

## Luminaire Property

Luminaire: RH-MSD12 12W 4000K

Report NO.:

Voltage: 220.3 V

Test NO.:

Current: 0.067 A

Lamp:

Power: 14.4 W

Sum Lumens: 1033.35 lm

Power Factor: 0.975

Number of Lamps: 1

Ballast Type: EMC300mA

Diameter: mm

Width: 170mm

Length: 170mm

Height: 38mm

Photometric Type: Type C

Remark: PMMA+0.5w SMD2835

## Photometric Results

Lumens: 1033.35 lm

Angle of maximum intensity: C:0.0 G:1.0

Effective luminous flux: 1017.42 lm

Half Peak Side Angle(50%): Left: -53.5 Right:52.9

Efficiency: 71.7604 lm/W

Light Out Rate(LOR) : 100.00%

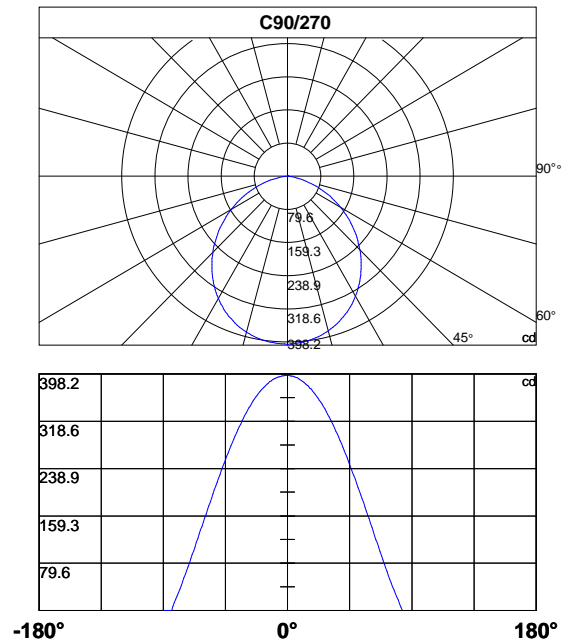
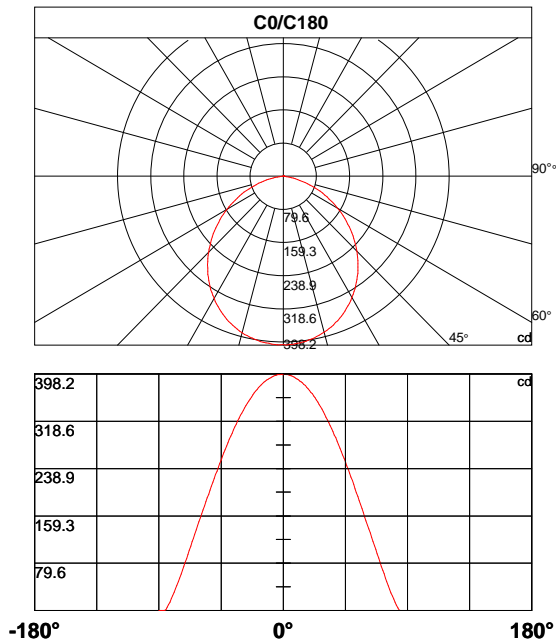
Central Intensity: 396.813cd

Up Flux Rate: 0.0%

Maximum Intensity: 398.193cd

Down Flux Rate: 100.0%

Beam Angle(10%): Left: -77.4 Right:76.3



### Photometric Data Table [cd]

C\G	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0
<b>0.0</b>	396.8	398.2	397.2	397.3	396.6	395.8	395.1	393.9	392.9	391.5
<b>45.0</b>	396.8	395.4	395.2	394.7	394.3	393.2	392.4	391.6	390.1	388.7
<b>90.0</b>	396.8	395.4	395.2	394.7	394.3	393.2	392.4	391.6	390.1	388.7
<b>135.0</b>	396.8	398.0	397.4	397.3	397.1	395.8	395.4	394.7	393.6	392.2
<b>180.0</b>	396.8	398.0	397.4	397.3	397.1	395.8	395.4	394.7	393.6	392.2
<b>225.0</b>	396.8	395.5	395.4	395.2	394.9	394.2	393.6	392.8	391.6	390.7
<b>270.0</b>	396.8	395.5	395.4	395.2	394.9	394.2	393.6	392.8	391.6	390.7
<b>315.0</b>	396.8	398.2	397.2	397.3	396.6	395.8	395.1	393.9	392.9	391.5
<b>360.0</b>	396.8	398.2	397.2	397.3	396.6	395.8	395.1	393.9	392.9	391.5

