profile only when the angular adjustment setting is selectively enabled			
109	detect whether an angular adjustment selection is selectively enabled			
110	andadjust a brightness of the backlight based on the detected ambient light level based upon the particular angular adjustment profile only when the angular adjustment setting is selectively enabled			

专利US9495915B1与该创新性描述的比对报告

序号	专利US9495915B1	技术特征相似度	序号	该创新性描述
1	Techniques and apparatuses are disclosed to adjust an intensity of light emitted from front lights and/or to adjust a visual representation of content displayed by an electronic device based at least in part on a measurement of light intensity by a light sensor			
2	An electronic display may present a visual representation of objects including text and images, which may be subject to changes in size and contrast due to the measured levels of ambient light			
3	A display controller may also control activation and/or intensity of lights used to illuminate the electronic display based on the measurement of light intensity by the light sensor in addition to or separate from the adjustments to contrast and size of the content			
	权利要求			
4	A system comprising: one or more processors			
5	a light sensor to measure a light intensity of ambient light			
6	a temperature sensor to measure temperature			
7	a reflective light display to render a visual presentation of a content			
8	a front light assembly to emit light on a front side of the reflective light display, the front light assembly including a plurality of lights and light piping, the light piping to evenly disperse the light from the plurality of lights onto the front side of the reflective light display			
9	and memory to store instructions that, when executed on the one or more processors, are operable to: receive a user input associating a contrast level of a plurality of contrast levels to at least one predetermined ambient light intensity			
10	receive a light intensity value that is measured by the light sensor			
11	turn on and incrementally increase or incrementally decrease light output from a subset but not all of the plurality of lights to provide a substantially uniform light intensity over the reflective light display, the light output based at least in part on the light intensity value			
12	receive an ambient temperature value that is measured by the temperature sensor			
13	determine a waveform from a display profile based at least in part on the light intensity value, the ambient temperature value, and the user input, the waveform being configured to adjust a contrast of the content rendered on the reflective light display			
14	and adjust the contrast of the content rendered on the reflective light display using the waveform			
15	one or more processors			
16	a light sensor to measure a light intensity of ambient light			
17	a temperature sensor to measure temperature			
18	a reflective light display to render a visual presentation of a content			
19	a front light assembly to emit light on a front side of the reflective light display, the front light assembly including a plurality of lights and light piping, the light piping to evenly disperse the light from the plurality of lights onto the front side of the reflective light display			
20	and memory to store instructions that, when executed on the one or more processors, are operable to: receive a user input associating a contrast level of a plurality of contrast levels to at least one predetermined ambient light intensity			
21	receive a light intensity value that is measured by the light sensor			
22	turn on and incrementally increase or incrementally decrease light output from a subset but not all of the plurality of lights to provide a substantially uniform light intensity over the reflective light display, the light output based at least in part on the light intensity value			
23	receive an ambient temperature value that is measured by the temperature sensor			
24	determine a waveform from a display profile based at least in part on the light intensity value, the ambient temperature value, and the user input, the waveform being configured to adjust a contrast of the content rendered on the reflective light display			
25	and adjust the contrast of the content rendered on the reflective light display using the waveform			
26	receive a user input associating a contrast level of a plurality of contrast levels to at least one predetermined ambient light intensity			
27	receive a light intensity value that is measured by the light sensor			
28	turn on and incrementally increase or incrementally decrease light output from a subset but not all of the plurality of lights to provide a substantially uniform light intensity over the reflective light display, the light output based at least in part on the light intensity value			
29	receive an ambient temperature value that is measured by the temperature sensor			
30	determine a waveform from a display profile based at least in part on the light intensity value, the ambient temperature value, and the user input, the waveform being configured to adjust a contrast of the content rendered on the reflective light display			
31	and adjust the contrast of the content rendered on the reflective light display using the waveform			
32	The system as recited in claim 1, wherein receiving the light intensity value that is measured by the light sensor occurs on a continual basis			
33	The system as recited in claim 1, wherein the reflective light display is an electronic ink display			
34	The system as recited in claim 1, wherein the front light assembly removably couples to the reflective light display			
35	The system as recited in claim 1, wherein: the reflective light display renders the visual presentation of the content using electronic ink			
36	and the waveform is implemented as a numerical value that is based at least in part on a viscosity of the electronic ink			
37	the reflective light display renders the visual presentation of the content using electronic ink			
38	and the waveform is implemented as a numerical value that is based at least in part on a viscosity of the electronic ink			
