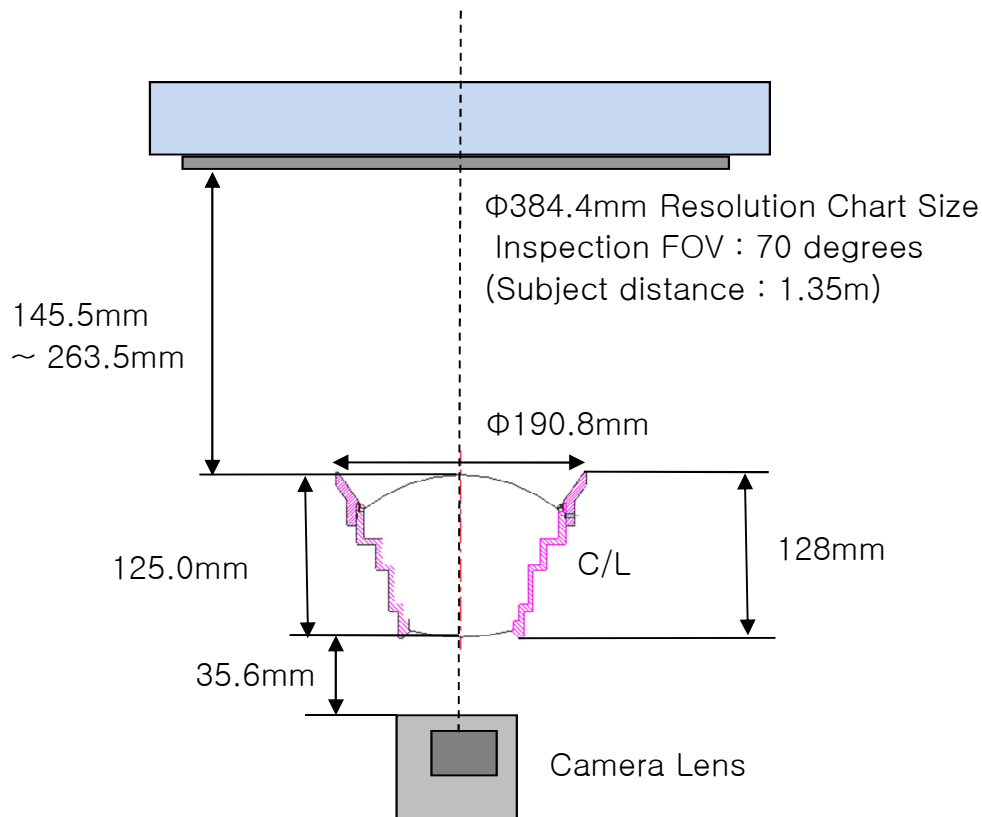


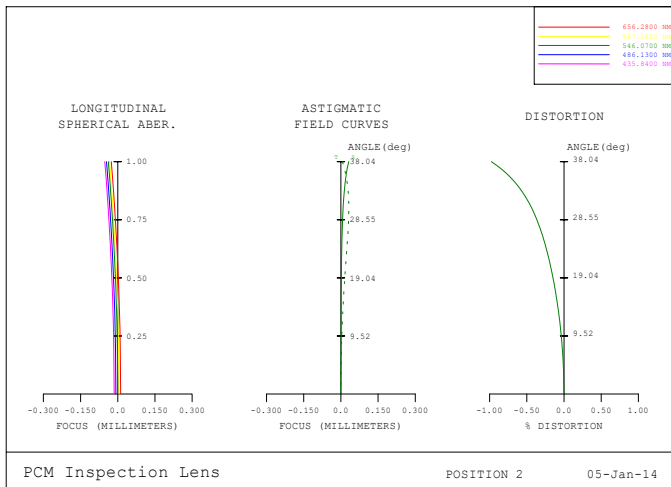
# CL-736 Collimator Lens Specification

2020-02-06  
OneStone

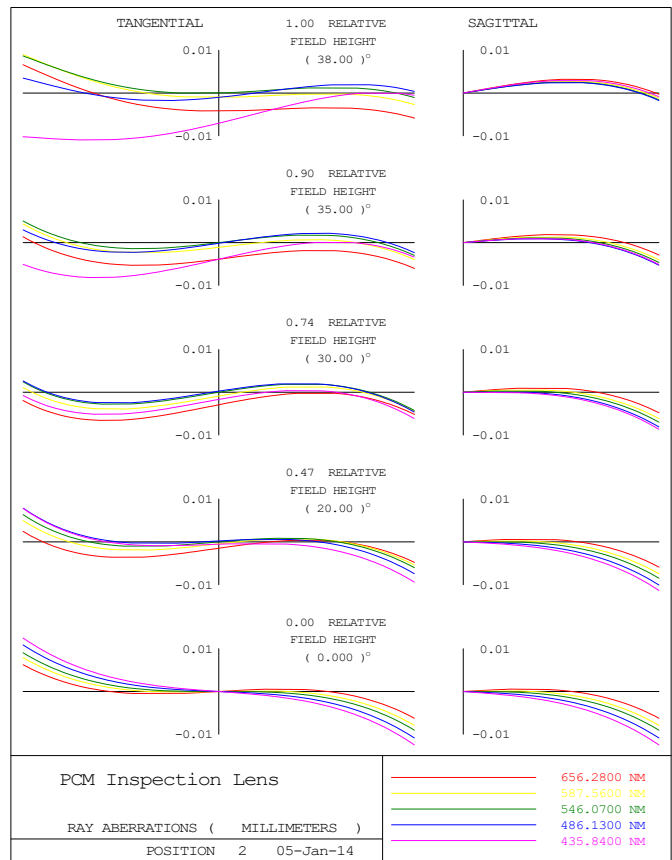
<b>Model name</b>	CL-736 (Designed by OneStone)
<b>Lens Composition</b>	5 Glass Lenses ( 2 HRI Glass )
<b>EFL</b>	415.1mm
<b>Inspectable FOV of CCM</b>	70 degrees
<b>Ass'y Size</b>	Φ 190.8mm X L 128mm , 3.48kg
<b>Exit Pupil Size</b>	<b>Φ15.0mm</b>
<b>Exit Pupil Position</b>	<b>35.6mm (from vertex C/L to CCM)</b>