C\G	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	19.0
<b>0.0</b>	389.9	388.6	386.7	384.9	383.1	380.7	378.8	375.6	373.4	370.5
<b>45.0</b>	387.3	385.5	384.0	381.8	379.6	377.7	374.9	372.9	369.8	367.3
<b>90.0</b>	387.3	385.5	384.0	381.8	379.6	377.7	374.9	372.9	369.8	367.3
<b>135.0</b>	391.0	389.2	388.1	385.7	384.4	382.0	380.0	377.5	374.9	372.1
<b>180.0</b>	391.0	389.2	388.1	385.7	384.4	382.0	380.0	377.5	374.9	372.1
<b>225.0</b>	389.6	388.5	386.5	385.1	382.3	381.1	378.4	376.4	374.2	371.5
<b>270.0</b>	389.6	388.5	386.5	385.1	382.3	381.1	378.4	376.4	374.2	371.5
<b>315.0</b>	389.9	388.6	386.7	384.9	383.1	380.7	378.8	375.6	373.4	370.5
<b>360.0</b>	389.9	388.6	386.7	384.9	383.1	380.7	378.8	375.6	373.4	370.5

C\G	20.0	21.0	22.0	23.0	24.0	25.0	26.0	27.0	28.0	29.0
<b>0.0</b>	367.2	364.9	361.3	358.2	354.6	350.8	346.5	343.1	338.9	334.9
<b>45.0</b>	364.4	360.6	357.8	353.9	351.0	347.6	343.4	339.2	335.0	330.7
<b>90.0</b>	364.4	360.6	357.8	353.9	351.0	347.6	343.4	339.2	335.0	330.7
<b>135.0</b>	369.1	366.6	363.3	359.8	355.9	352.6	349.4	345.1	341.1	337.0
<b>180.0</b>	369.1	366.6	363.3	359.8	355.9	352.6	349.4	345.1	341.1	337.0
<b>225.0</b>	368.7	365.6	362.3	359.6	356.0	352.6	348.9	344.6	341.4	337.0
<b>270.0</b>	368.7	365.6	362.3	359.6	356.0	352.6	348.9	344.6	341.4	337.0
<b>315.0</b>	367.2	364.9	361.3	358.2	354.6	350.8	346.5	343.1	338.9	334.9
<b>360.0</b>	367.2	364.9	361.3	358.2	354.6	350.8	346.5	343.1	338.9	334.9

C\G	30.0	31.0	32.0	33.0	34.0	35.0	36.0	37.0	38.0	39.0
<b>0.0</b>	330.3	325.6	320.6	316.4	311.5	306.1	301.3	295.4	290.9	285.1
<b>45.0</b>	326.3	322.0	317.2	312.1	306.9	302.1	297.2	292.2	286.1	280.8
<b>90.0</b>	326.3	322.0	317.2	312.1	306.9	302.1	297.2	292.2	286.1	280.8
<b>135.0</b>	332.0	328.7	323.8	319.3	313.9	308.9	304.0	298.3	293.9	288.3
<b>180.0</b>	332.0	328.7	323.8	319.3	313.9	308.9	304.0	298.3	293.9	288.3
<b>225.0</b>	332.6	328.2	323.5	318.9	313.8	309.5	304.4	299.1	293.5	288.1
<b>270.0</b>	332.6	328.2	323.5	318.9	313.8	309.5	304.4	299.1	293.5	288.1
<b>315.0</b>	330.3	325.6	320.6	316.4	311.5	306.1	301.3	295.4	290.9	285.1
<b>360.0</b>	330.3	325.6	320.6	316.4	311.5	306.1	301.3	295.4	290.9	285.1

### Photometric Data Table [cd]

C\G	40.0	41.0	42.0	43.0	44.0	45.0	46.0	47.0	48.0	49.0
0.0	279.5	273.6	267.7	261.8	256.3	250.3	243.6	237.5	231.3	224.5
45.0	275.0	269.5	264.3	257.9	251.7	245.5	239.0	232.5	227.3	220.9
90.0	275.0	269.5	264.3	257.9	251.7	245.5	239.0	232.5	227.3	220.9
135.0	282.3	276.9	270.8	265.8	259.5	253.4	247.5	240.8	234.4	229.0
180.0	282.3	276.9	270.8	265.8	259.5	253.4	247.5	240.8	234.4	229.0
225.0	283.2	277.2	271.4	265.9	259.5	253.3	248.0	241.6	235.4	228.3
270.0	283.2	277.2	271.4	265.9	259.5	253.3	248.0	241.6	235.4	228.3
315.0	279.5	273.6	267.7	261.8	256.3	250.3	243.6	237.5	231.3	224.5
360.0	279.5	273.6	267.7	261.8	256.3	250.3	243.6	237.5	231.3	224.5