39	The system as recited in claim 1, wherein the light intensity value is an average light intensity measured over a predetermined period of time			
40	The system as recited in claim 1, wherein the memory further stores instructions that, when executed on the one or more processors are operable to: receive an additional user input that associates an image size of a plurality of image sizes to the at least one predetermined ambient light intensity			
41	and adjust an image size of the content rendered on the reflective light display, based at least in part on the light intensity value and the additional user input			
42	receive an additional user input that associates an image size of a plurality of image sizes to the at least one predetermined ambient light intensity			
43	and adjust an image size of the content rendered on the reflective light display, based at least in part on the light intensity value and the additional user input			
44	An electronic device comprising: a light sensor to measure a light intensity of ambient light			
45	an electronic paper display configured to present a visual representation of a content by selectively moving particles through associated capsules			
46	a particle of the particles representing a pixel of the content and the associated capsules being aligned substantially perpendicular to a display surface of the electronic paper display			
47	a front light assembly to illuminate the electronic paper display, the front light assembly including a plurality of lights			
48	and a display controller in communication with at least the light sensor to: receive a light intensity value that is measured by the light sensor			
49	turn on and incrementally increase or incrementally decrease light output from a subset but not all of the plurality of lights to provide a substantially uniform light intensity over the display surface of the electronic paper display			
50	the light output based at least in part on the light intensity value			
51	determine a power consumption rate associated with a current use of the electronic device			
52	determine, based at least in part on the light intensity value that is measured by the light sensor, a waveform that controls movement of the particles to adjust a contrast of the visual representation of the content presented on the electronic paper display			
53	and adjust the contrast of the visual representation of the content presented on the electronic paper display using the waveform, and further based at least in part on the power consumption rate			
54	a light sensor to measure a light intensity of ambient light			
55	an electronic paper display configured to present a visual representation of a content by selectively moving particles through associated capsules			
56	a particle of the particles representing a pixel of the content and the associated capsules being aligned substantially perpendicular to a display surface of the electronic paper display			
57	a front light assembly to illuminate the electronic paper display, the front light assembly including a plurality of lights			
58	and a display controller in communication with at least the light sensor to: receive a light intensity value that is measured by the light sensor			
59	turn on and incrementally increase or incrementally decrease light output from a subset but not all of the plurality of lights to provide a substantially uniform light intensity over the display surface of the electronic paper display			
60	the light output based at least in part on the light intensity value			
61	determine a power consumption rate associated with a current use of the electronic device			
62	determine, based at least in part on the light intensity value that is measured by the light sensor, a waveform that controls movement of the particles to adjust a contrast of the visual representation of the content presented on the electronic paper display			
63	and adjust the contrast of the visual representation of the content presented on the electronic paper display using the waveform, and further based at least in part on the power consumption rate			
64	receive a light intensity value that is measured by the light sensor			
65	turn on and incrementally increase or incrementally decrease light output from a subset but not all of the plurality of lights to provide a substantially uniform light intensity over the display surface of the electronic paper display			
66	the light output based at least in part on the light intensity value			
67	determine a power consumption rate associated with a current use of the electronic device			
68	determine, based at least in part on the light intensity value that is measured by the light sensor, a waveform that controls movement of the particles to adjust a contrast of the visual representation of the content presented on the electronic paper display			
69	and adjust the contrast of the visual representation of the content presented on the electronic paper display using the waveform, and further based at least in part on the power consumption rate			
70	The electronic device as recited in claim 8, wherein the front light assembly comprises the plurality of lights surrounding light piping, the light piping located adjacent to an outward-facing side of the electronic paper display			
71	The electronic device as recited in claim 8, wherein the display controller adjusts an amount of light emitted by the front light assembly on a continual basis			
72	The electronic device as recited in claim 8, wherein the light sensor measures the light intensity of ambient light, partly in response to an expiration of a predetermined duration of time			
73	The electronic device as recited in claim 8			
74	wherein the front light assembly is offset from the electronic paper display such that a location of the front light assembly is adjustable with respect to the electronic paper display and such that the front light assembly is positioned to disperse light emitted from the front light assembly to cover at least a portion but not all of the electronic paper display			
75	A method comprising: measuring a light intensity of ambient light that is proximate to a display device to determine a first light intensity value			