<b>Working Distace (from C/L 1st Lens R1 surface to Chart)</b>	263.5mm at Object Distance Infinity 193.5mm at Object Distance 2.0m 145.5mm at Object Distance 1.0m



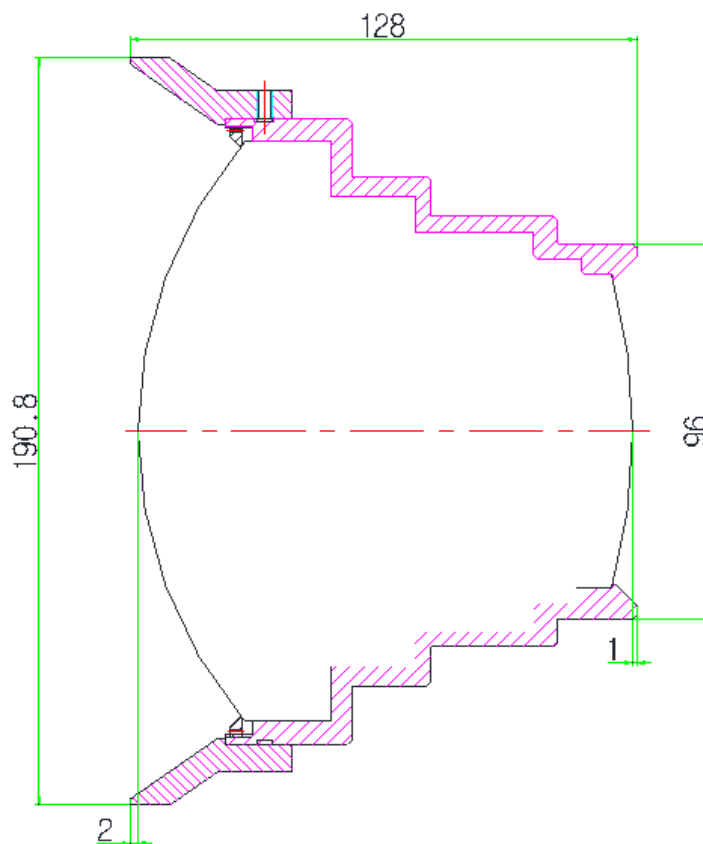
## Optical performance of CL-736 Lens (at Object Distance 2m)



Longitudinal chromatic aberration : 0.078D  
 Astigmatism : 0.025D  
 Field curvature : 0.019D  
 Distortion : -0.98%  
 Lateral chromatic aberration : 0.008D



## Drawings of CL-736 Lens



### CL-736 Lens Simulation

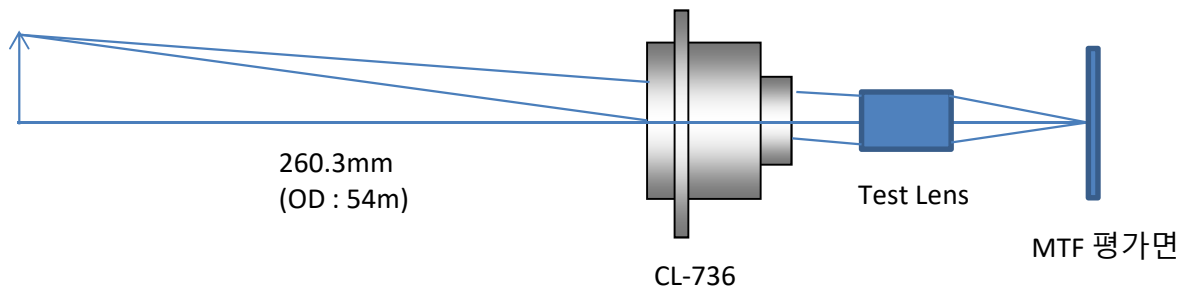
Test Lens Specification	
Effective focal length	19.2mm
f/#	2.4
Close focus	1m
Hyper focus	54m
FOV	17.2 degrees