C\G	50.0	51.0	52.0	53.0	54.0	55.0	56.0	57.0	58.0	59.0
0.0	218.7	212.5	205.1	198.5	191.7	185.1	178.6	171.4	165.0	157.3
45.0	214.1	207.5	200.7	194.7	188.0	181.4	174.0	167.5	160.3	154.7
90.0	214.1	207.5	200.7	194.7	188.0	181.4	174.0	167.5	160.3	154.7
135.0	222.2	216.1	209.2	202.6	195.8	189.8	183.3	176.4	169.3	162.5
180.0	222.2	216.1	209.2	202.6	195.8	189.8	183.3	176.4	169.3	162.5
225.0	222.2	215.5	209.8	203.3	196.0	189.4	182.5	176.5	169.5	162.4
270.0	222.2	215.5	209.8	203.3	196.0	189.4	182.5	176.5	169.5	162.4
315.0	218.7	212.5	205.1	198.5	191.7	185.1	178.6	171.4	165.0	157.3
360.0	218.7	212.5	205.1	198.5	191.7	185.1	178.6	171.4	165.0	157.3

C\G	60.0	61.0	62.0	63.0	64.0	65.0	66.0	67.0	68.0	69.0
0.0	150.7	143.2	137.3	130.4	122.8	116.3	109.0	102.7	95.3	88.3
45.0	147.3	140.2	133.3	125.8	119.1	113.1	106.2	99.2	91.9	85.4
90.0	147.3	140.2	133.3	125.8	119.1	113.1	106.2	99.2	91.9	85.4
135.0	156.3	149.6	142.5	135.6	128.2	121.1	115.5	108.4	101.5	94.3
180.0	156.3	149.6	142.5	135.6	128.2	121.1	115.5	108.4	101.5	94.3
225.0	155.5	148.8	141.6	135.7	128.5	121.4	114.6	106.9	100.3	94.5
270.0	155.5	148.8	141.6	135.7	128.5	121.4	114.6	106.9	100.3	94.5
315.0	150.7	143.2	137.3	130.4	122.8	116.3	109.0	102.7	95.3	88.3
360.0	150.7	143.2	137.3	130.4	122.8	116.3	109.0	102.7	95.3	88.3

C\G	70.0	71.0	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0
0.0	81.4	74.5	67.5	61.6	54.6	48.3	41.6	35.6	29.6	24.2
45.0	79.1	72.4	65.8	58.6	52.6	46.2	39.8	34.6	28.6	23.4
90.0	79.1	72.4	65.8	58.6	52.6	46.2	39.8	34.6	28.6	23.4
135.0	87.3	80.8	74.4	67.9	61.5	54.4	48.4	41.9	36.5	30.7
180.0	87.3	80.8	74.4	67.9	61.5	54.4	48.4	41.9	36.5	30.7
225.0	87.5	80.3	73.5	67.0	61.0	54.8	48.0	41.6	35.8	29.8
270.0	87.5	80.3	73.5	67.0	61.0	54.8	48.0	41.6	35.8	29.8
315.0	81.4	74.5	67.5	61.6	54.6	48.3	41.6	35.6	29.6	24.2
360.0	81.4	74.5	67.5	61.6	54.6	48.3	41.6	35.6	29.6	24.2

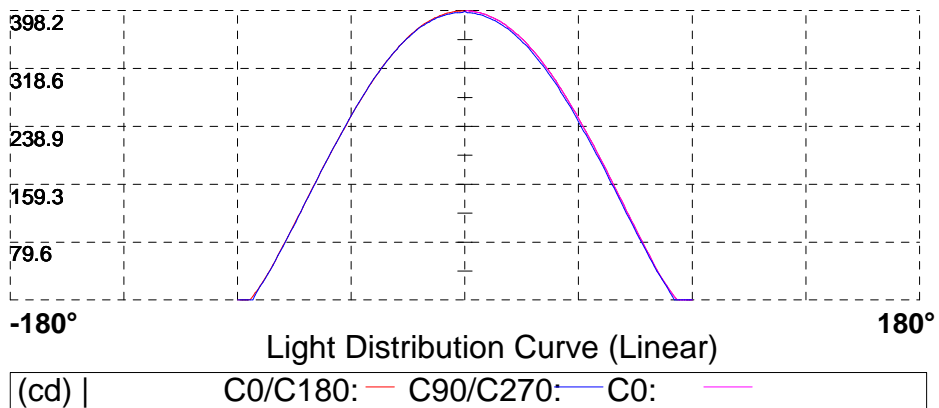
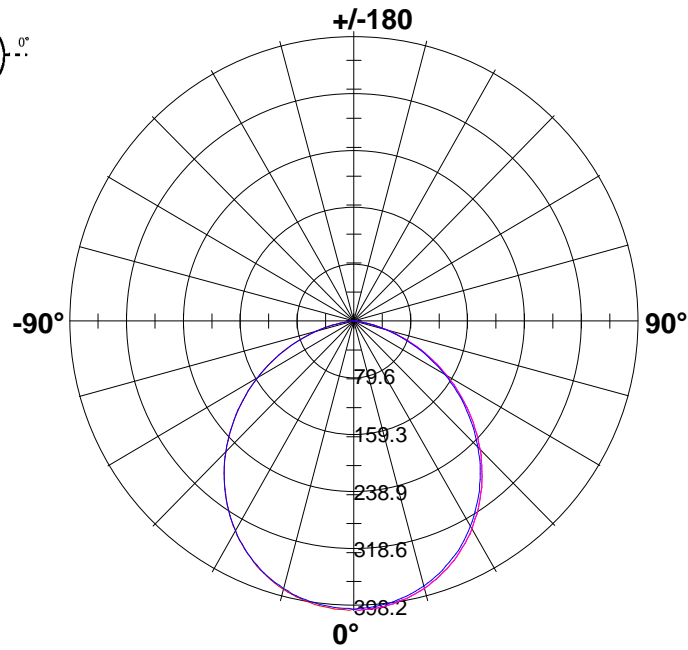
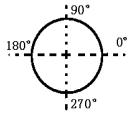
### Photometric Data Table [cd]