76	the display device including a front light assembly to illuminate a front side of a reflective light display			
77	the front light assembly comprising a plurality of lights and light piping			
78	the light piping to evenly disperse the light from the plurality of lights onto the front side of the reflective light display			
79	turning on and incrementally increasing or decreasing light output from a subset but not all of the plurality of lights to provide a substantially uniform light intensity over the reflective light display, the light output based at least in part on the first light intensity value			
80	receiving a user input associating a contrast level of a plurality of contrast levels to at least one predetermined ambient light intensity			
81	measuring the light intensity of ambient light proximate to the display device to determine a second light intensity value			
82	and adjusting a contrast of a content rendered on the display device, based at least in part on the second light intensity value and based at least in part on the user input			
83	measuring a light intensity of ambient light that is proximate to a display device to determine a first light intensity value			
84	the display device including a front light assembly to illuminate a front side of a reflective light display			
85	the front light assembly comprising a plurality of lights and light piping			
86	the light piping to evenly disperse the light from the plurality of lights onto the front side of the reflective light display			
87	turning on and incrementally increasing or decreasing light output from a subset but not all of the plurality of lights to provide a substantially uniform light intensity over the reflective light display, the light output based at least in part on the first light intensity value			
88	receiving a user input associating a contrast level of a plurality of contrast levels to at least one predetermined ambient light intensity			
89	measuring the light intensity of ambient light proximate to the display device to determine a second light intensity value			
90	and adjusting a contrast of a content rendered on the display device, based at least in part on the second light intensity value and based at least in part on the user input			
91	The method as recited in claim 13, further comprising adjusting an image size of an object in the content rendered on the display device based at least in part on the light intensity of ambient light and at least partly in response to the user input			
92	The method as recited in claim 13			
93	wherein the adjusting the contrast of the content comprises decreasing the contrast of the content rendered on the display device in response to the light intensity of ambient light being more intense than a previous measurement of the light intensity of ambient light			
94	The method as recited in claim 13, further comprising, receiving a page turn request at the display device, wherein the page turn request is a signal generated in response to an additional user input			
95	and wherein adjusting the contrast of the content rendered on the display device is further based at least in part on the page turn request			
96	wherein adjusting the contrast of the content rendered on the display device is further based at least in part on the page turn request			
97	An apparatus comprising: a light sensor to measure a light intensity of ambient light			

98	a temperature sensor to measure temperature			
99	a reflective light display to render a visual representation of a content			
100	a front light assembly to illuminate a front side of the reflective light display, the front light assembly including a plurality of lights			
101	and a display controller in communication with the light sensor to: receive a first light intensity value that is measured by the light sensor			
102	turn on and incrementally increase or incrementally decrease light output from a subset but not all of the plurality of lights to provide a substantially uniform light intensity over the reflective light display, the light output based at least in part on the first light intensity value			
103	determine a power consumption rate associated with a current use of the apparatus			
104	receive a request for a new page or a next page of the content			
105	based at least partly on the request, receive a second light intensity value that is measured by the light sensor			
106	receive an ambient temperature value that is measured by the temperature sensor			
107	and determine a waveform for a display profile based at least in part on the second light intensity value, the ambient temperature value, and the power consumption rate, the waveform being configured to adjust a contrast of the content rendered on the reflective light display			
108	a light sensor to measure a light intensity of ambient light			
109	a temperature sensor to measure temperature			
110	a reflective light display to render a visual representation of a content			
111	a front light assembly to illuminate a front side of the reflective light display, the front light assembly including a plurality of lights			
112	and a display controller in communication with the light sensor to: receive a first light intensity value that is measured by the light sensor			
113	turn on and incrementally increase or incrementally decrease light output from a subset but not all of the plurality of lights to provide a substantially uniform light intensity over the reflective light display, the light output based at least in part on the first light intensity value			
114	determine a power consumption rate associated with a current use of the apparatus			
115	receive a request for a new page or a next page of the content			
116	based at least partly on the request, receive a second light intensity value that is measured by the light sensor			
117	receive an ambient temperature value that is measured by the temperature sensor			
118	and determine a waveform for a display profile based at least in part on the second light intensity value, the ambient temperature value, and the power consumption rate, the waveform being configured to adjust a contrast of the content rendered on the reflective light display			