※ Entrance Pupil Size :  $\Phi 8.0\text{mm}$

### MTF Graph

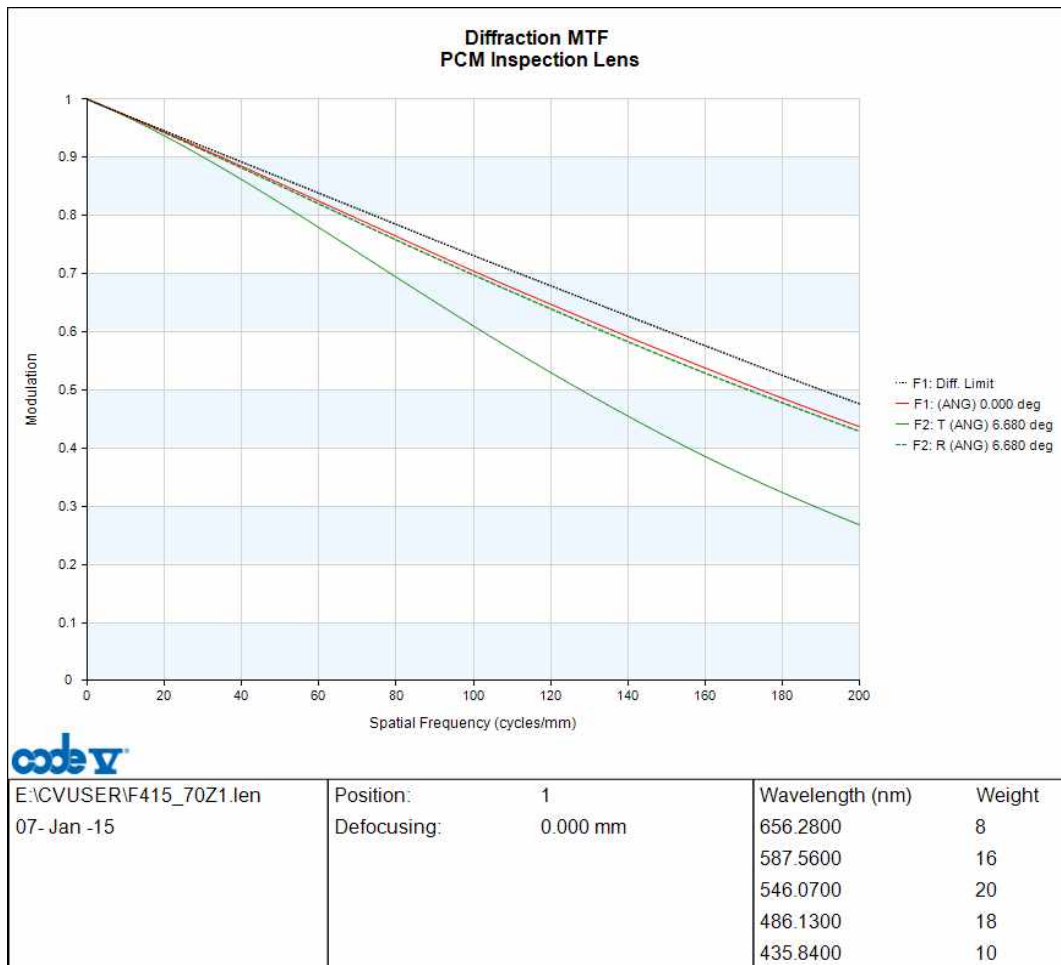
Object Distance : 54m

FOV 17.2 deg

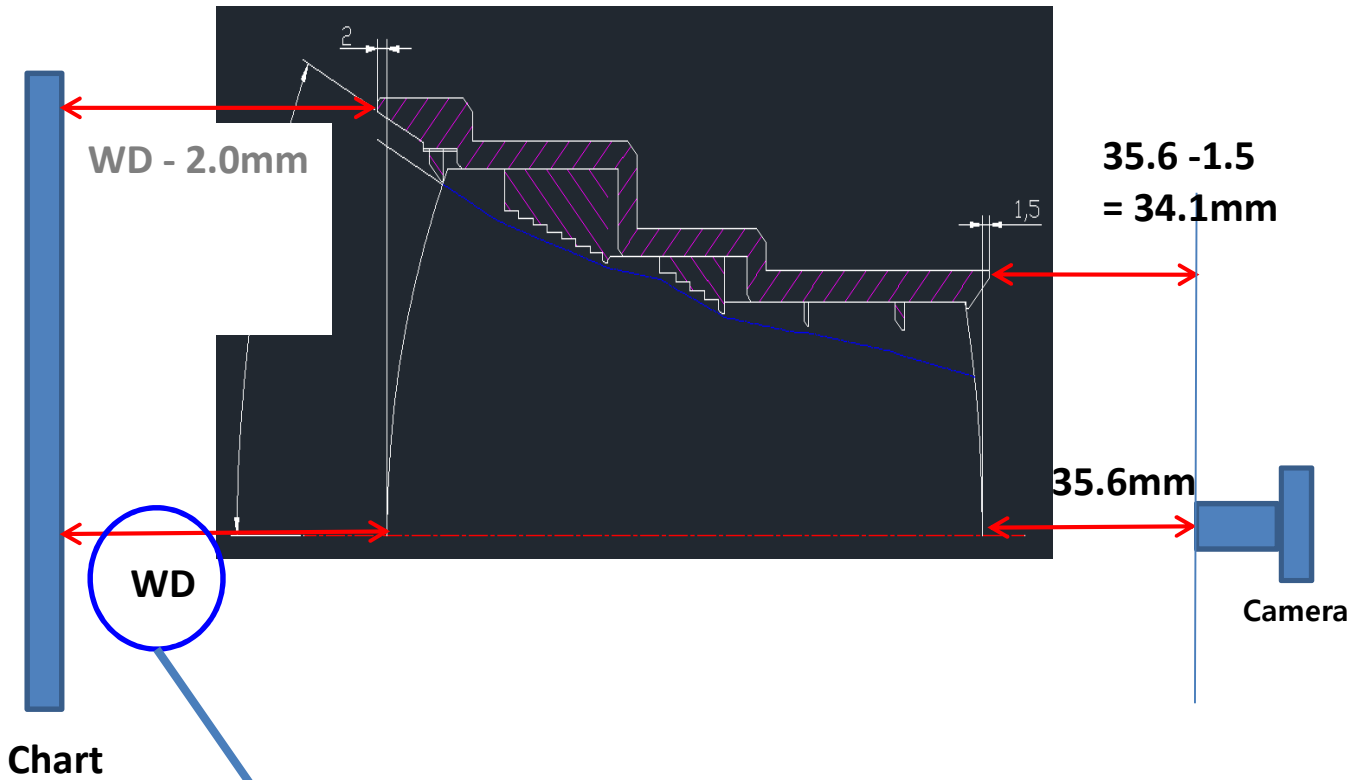


Fields : Center (0 degrees), 0.7F (6.68 degrees)

Spatial Frequency : 0 ~ 200lp/mm



## How to set Collimator Lens



### F415-70의 Chart Size 환산표 (FOV=35.47°)

Object Distance : Phone Camera에서 실제로 촬영하는 거리

Working Distance : Relay Lens에서 Chart 까지의 거리

※ 이 Table은 CCM Lens의 화각을 기준으로 작성한 차트크기표입니다.

PCM Module	
FOV	35.47

Object Distance (Object ~ PCM)	Working Distance (Chart ~ Relay Lens)	Chart Size (Φ, mm)
1.00E+100	263.5	265.9
7000	240.4	249.5
5000	231.9	243.5
4500	228.7	241.2

## Chart Size Table for CL-736 (FOV=70.0°)

Object Distance : Actual distance shooting with phone camera

Working Distance : Distacne from Relay Lens to Chart

※ The table below is the chart size calculated by reference to the CCM Lens with FOV 70.0°.

PCM Module	
FOV	70
HFOV	35

Object Distance	Working Distance	Chart Size (Φ, mm)
1.00E+100	263.5	586.4
50000	260.1	581.1
30000	257.8	577.6
10000	247.0	560.7
5000	231.9	537.1
4500	228.7	532.1
4000	224.9	526.1
3500	220.0	518.4
3000	213.7	508.6
2500	205.3	495.5
2000	193.5	477.0
1900	190.5	472.4
1800	187.3	467.3
1700	183.7	461.8
1600	179.9	455.8
1500	175.6	449.1
1400	170.9	441.7
1300	165.6	433.5
1200	159.7	424.3
1100	153.1	413.9
1000	145.5	402.1
900	136.9	388.5
800	126.8	372.8
700	115.0	354.4
600	101.0	332.6
500	84.1	306.2
450	74.3	290.8
400	63.3	273.6

Lens Pictures