C\G	80.0	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	19.4	14.0	9.0	4.4	0.6	0.0	0.0	0.0	0.0	0.0
45.0	17.7	11.3	5.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90.0	17.7	11.3	5.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135.0	24.8	19.7	14.1	9.8	5.0	0.8	0.0	0.0	0.0	0.0
180.0	24.8	19.7	14.1	9.8	5.0	0.8	0.0	0.0	0.0	0.0
225.0	24.1	19.4	13.0	6.9	0.2	0.0	0.0	0.0	0.0	0.0
270.0	24.1	19.4	13.0	6.9	0.2	0.0	0.0	0.0	0.0	0.0
315.0	19.4	14.0	9.0	4.4	0.6	0.0	0.0	0.0	0.0	0.0
360.0	19.4	14.0	9.0	4.4	0.6	0.0	0.0	0.0	0.0	0.0

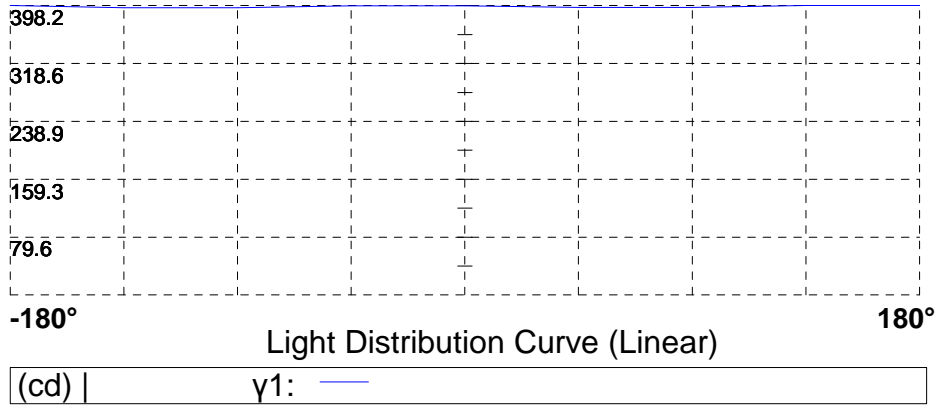
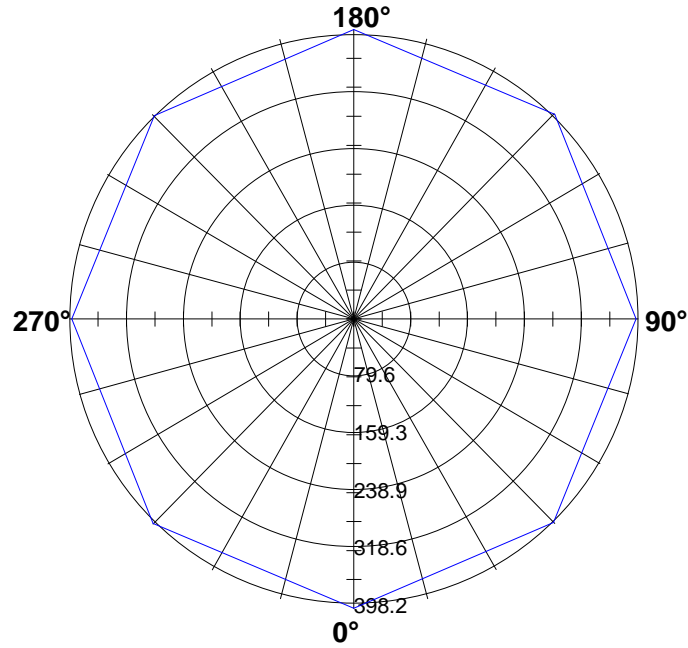
C\G	90.0
0.0	0.0
45.0	0.0
90.0	0.0
135.0	0.0
180.0	0.0
225.0	0.0
270.0	0.0
315.0	0.0
360.0	0.0