119	receive a first light intensity value that is measured by the light sensor			
120	turn on and incrementally increase or incrementally decrease light output from a subset but not all of the plurality of lights to provide a substantially uniform light intensity over the reflective light display, the light output based at least in part on the first light intensity value			
121	determine a power consumption rate associated with a current use of the apparatus			
122	receive a request for a new page or a next page of the content			
123	based at least partly on the request, receive a second light intensity value that is measured by the light sensor			
124	receive an ambient temperature value that is measured by the temperature sensor			
125	and determine a waveform for a display profile based at least in part on the second light intensity value, the ambient temperature value, and the power consumption rate, the waveform being configured to adjust a contrast of the content rendered on the reflective light display			
126	The apparatus as recited in claim 17, further comprising a lens to direct light emitted from the plurality of lights onto the front side of the reflective light display			
127	The apparatus as recited in claim 18			
128	wherein the plurality of lights are located around at least a portion of a perimeter of the reflective light display			
129	and wherein the lens comprises light piping adjacent to the front side of the reflective light display			
130	the light piping to redirect light from the plurality of lights onto the reflective light display			
131	The apparatus of claim 17			
132	wherein the display controller is further configured to: receive a user input that associates a particular size of non-textual portions of the content with a predetermined ambient light intensity value			
133	the particular size being different from an initial size of the non-textual portions of the content			
134	and adjust the initial size of the non-textual portions of the content, based at least in part on the second light intensity value and the user input			
135	receive a user input that associates a particular size of non-textual portions of the content with a predetermined ambient light intensity value, the particular size being different from an initial size of the non-textual portions of the content			
136	and adjust the initial size of the non-textual portions of the content, based at least in part on the second light intensity value and the user input			

专利US20130100097A1与该创新性描述的比对报告

序号	专利US20130100097A1	技术特征相似度	序号	该创新性描述
	摘要			
1	This disclosure provides systems, methods and apparatus, including computer programs encoded on computer storage media, for controlling lighting of a display based on ambient light conditions			
2	In one aspect, a display device can include a display and an auxiliary light source configured to provide supplemental light to the display			
3	The display device further can include a sensor system configured to measure a diffuse illuminance of ambient light from a wide range of directions and configured to measure a directed illuminance of the ambient light from a relatively narrow range of directions			
4	The display device further can include a controller configured to adjust the auxiliary light source to provide an amount of supplemental light to the display			
5	The amount of supplemental light can be based at least in part on the measured directed illuminance and the measured diffuse illuminance of the ambient light			
	权利要求			
6	A display device comprising: a display			
7	an auxiliary light source configured to provide supplemental light to the display			
8	a sensor system configured to measure: a diffuse illuminance of ambient light from a wide range of directions			
9	and a directed illuminance of the ambient light from a relatively narrow range of directions			
10	and a controller in communication with the sensor system			
11	the controller configured to adjust the auxiliary light source to provide an amount of supplemental light to the display			
12	the amount of supplemental light based at least in part on the measured directed illuminance and the measured diffuse illuminance of the ambient light			
13	a displayan auxiliary light source configured to provide supplemental light to the display			
14	a displaya sensor system configured to measure: a diffuse illuminance of ambient light from a wide range of directions			
15	a display and a directed illuminance of the ambient light from a relatively narrow range of directions			
16	a display and a diffuse illuminance of ambient light from a wide range of directions			
17	a display anda directed illuminance of the ambient light from a relatively narrow range of directions			
18	anda controller in communication with the sensor system			
19	the controller configured to adjust the auxiliary light source to provide an amount of supplemental light to the display			
20	the amount of supplemental light based at least in part on the measured directed illuminance and the measured diffuse illuminance of the ambient light			
21	The display device of claim 1, wherein the display includes a reflective display			
22	The display device of claim 2, wherein the reflective display includes interferometric modulators			
23	The display device of claim 1, wherein the sensor system includes at least one sensor configured to sense ambient light from at least two directions			
24	The display device of claim 4, wherein the at least one sensor includes a diffuse light sensor configured to measure the diffuse illuminance and a directed light sensor configured to measure the directed illuminance			
25	The display device of claim 4, wherein the at least one sensor includes a plurality of directed light sensors, each directed light sensor configured to measure illuminance of the ambient light received within a solid angle around a direction, the solid angle substantially less than 2π steradians			
26	The display device of claim 1, wherein the controller is configured to adjust the auxiliary light source based at least in part on a ratio of the measured directed illuminance to the measured diffuse illuminance			