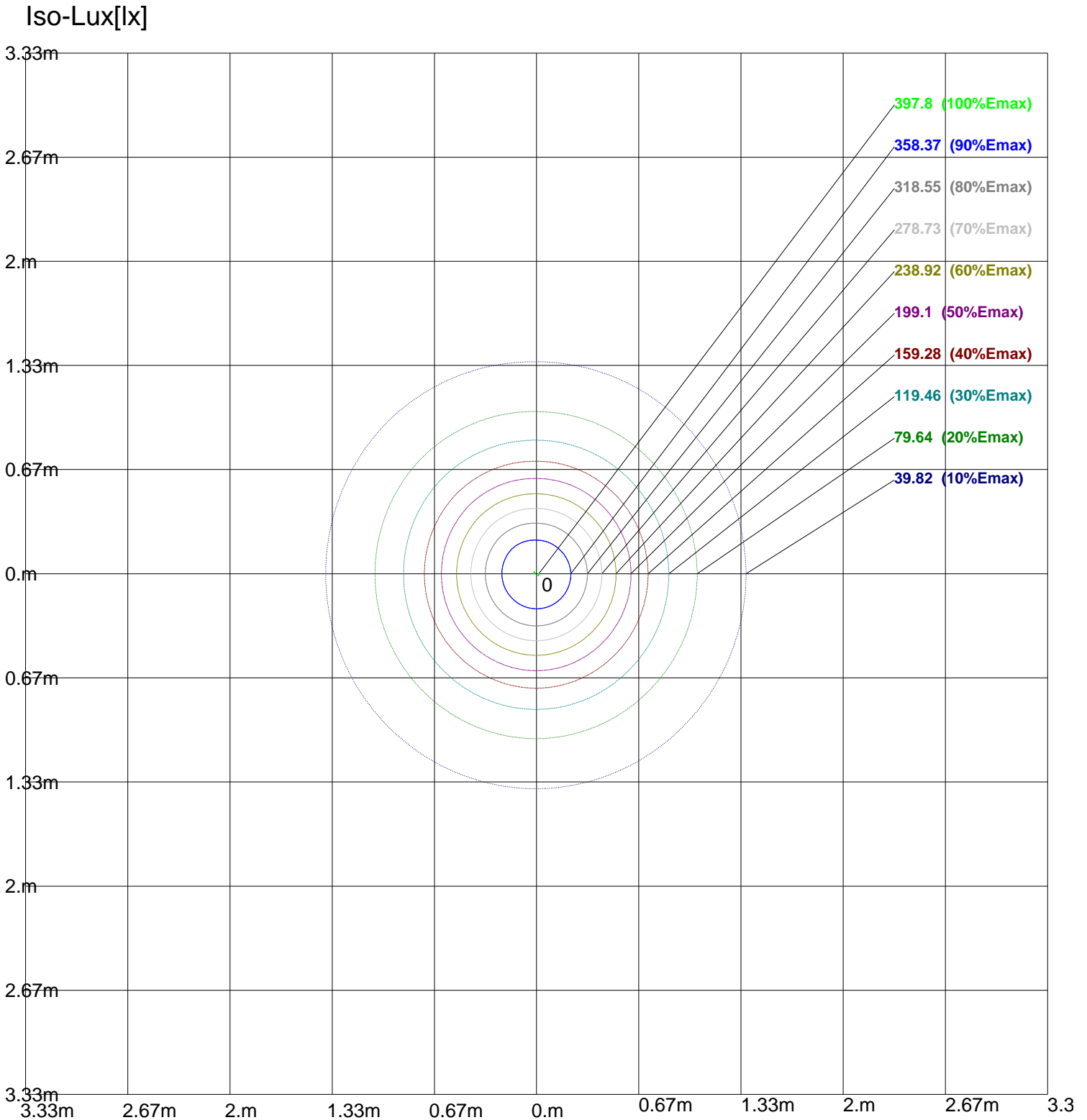
Light Distribution Curve [Unit: cd]

Luminaire



### Max Plane Light Distribution Curve [Unit: cd]





Height: 1 m  
Max Illuminance : 398.19lx

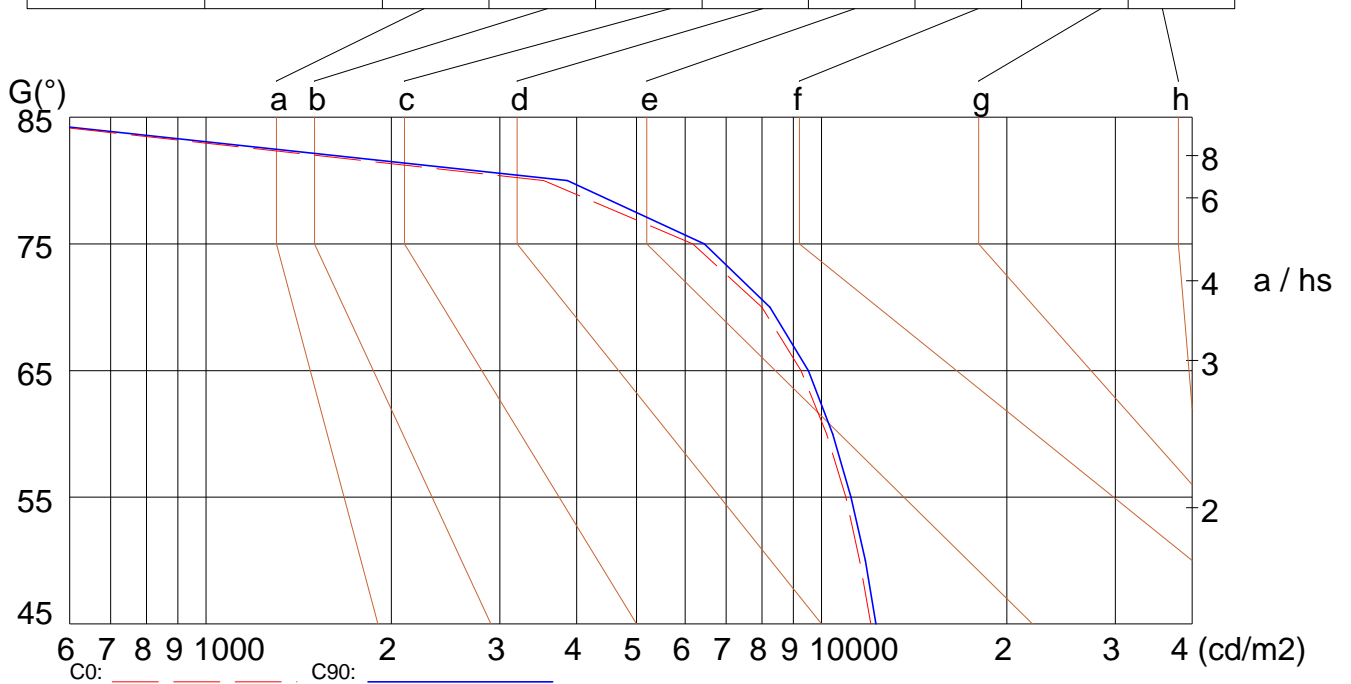
## Luminance Limiting Curve

Diameter: mm  
 Length: 170mm  
 Width: 170mm  
 Height: 38mm

(cd/m<sup>2</sup>)

$\gamma$	45°	50°	55°	60°	65°	70°	75°	80°	85°
C0	12013	11525	10945	10193	9259	8006	6179	3535	
C90	12248	11773	11167	10426	9518	8239	6452	3861	

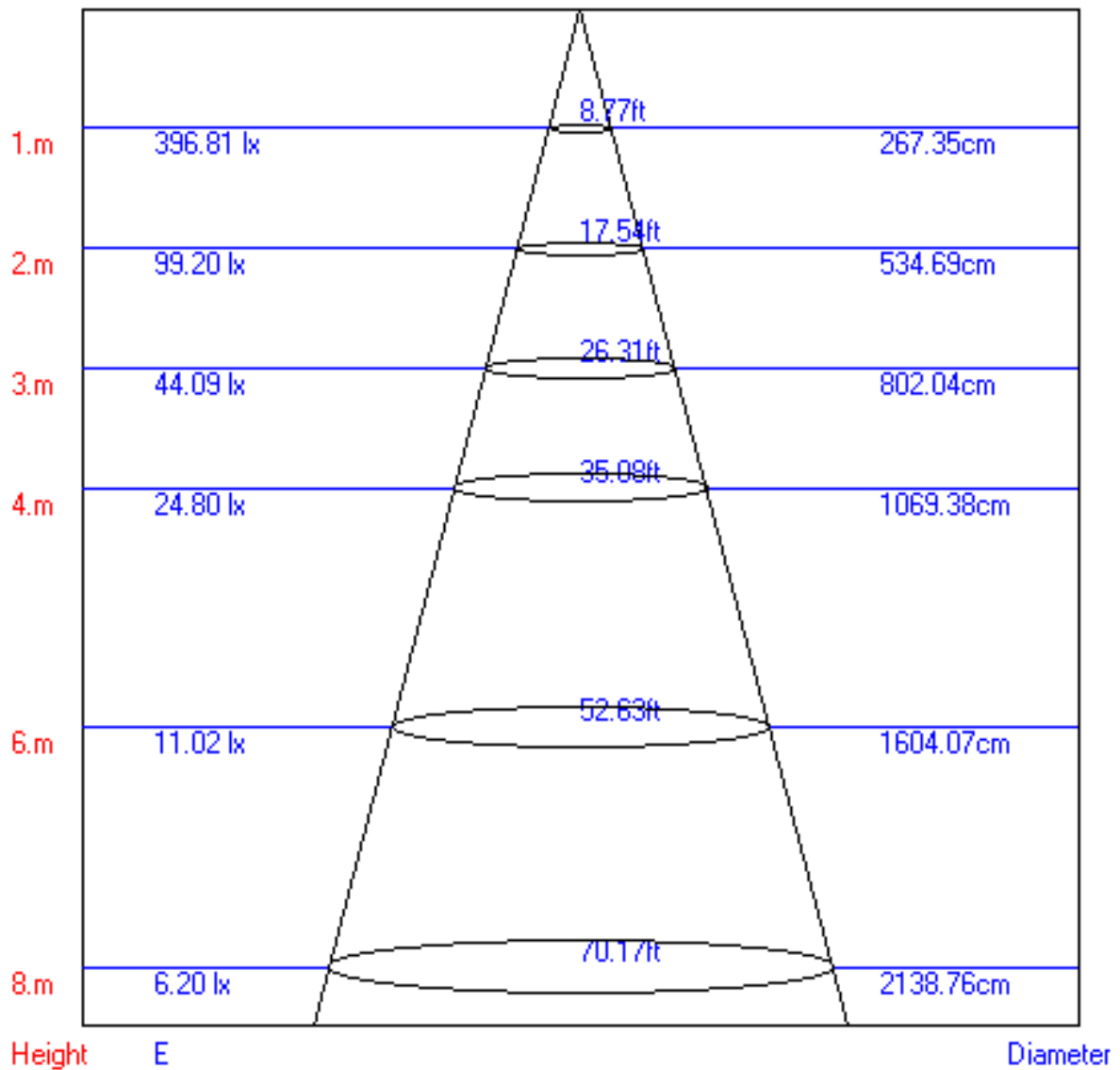
Glare	Quality	Service Values Illuminance (lx)							
1.15	A	2000	1000	500	≤300				
1.5	B		2000	1000	500	≤300			
1.85	C			2000	1000	500	≤300		
2.2	D				2000	1000	500	≤300	
2.55	E					2000	1000	500	≤300