27	The display device of claim 1, wherein the controller is configured to adjust the auxiliary light source based at least in part on a sum of the measured directed illuminances and the measured diffuse illuminance			
28	The display device of claim 1, wherein the controller is configured to adjust the auxiliary light source based on a direction to a directed ambient light source			
29	The display device of claim 9, wherein the direction to the directed ambient light source is determined based at least in part on the directed illuminance and the diffuse illuminance measured by the sensor system			
30	The display device of claim 10, wherein the controller is configured to adjust the auxiliary light source based at least in part on a location of a viewer			
31	The display device of claim 1, further comprising: a processor that is configured to communicate with the display, the processor being configured to process image data			
32	and a memory device configured to communicate with the processor			
33	a processor that is configured to communicate with the display, the processor being configured to process image data			
34	anda memory device configured to communicate with the processor			
35	The display device of claim 12, further comprising: a driver circuit configured to send at least one signal to the display			
36	a driver circuit configured to send at least one signal to the display			
37	The display device of claim 13, further comprising: a driver controller configured to send at least a portion of the image data to the driver circuit			
38	a driver controller configured to send at least a portion of the image data to the driver circuit			
39	The display device of claim 12, further comprising: an image source module configured to send the image data to the processor			
40	an image source module configured to send the image data to the processor			
41	The display device of claim 15, wherein the image source module includes at least one of a receiver, transceiver, and transmitter			
42	The display device of claim 12, further comprising: an input device configured to receive input data and to communicate the input data to the processor			
43	an input device configured to receive input data and to communicate the input data to the processor			
44	A display device comprising: a display			
45	an auxiliary light source			
46	means for sensing ambient light, the means for sensing ambient light configured to measure a diffuse illuminance of the ambient light from a wide range of directions and configured to measure a directed illuminance of the ambient light from a relatively narrow range of directions			
47	and a controller in communication with the means for sensing ambient light, the controller configured to adjust the auxiliary light source based at least in part on the measured directed illuminance and the measured diffuse illuminance of the ambient light			
48	a displayan auxiliary light source			
49	a displaymeans for sensing ambient light, the means for sensing ambient light configured to measure a diffuse illuminance of the ambient light from a wide range of directions and configured to measure a directed illuminance of the ambient light from a relatively narrow range of directions			
50	a display anda controller in communication with the means for sensing ambient light, the controller configured to adjust the auxiliary light source based at least in part on the measured directed illuminance and the measured diffuse illuminance of the ambient light			
51	The display device of claim 18, wherein the display includes a reflective display			
52	The display device of claim 19, wherein the reflective display includes interferometric modulators			
53	The display device of claim 18, wherein the auxiliary light source includes a front-light			
54	The display device of claim 18, wherein the means for sensing ambient light includes at least one sensor configured to sense ambient light from at least two directions			
55	The display device of claim 22, wherein the at least one sensor includes a diffuse light sensor configured to measure the diffuse illuminance and a directed light sensor configured to measure the directed illuminance			
56	The display device of claim 22, wherein the at least one sensor includes a plurality of directed light sensors, each directed light sensor configured to measure illuminance of the ambient light received within a solid angle around a direction, the solid angle substantially less than 2π steradians			
57	The display device of claim 18, wherein the controller is configured to adjust the auxiliary light source based at least in part on a ratio of the measured directed illuminance to the measured diffuse illuminance			
58	The display device of claim 18, wherein the controller is configured to adjust the auxiliary light source based at least in part on a sum of the measured directed illuminances and the measured diffuse illuminance			
59	The display device of claim 18, wherein the controller is configured to adjust the auxiliary light source based on a direction to a directed ambient light source			
60	The display device of claim 27, wherein the controller is configured to adjust the auxiliary light source based on a location of a viewer			
61	A method of controlling lighting of a display of a display device			
62	the display device having an auxiliary light source configured to provide supplemental light to the display			
63	the display device having a diffuse light sensor and a directed light sensor			
64	the method comprising: measuring			
65	via the diffuse light sensor			
66	a diffuse illuminance of ambient light from a wide range of directions			
67	measuring, via the directed light sensor, a directed illuminance of the ambient light from a relatively narrow range of directions			
68	and adjusting, via execution of instructions by a hardware processor, the auxiliary light source based at least in part on the measured directed illuminance and the measured diffuse illuminance of the ambient light			
69	measuring, via the diffuse light sensor, a diffuse illuminance of ambient light from a wide range of directions			
70	measuring, via the directed light sensor, a directed illuminance of the ambient light from a relatively narrow range of directions			