Lum. Limiting Curve (C0/C90)



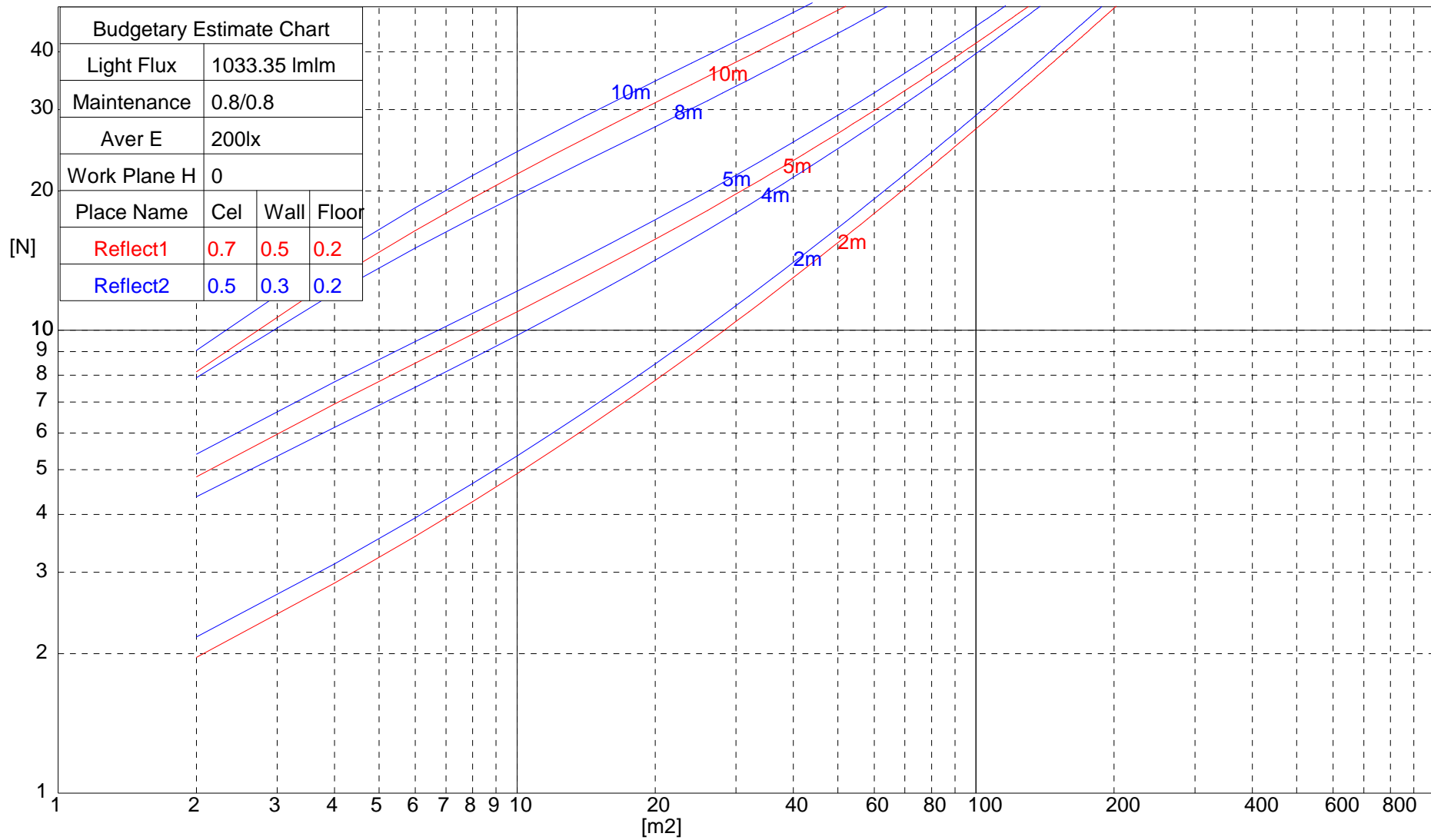
### Lux-Distance Curve



Beam Angle:106.40°

Utilization Coefficient Table

RHOCC	80			70			50			30			10			0
RHOW	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	COEFFICIENTS OF UTILIZATION FOR RHOFC=20															
0	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
1	1.06	1.05	1.03	1.05	1.03	1.01	1.01	0.99	0.97	0.96	0.94	0.92	0.90	0.87	0.85	0.80
2	0.91	0.89	0.87	0.90	0.87	0.85	0.88	0.85	0.82	0.84	0.81	0.78	0.80	0.76	0.72	0.68
3	0.78	0.76	0.74	0.78	0.75	0.72	0.77	0.73	0.69	0.74	0.70	0.66	0.71	0.66	0.62	0.57
4	0.68	0.65	0.63	0.68	0.65	0.62	0.68	0.63	0.60	0.66	0.61	0.57	0.64	0.58	0.53	0.49
5	0.60	0.57	0.55	0.60	0.56	0.54	0.60	0.55	0.52	0.59	0.54	0.49	0.58	0.52	0.47	0.43
6	0.53	0.50	0.48	0.53	0.50	0.47	0.54	0.49	0.45	0.54	0.48	0.43	0.53	0.46	0.41	0.38
7	0.47	0.44	0.43	0.48	0.44	0.42	0.49	0.44	0.40	0.49	0.43	0.39	0.48	0.42	0.37	0.33
8	0.42	0.40	0.38	0.43	0.40	0.38	0.44	0.39	0.36	0.45	0.39	0.35	0.45	0.38	0.33	0.30
9	0.38	0.36	0.35	0.39	0.36	0.34	0.40	0.36	0.33	0.41	0.35	0.31	0.41	0.35	0.30	0.27
10	0.35	0.33	0.31	0.36	0.33	0.31	0.37	0.33	0.30	0.38	0.32	0.28	0.38	0.32	0.27	0.24



## UGR Glare Index

Ceiling	70	70	50	50	30	70	70	50	50	30	
Wall	50	30	50	30	30	50	30	50	30	30	
Floor	20	20	20	20	20	20	20	20	20	20	
Room Size X      Y	Weft to light axis direction of observation					Direction of light axis parallel observation					
2H	2H	14.7	16.0	14.9	15.9	16.5	14.7	15.9	14.8	16.0	16.5
	3H	16.3	17.4	16.7	17.9	17.9	16.2	17.4	16.4	17.8	18.0
	4H	16.9	18.1	17.4	18.7	18.8	16.9	18.1	17.3	18.5	18.8
	6H	17.6	18.5	18.0	18.9	18.9	17.4	18.3	17.8	18.9	19.0
	8H	17.8	18.9	18.1	19.0	19.3	17.7	18.7	17.9	19.0	19.3
4H	12H	17.9	18.8	18.1	19.2	19.5	17.7	18.7	18.1	19.2	19.6
	2H	15.7	16.6	15.9	16.8	17.0	15.6	16.6	15.8	16.9	17.0
	3H	17.5	18.4	17.7	18.4	18.8	17.3	18.2	17.6	18.3	18.7
	4H	18.3	18.9	18.5	19.1	19.5	18.0	18.9	18.4	19.1	19.6
	6H	18.8	19.5	19.1	19.8	20.2	18.7	19.5	18.9	19.7	20.0
8H	8H	19.0	19.7	19.4	20.0	20.3	19.0	19.5	19.3	20.0	20.3
	12H	19.2	19.8	19.7	20.0	20.5	19.1	19.8	19.5	20.1	20.5
	4H	18.5	19.2	18.8	19.4	19.8	18.5	19.1	18.7	19.4	19.8
	6H	19.3	19.8	19.8	20.2	20.6	19.2	19.7	19.6	20.2	20.5
	8H	19.8	20.2	20.2	20.5	20.9	19.6	20.0	20.1	20.4	21.0
12H	12H	20.0	20.4	20.4	20.9	21.1	19.8	20.3	20.3	20.8	21.2
	4H	18.6	19.2	19.1	19.6	19.8	18.5	19.0	18.9	19.4	19.8
	6H	19.5	20.0	19.9	20.2	20.7	19.4	19.9	19.8	20.2	20.6
	8H	19.9	20.3	20.4	20.5	21.1	19.8	20.2	20.3	20.6	21.0