71	andadjusting, via execution of instructions by a hardware processor, the auxiliary light source based at least in part on the measured directed illuminance and the measured diffuse illuminance of the ambient light			
72	The method of claim 29, wherein adjusting the auxiliary light source includes adjusting the auxiliary light source based at least in part on a ratio of the measured directed illuminance to the measured diffuse illuminance			
73	The method of claim 29, wherein adjusting the auxiliary light source includes adjusting the auxiliary light source based at least in part on a sum of the measured directed illuminances and the measured diffuse illuminance			
74	The method of claim 29, wherein adjusting the auxiliary light source is based on a direction to a directed ambient light source			
75	The method of claim 32, wherein adjusting the auxiliary light source is based on a location of a viewer			
76	A non-transitory tangible computer storage medium having stored thereon instructions for controlling lighting of a display of a display device			
77	the instructions when executed by a computing system			
78	the instructions causing the computing system to perform operations comprising: receiving from a computer-readable medium a measurement of a directed illuminance of ambient light from a relatively narrow range of directions			
79	receiving from a computer-readable medium a measurement of a diffuse illuminance of ambient light from a wide range of directions			
80	determining additional lighting conditions based at least in part on the measurement of the directed illuminance and the measurement of the diffuse illuminance of the ambient light			
81	and transmitting a lighting adjustment based at least in part on the additional lighting conditions to a light source configured to provide light to the display			
82	receiving from a computer-readable medium a measurement of a directed illuminance of ambient light from a relatively narrow range of directions			
83	receiving from a computer-readable medium a measurement of a diffuse illuminance of ambient light from a wide range of directions			
84	determining additional lighting conditions based at least in part on the measurement of the directed illuminance and the measurement of the diffuse illuminance of the ambient light			
85	andtransmitting a lighting adjustment based at least in part on the additional lighting conditions to a light source configured to provide light to the display			
86	The non-transitory tangible computer storage medium of claim 34, wherein receiving the diffuse illuminance of ambient light includes receiving a plurality of directed illuminances for different directions			
87	The non-transitory tangible computer storage medium of claim 34, wherein determining additional lighting conditions includes accessing a lookup table that correlates diffuse illuminance with a ratio of directed illuminance to the diffuse illuminance			
88	The non-transitory tangible computer storage medium of claim 34, wherein determining additional lighting conditions includes accessing a formula that correlates diffuse illuminance with a ratio of directed illuminance to the diffuse illuminance			
89	The non-transitory tangible computer storage medium of claim 34, wherein determining additional lighting conditions includes accessing a formula that is based at least in part on a sum of the measured directed illuminances and the measured diffuse illuminance			

专利US20140104436A1与该创新性描述的比对报告				
序号	专利US20140104436A1	技术特征相似度	序号	该创新性描述
	摘要			
1	A display device to measure ambient light brightness may include a camera to provide an image			
2	a controller to detect a face from the image and to measure brightness from a ratio of the iris diameter to the pupil diameter Di/DP			
3	and an actuator to stepwise change the backlighting of the display device based upon the measured brightness			
	权利要求:			
4	[canceled] 5) A display device to measure ambient light brightness, comprising: a camera to provide an image			
5	a controller to measure brightness from a ratio of the iris diameter to the pupil diameter Di/DP			
6	a camera to provide an image			
7	a controller to measure brightness from a ratio of the iris diameter to the pupil diameter Di/DP			
8	6) A display device to measure ambient light brightness as in claim 5, wherein the controller turns off the display device if a face is not detected			
9	7) A display device to measure ambient light brightness as in claim 5, wherein the measured brightness is compared with respect to a predetermined brightness			
10	8) A display device to measure ambient light brightness as in claim 5, wherein the display device includes an actuator to stepwise change the backlighting of the display device based upon the measured brightness			
11	9) A display device to measure ambient light brightness as in claim 8, wherein the actuator changes the backlighting of the display device if the measured brightness is more than two increments from the predetermined brightness			
12	10) A display device to measure ambient light brightness as in claim 5, wherein the controller detects a face from the image			
13	11) A display device to measure ambient light brightness as in claim 5, wherein the display device includes an infrared light emitting diode light source and the camera is sensitive to the infrared light emitting diode light			
14	12) A display device to measure ambient light brightness as in claim 5, wherein the display device includes a ambient light sensor			
15	13) A display device to measure ambient light brightness as in claim 12, wherein the controller compares the brightness from the ambient light sensor and the brightness based upon the pupil diameter to determine if the pupil of the user is responsive to light			
16	14) A display device to measure ambient light brightness as in claim 13, wherein the controller activates the display device to transmit a signal when the comparison between the brightness from the ambient light sensor and the brightness based upon the pupil diameter exceeds a predetermined level			
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